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Managerial Economics

Institute of **Open** and **Distance Education**

Faculty of Management

Managerial Economics

1BBA5

DR. C.V. RAMAN UNIVERSITY
Chhattisgarh, Bilaspur
A STATUTORY UNIVERSITY UNDER SECTION 2(F) OF THE UGC ACT

1BBA5, Managerial Economics

Edition: March 2024

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Managerial Economics

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INTRODUCTION

Economics is the study of supply and demand. It defines the ways that human beings allocate resources and how resources are distributed amongst a market. It allows you to see trends in current market places and predict what may happen in the future. Economics is social science, which is concerned with the efficient use of scarce resources to achieve the maximum satisfaction of economic wants. A basic understanding of economics is essential for well-informed people. Most of today's political problems have important economic aspects. What level of taxes should we have? How can we make social security retirement program financially secure? How can we increase rate of economic growth? How can we reduce poverty? How

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can we ensure that company's directors act in the long-run interest of their shareholders and not just for themselves? As citizens & voters we can influence decisions of our elected politicians in responding to such questions, therefore, a sound grasp of economics is very helpful to all of us. An understanding of basics of economic decision-making and the operation of economic system enables businessmen to increase profit. The businessman who understands when to use new technology, when to merge with another firm, when to expand employment, and so on, will be in a position to earn more profit. Economics helps consumers and workers make better buying and employment decisions. How can we spend our limited income to maximize our satisfaction? Is it more economical to buy a car on cash or to take it on lease? Should we use credit card or pay cash; and which occupation we should adopt that pays us well?

Economics is part of social sciences, which include sociology, psychology and political science. It is a study of how people make choices to satisfy their wants. Whenever an individual, a firm, or a nation faces alternatives, a choice must be made and economics helps us to study how those choices are made, for example, if we have to choose how to spend our limited income, how much of our firm's limited funds to spend on advertising and how much to spend on new product's research. In economics we examine situations in which individuals can choose how to do things, when to do things and with whom to do them. Ultimately the purpose of economics is to understand choices.

Managerial economics is a discipline which deals with the application of economic theory to business management. It deals with the use of economic concepts and principles of business decision making. Formerly it was known as "Business Economics" but the term has now been discarded in favor of Managerial Economics.

Managerial Economics may be defined as the study of economic theories, logic and methodology which are generally applied to seek solution to the practical problems of business. Managerial Economics is thus constituted of that part of economic knowledge or economic theories which is used as a tool of analyzing business problems for rational business decisions. Managerial Economics is often called as Business Economics or Economic for Firms.

Definition of Managerial Economics:

Managerial economic is described as an economics applied to decision making. It is viewed as a special branch of economics bridging the gap between pure economic theory and managerial practices. It is defined as application of economic theory and methodology to decision making process by the management of the business firms. In it economic theories and concepts are used to solve practical business problem. It lies on the borderline of economic and management. It helps in decision making under uncertainty and improves effectiveness of the organization.

The basic function of management of business and industrial enterprise is to achieve the objectives of the organization. To fulfill this responsibility, the management has to take many decisions on a variety of business issues.

According to Haynes, Mote and Paul,

"Managerial Economics is economics applied in decision making. It is a special branch of economics bridging the gap between abstract theory and managerial practice."

According to McNair and Meriam,

"Business Economics consists of the use of economic modes of thought to analyze business situations."

According to Spencer and Seegelman,

"Business Economics (Managerial Economics) is the integration of economic theory with business practice for the purpose of facilitating decision making and forward planning by management."

According to Mansfield,

"Managerial economics is concerned with application of economic concepts and economic analysis to the problems of formulating rational managerial decision."

Chief Characteristics:

- **Managerial Economics is micro economic in character:**

  This is because the unit of study is a firm; it is the problem of a business firm which is studied and it does not deal with the entire economy as a unit of study.

- **Managerial Economics uses economic concepts and principles:**

  Managerial Economics largely uses economic concepts and principles.

- **Managerial Economics is pragmatic**:

  It avoids difficult abstract issues of economic theory but involves complications ignored in economic theory to face the overall situations in which the decisions are made.

- **Managerial Economics belongs to normative rather than positive economics**:

  Positive economics derives useful theories with testable propositions about what is and normative economics provides the basis for value judgment on economic outcomes, what should be. In other words it is prescriptive rather then descriptive. It is known as the normative micro economics of the firm.

- **Macro Economics is also useful to managerial economics:**

  Macro economics provides an intelligent understanding of the environment in which the business unit must operate. This understanding enables a business executive to adjust in the best possible manner with external forces over which he has no control but which play a crucial role in the well being of his concern.

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NATURE OF MANAGERIAL ECONOMICS:

The primary function of management executive in a business organization is decision making and forward planning. Decision making and forward planning go hand in hand with each other. Decision making means the process of selecting one action from two or more alternative courses of action. Forward planning means establishing plans for the future to carry out the decision so taken. The problem of choice arises because resources at the disposal of a business unit (land, labour, capital, and managerial capacity) are limited and the firm has to make the most profitable use of these resources.

The decision making function is that of the business executive, he takes the decision which will ensure the most efficient means of attaining a desired objective, say profit maximization. After taking the decision about the particular output, pricing, capital, raw-materials and power etc., are prepared. Forward planning and decision-making thus go on at the same time. A business manager's task is made difficult by the uncertainty which surrounds business decision-making. Nobody can predict the future course of business conditions. He prepares the best possible plans for the future depending on past experience and future outlook and yet he has to go on revising his plans in the light of new experience to minimize the failure. Managers are thus engaged in a continuous process of decision-making through an uncertain future and the overall problem confronting them is one of adjusting to uncertainty.

In fulfilling the function of decision-making in an uncertainty framework, economic theory can be, pressed into service with considerable advantage as it deals with a number of concepts and principles which can be used to solve or at least throw some light upon the problems of business management, for e.g. profit, demand, cost, pricing, production, competition, business cycles, national income etc. The way economic analysis can be used towards solving business problems, constitutes the subject-matter of Managerial Economics. Thus in brief we can say that Managerial Economics is both a science and an art.

SCOPE OF MANAGERIAL ECONOMICS:

The scope of managerial economics is not yet clearly laid out because it is a developing science. Even then the following fields may be said to generally fall under Managerial Economics:

1. Demand Analysis and Forecasting
2. Cost and Production Analysis
3. Pricing Decisions, Policies and Practices
4. Profit Management
5. Capital Management

These divisions of business economics constitute its subject matter.

Recently, managerial economists have started making increased use of Operation Research methods like Linear programming, inventory models, Games theory, queuing up theory etc., have also come to be regarded as part of Managerial Economics.

1. **Demand Analysis and Forecasting:**

A business firm is an economic organization which is engaged in transforming productive resources into goods that are to be sold in the market. A major part of managerial decision making depends on accurate estimates of demand. A forecast of future sales serves as a guide to management for preparing production schedules and employing resources. It will help management to maintain or strengthen its market position and profit base. Demand analysis also identifies a number of other factors influencing the demand for a product. Demand analysis and forecasting occupies a strategic place in Managerial Economics.

2. **Cost and production analysis**:

A firm's profitability depends much on its cost of production. A wise manager would prepare cost estimates of a range of output, identify the factors causing are cause variations in cost estimates and choose the cost-minimizing output level, taking also into consideration the degree of uncertainty in production and cost calculations. Production processes are under the charge of engineers but the business manager is supposed to carry out the production function analysis in order to avoid wastages of materials and time. Sound pricing practices depend much on cost control. The main topics discussed under cost and production analysis are: Cost concepts, cost-output relationships, Economics and Diseconomies of scale and cost control.

3. **Pricing decisions, policies and practices**:

Pricing is a very important area of Managerial Economics. In fact, price is the genesis of the revenue of a firm ad as such the success of a business firm largely depends on the correctness of the price decisions taken by it. The important aspects dealt with this area are: Price determination in various market forms, pricing methods, differential pricing, product-line pricing and price forecasting.

4. **Profit management:**

Business firms are generally organized for earning profit and in the long period, it is profit which provides the chief measure of success of a firm. Economics tells us that profits are the reward for uncertainty bearing and risk taking. A successful business manager is one who can form more or less correct estimates of costs and revenues likely to accrue to the firm at different levels of output. The more successful a manager is in reducing uncertainty, the higher are the profits earned by him. In fact, profit-planning and profit measurement constitute the most challenging area of Managerial Economics.

5. **Capital management:**

The problems relating to firm's capital investments are perhaps the most complex and troublesome. Capital management implies planning and control of capital expenditure because it involves a large sum and moreover the

problems in disposing the capital assets off are so complex that they require considerable time and labour. The main topics dealt with under capital management are cost of capital, rate of return and selection of projects.

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MANAGERIAL ECONOMICS AND OTHER SUBJECTS:

Managerial Economics and Economics

Managerial Economics has been described as economics applied to decision- making. It may be viewed as a special branch of economics bridging the gulf between pure economic theory and managerial practice.

Economics has two main divisions: microeconomics and macroeconomics. Microeconomics has been defined as that branch where the unit of study is an individual or a firm. Macroeconomics, on the other hand, is aggregate in character and has the entire economy as a unit of study.

Microeconomics is also known as price theory (or Marshallian economics). It is the main source of concepts and analytical tools for managerial economics. To illustrate various micro-economic concepts such as elasticity of demand, marginal cost, the short and the long runs, various market forms, etc. are all of great significance to managerial economics. The chief contribution of macro-economics is in the area of forecasting. The modern theory of income and employment has direct implications for forecasting general business conditions. As the prospects of an individual firm often depend greatly on general business conditions, individual firm forecasts depend on general business forecasts.

A survey in the U.K. has shown that business economists have found the following economic concepts quite useful and of frequent application:

1. Price elasticity of demand
2. Income elasticity of demand
3. Opportunity cost
4. The multiplier
5. Propensity to consume
6. Marginal revenue product
7. Speculative motive
8. Production function
9. Balanced growth
10. Liquidity preference.

Business economics have also found the following main areas of economi9cs as useful in their work

1. Demand theory
2. Theory of the firm-price, output and investment decisions
3. Business financing

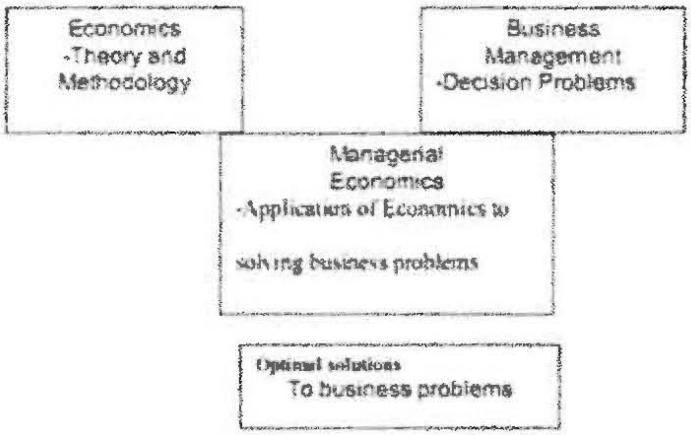
4. Public finance and fiscal policy
5. Money and banking
6. National income and social accounting
7. Theory of international trade
8. Economics of developing countries.

Managerial Economics and Accounting

Managerial Economics is also closely related to accounting, which is concerned with recording the financial operations of a business firm. Indeed, accounting information is one of the principal sources of data required by a managerial economist for his decision-making purpose. For instance, the profit and loss statement of a firm tells how well the firm has done and the information it contains can be used by managerial economist to throw significant light on the future course of action-whether it should improve or close down. Of course, accounting data call for careful interpretation.

It is in this context that the growing link between management accounting and managerial economics deserves special mention. The main task of management accounting is now seen as being to provide the sort of data which managers need if they are to apply the ideas of managerial economics to solve business problems correctly; the accounting data are also to be provided in a form so as to fit easily into the concepts and analysis of managerial economics.

Economics, Business Management and Managerial Economics:



Aspects of Application of Economics

The application of economics to business management or the integration of economic theory with business practice, as Spencer and Siegelman have put it, has the following aspects:

1) Reconciling traditional theoretical concepts of economics in relation to the actual business behavior and conditions. In economic theory, the technique

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of analysis is one of model building whereby certain assumptions are made and on that basis, conclusions as to the behavior of the firms are drowned. The assumptions, however, make the theory of the firm unrealistic since it fails to provide a satisfactory explanation of that what the firms actually do. Hence the need to reconcile the theoretical principles based on simplified assumptions with actual business practice and develops appropriate extensions and reformulation of economic theory, if necessary.

2) Estimating economic relationships, viz., measurement of various types of elasticity of demand such as price elasticity, income elasticity, cross-elasticity, promotional elasticity, cost-output relationships, etc. the estimates of these economic relation-ships are to be used for purposes of forecasting.

3) Predicting relevant economic quantities, e.g. profit, demand, production, costs, pricing, capital, etc., in numerical terms together with their probabilities. As the business manager has to work in an environment of uncertainty, future is to be predicted so that in the light of the predicted estimates, decision-making and forward planning may be possible.

4) Using economic quantities in decision-making and forward planning, that is, formulating business policies and, on that basis, establishing business plans for the future pertaining to profit, prices, costs, capital, etc. The nature of economic forecasting is such that it indicates the degree of probability of various possible outcomes, i.e. losses or gains as a result of following each one of the strategies available. Hence, before a business manager there exist a quantified picture indicating the number of courses open, their possible outcomes and the quantified probability of each outcome. Keeping this picture in view, he decides about the strategy to be chosen.

5) Understanding significant external forces constituting the environment in which the business is operating and to which it must adjust, e.g., business cycles, fluctuations in national income and government policies pertaining to public finance, fiscal policy and taxation, international economics and foreign trade, monetary economics, labour relations, anti-monopoly measures, industrial licensing, price controls, etc. The business manager has to appraise the relevance and impact of these external forces in relation to the particular business unit and its business policies.

USES OF MANAGERIAL ECONOMICS:

Managerial economics accomplishes several objectives. First, it presents those aspects of traditional economics, which are relevant for business decision making it real life. For the purpose, it culls from economic theory the concepts, principles and techniques of analysis which have a bearing on the decision making process. These are, if necessary, adapted or modified with a view to enable the manager take better decisions. Thus, managerial economics accomplishes the objective of building suitable tool kit from traditional economics.

Secondly, it also incorporates useful ideas from other disciplines such a psychology, sociology, etc., if they are found relevant for decision making. In face managerial economics takes the aid of other academic disciplines having a bearing upon the business decisions of a manager in view of the carious explicit and implicit con-

straints subject to which resource allocation is to be optimized.

Thirdly, managerial economics helps in reaching a variety of business decisions.

a) What products and services should be produced?

b) What inputs and production techniques should be used?

c) How much output should be produced and at what prices it should be sold?

d) What are the best sizes and locations of new plants?

e) How should the available capital be allocated?

Fourthly, managerial economics makes a manager a more competent model guilder. Thus he can capture the essential relationships which characterize a situation while leaving out the cluttering details and peripheral relationships.

Fifthly, at the level of the firm, where for various functional areas functional specialists or functional departments exist, e.g., finance, marketing, personal production, etc., managerial economics serves as an integrating agent by co-coordinating the different areas and bringing to bear on the decisions of each department or specialist the implications pertaining to other functional areas. It thus enables business decision- making not in watertight compartments but in an integrated perspective, the significance of which lies in the fact that the functional departments or specialists often enjoy considerable autonomy and achieve conflicting coals.

Finally, managerial economics takes cognizance of the interaction between the firm and society and accomplishes the key role of business as an agent in the attainment of social and economic welfare. It has come to be realized that business part from its obligations to shareholders has certain social obligations. Managerial economics focuses attention on these social obligations as constraints subject to which business decisions are to be taken. In so doing, it serves as an instrument in rehiring the economic welfare of the society through socially oriented business decisions.

MANAGERIAL ECONOMIST ROLE AND RESPONSIBILITIES

A managerial economist can play a very important role by assisting the Management in using the increasingly specialized skills and sophisticated techniques which are required to solve the difficult problems of successful decision-making and forward planning. That is why, in business concerns, his importance is being growingly recognized. In advanced countries like the U.S.A., large companies employ one or more economists. In our country too, big industrial houses have come to recognize the need for managerial economists, and there are frequent advertisements for such positions. Tatas, DCM and Hindustan Lever employ economists. Indian Petrochemicals Corporation Ltd., a Government of India undertaking, also keeps an economist.

Let us examine in specific terms how a managerial economist can contribute to decision-making in business. In this connection, two important questions need be considered:

1. What role does he play in business, that is, what particular management problems lend themselves to solution through economic analysis?

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Check Your Progress

1. What is Managerial Economics?
2. What is Capital Management?

2. How can the managerial economist best serve management, that is, what are the responsibilities of a successful managerial economist?

ROLE OF MANAGERIAL ECONOMIST

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A managerial economist helps the management by using his analytical skills and highly developed techniques in solving complex issues of successful decision-making and future advanced planning.

The **role of managerial economist** can be summarized as follows:

1. He studies the economic patterns at macro-level and analysis its significance to the specific firm he is working in.
2. He has to consistently examine the probabilities of transforming an ever-changing economic environment into profitable business avenues.
3. He assists the business planning process of a firm.
4. He also carries cost-benefit analysis.
5. He assists the management in the decisions pertaining to internal functioning of a firm such as changes in price, investment plans, type of goods /services to be produced, inputs to be used, techniques of production to be employed, expansion/ contraction of firm, allocation of capital, location of new plants, quantity of output to be produced, replacement of plant equipment, sales forecasting, inventory forecasting, etc.
6. In addition, a managerial economist has to analyze changes in macro- economic indicators such as national income, population, business cycles, and their possible effect on the firm's functioning.
7. He is also involved in advising the management on public relations, foreign exchange, and trade. He guides the firm on the likely impact of changes in monetary and fiscal policy on the firm's functioning.
8. He also makes an economic analysis of the firms in competition. He has to collect economic data and examine all crucial information about the environment in which the firm operates.
9. The most significant function of a managerial economist is to conduct a detailed research on industrial market.
10. In order to perform all these roles, a managerial economist has to conduct an elaborate statistical analysis.
11. He must be vigilant and must have ability to cope up with the pressures.
12. He also provides management with economic information such as tax rates, competitor's price and product, etc. They give their valuable advice to government authorities as well.
13. At times, a managerial economist has to prepare speeches for top management.

Specific Functions

A further idea of the role managerial economists can play, can be had from the following specific functions performed by them as revealed by a survey pertaining to Britain conducted by K.J.W. Alexander and Alexander G. Kemp:

1. Sales forecasting
2. Industrial market research.
3. Economic analysis of competing companies.
4. Pricing problems of industry.
5. Capital projects.
6. Production programs.
7. Security/investment analysis and forecasts.
8. Advice on trade and public relations.
9. Advice on primary commodities.
10. Advice on foreign exchange.
11. Economic analysis of agriculture.
12. Analysis of underdeveloped economics.
13. Environmental forecasting.

The managerial economist has to gather economic data, analyze all important information about the business environment and prepare position papers on issues facing the firm and the industry. In the case of industries prone to rapid technological advances, he may have to make a continuous assessment of the impact of changing technology. He may have to evaluate the capital budget in the light of short and long-range financial, profit and market potentialities.

Two major functions of a Managerial Economist:

A Managerial Economist is a specialist and an expert in analyzing and finding answers to business and managerial problems. He has in-depth knowledge of the subject. He is an authority and has total command over his subject.

A Managerial Economist has to perform several functions in an organization. Among them, decision-making and forward planning is described as the two major functions and all other functions are derived from these two basic functions. A detailed description of the two functions is given below for a understanding.

Decision-making: The word 'decision' suggests a deliberate choice made out of several possible alternative courses of action after carefully considering them. The act of choice signifying solution to an economic problem is economic decision making. It involves choices among a set of alternative courses of action.

Decision-making is essentially a process of selecting the best out of many alternative opportunities or courses of action that are open to a management.

Check Your Progress

3. Describe Theory of the Firm?
4. What is Microeconomics?
5. What is Decision Making?

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Decision-making is a management function. Decision-making is a routine affair in any business unit. Hence, it is a part of business activity. It is a basic function of a managerial economist. In the day-to-day business, he has to take innumerable decisions. Sometimes the manager takes the decision himself, sometimes in collaboration and consultations with others. Some decisions are taken on the spot and some others are taken after careful thinking. Some decisions are major and complex while others are minor and simple. Some decisions are taken in the absence of any information. Some decisions are taken in the background of certainty, known factors and information. Some other decisions are taken in the midst of uncertainties. The choice made by the business executives are difficult, crucial and have far reaching consequences. The basic aim of taking a decision is to select the best course of action which maximizes the economic benefits and minimizes the use of scarce resources of a firm. Hence, each decision involves cost-benefit analysis. Any slight error or delay in decision making may cause considerable economic and financial damage to a firm. It is for this reason, management experts are of the opinion that right decision – making at the right time is the secret of a successful manager.

Forward planning: The term 'planning' implies a consciously directed activity with certain predetermined goals and means to carry them out. It is a deliberate activity. It is a programmed action. Basically planning is concerned with tackling future situations in a systematic manner.

Forward planning implies planning in advance for the future. It is associated with deciding the future course of action of a firm. It is prepared on the basis of past and current experience of a firm. It is prepared in the background of uncertain and unpredictable environment and guess work. Future events and happenings cannot be predicted accurately. The success or failure of the future plan depends on a number of factors and forces which are unknown in nature. Much of economic activity is forward looking. Every time we build a new factory, add to the stocks of inputs, trucks, computers or improvements in R&D, our intension is to enhance the future productivity of the firm. Growing firms devote a significant share of their current output to net capital formation to bolster future economic output. A business executive must be sufficiently intelligent enough to think in advance, prepare a sound plan and take all possible precautionary measures to meet all types of challenges of the future business. Hence, forward planning has acquired greater significance in business circles.

IMPORTANCE OF THE STUDY OF MANAGERIAL ECONOMICS:

Managerial Economics does not give importance to the study of theoretical economic concepts. Its main concern is to apply theories to find solutions to day –today practical problems faced by a firm. The following points indicate the significance of the study of this subject in its right perspective.

1) It gives guidance for identification of key variables in decision-making process.

2) It helps the business executives to understand the various intricacies of business and managerial problems and to take right decision at the right time.

3) It provides the necessary conceptual, technical skills, toolbox of analysis and techniques of thinking and other such most modern tools and instruments like elasticity of demand and supply, cost and revenue, income and expenditure, profit and volume of production etc to solve various business problems.

4) It is both a science and an art. In the context of globalization, privatization, liberalization and marketization and a highly competitive dynamic economy, it helps in identifying various business and managerial problems, their causes and consequence, and suggests various policies and programs to overcome them.

5) It helps the business executives to become much more responsive, realistic and competent to face the ever changing challenges in the modern business world.

6) It helps in the optimum use of scarce resources of a firm to maximize its profits.

7) It also helps in achieving other objectives a firm like attaining industry leadership, market share expansion and social responsibilities etc.

8) It helps a firm in forecasting the most important economic variables like demand, supply, cost, revenue, price, sales and profit etc and formulate sound business polices.

9) It also helps in understanding the various external factors and forces which affect the decision-making of a firm.

Thus, it has become a highly useful and practical discipline in recent years to analyze and find solutions to various kinds of problems in a systematic and rational manner.

TECHNIQUES OF MANAGERIAL ECONOMICS:

Managerial economics draws on a wide variety of economic concepts, tools and techniques in the decision-making process. These concepts can be categorized as follows: (1) the theory of the firm, which explains how businesses make a variety of decisions; (2) the theory of consumer behavior, which describes the consumer's decision-making process and (3) the theory of market structure and pricing, which describes the structure and characteristics of different market forms under which business firms operate.

1) **Theory of the firm:** A firm can be considered an amalgamation of people, physical and financial resources and a variety of information. Firms exist because they perform useful functions in society by producing and distributing goods and services. In the process of accomplishing this, they employ society's scarce resources, provide employment and pay taxes. If economic activities of society can be simply put into two categories- production and consumption- firms are considered the most basic economic entities on the production side, while consumers form the basic economic entities on the consumption side. The behaviour of firms is usually analyzed in the context of an economic model, which is an idealized version of a real-world firm.

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The basic economic model of a business enterprise is called the theory of the firm.

2) **Theory of consumer behaviour:** The role of consumers in an economy is of vital importance since consumers spend most of their incomes on goods and services produced by firms. Consumers consume what firms produce. Thus, study of the theory of consumer behaviour is accorded importance. It is desirous to know the ultimate objective of a consumer. Economists have an optimization model for consumers, which is analogous to that applied to firms or producers. While it is assumed that firms attempt at maximizing profits, similarly there is an assumption that consumers attempt at maximizing their utility or satisfaction. While more goods and services provide greater utility to a consumer, however, consumers, like firms, are subject to constraints. Their consumption and choices are limited by a number of factors, including the amount of disposable income (the residual income after income taxes are paid for). A consumer's choice to consume is described by economists within a theoretical framework usually termed the theory of demand.

3) **Theories associated with different market structures:** A firms profit maximizing output decisions take into account the market structure under which they are operate. There are four kinds of market organizations: perfect competition, monopolistic competition, oligopoly and monopoly.

CASE STUDY:

The Managerial Economics of Samsonite

Samsonite International S.A. is the world's largest travel luggage company by retail sales value in 2010, with a 100-year heritage. Samsonite was founded in 1910 in the US by Jesse Shwayder. The brand was named after the biblical character, Samson.

I attended a presentation of the company, who has just launched an IPO, to be listed in Hong Kong. What struck me in the presentation was the company is a great case-study for Managerial Economics.

Samsonite has always been a great brand, and was taken over by CVC in 2007. Due to the impact of the financial crisis on travel industry, Samsonite filed for bankruptcy in 2009. Tim Parker, who took, over as the CEO, in 2009 has turned things around and today they are in fine fettle and have launched what could be a $1.2 bn IPO. I will refrain from making a judgement on whether one should subscribe to the IPO. My focus will be on the fundamental changes.

Sure there has been a luck factor. Mr. Parker took over right at the bottom of the cycle, but then what he has done: Typical Managerial Economics 101 stuff, has in my view played a huge role in the turn-around. I will focus on the that part of restructuring which did not involve the financial restructuring.

Some of the initiatives that I could gather in the meeting were:

- Cutting Costs and reducing fixed costs

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- Understanding the Market/ Customer better
- Spending on brand building and R&D : creating barriers to entry

All these initiatives have meant that the company is making Economic profits and is on a great growth path.

SUMMARY:

- Economics is the study of supply and demand. It defines the ways that human beings allocate resources and how resources are distributed amongst a market.
- Managerial economics is a discipline which deals with the application of economic theory to business management.
- Managerial Economics is micro economic in character. Managerial Economics is pragmatic. Managerial Economics belongs to normative rather than positive economics. Macro Economics is also useful to managerial economics.
- Managerial Economics has been described as economics applied to decision- making.
- Microeconomics has been defined as that branch where the unit of study is an individual or a firm. Macroeconomics, on the other hand, is aggregate in character and has the entire economy as a unit of study.
- Managerial economics helps in reaching a variety of business decisions, for e.g. :
    1. What products and services should be produced?
    2. What inputs and production techniques should be used?
    3. How much output should be produced and at what prices it should be sold?
    4. What are the best sizes and locations of new plants?
    5. How should the available capital be allocated?
- A managerial economist helps the management by using his analytical skills and highly developed techniques in solving complex issues of successful decision-making and future advanced planning.

ANSWERS TO 'CHECK YOUR PROGRESS'

1. "Managerial Economics is economics applied in decision making. It is a special branch of economics bridging the gap between abstract theory and managerial practice."
2. Capital management implies planning and control of capital expenditure because it involves a large sum and moreover the problems in disposing the capital assets off are so complex that they require considerable time and labour. The main topics dealt with under capital management are cost of capital, rate of return and selection of projects.

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3. **Theory of the firm:** A firm can be considered an amalgamation of people, physical and financial resources and a variety of information. Firms exist because they perform useful functions in society by producing and distributing goods and services.
4. Microeconomics is also known as price theory (or Marshallian economics). It is the main source of concepts and analytical tools for managerial economics. To illustrate various micro-economic concepts such as elasticity of demand, marginal cost, the short and the long runs, various market forms, etc. are all of great significance to managerial economics.
5. Decision-making is a management function. Decision-making is a routine affair in any business unit. Hence, it is a part of business activity. It is a basic function of a managerial economist.

TEST YOURSELF :

Long questions :

1. Define Managerial Economics and discuss its characteristics.
2. Discuss the Scope of Managerial Economics.
3. Explain role and responsibilities of Managerial Economist.
4. What are the uses of Managerial Economics?
5. Explain various techniques of Managerial Economics.
6. Explain the importance of Managerial Economics.

Short Questions:

1) Define Managerial Economics.
2) Describe various characteristics of Managerial Economics.
3) State various aspects of Managerial Economics.
4) What is the relation between Managerial Economics and Accounting?
5) Give any two importances of Managerial Economics?

FURTHER READING

- Managerial Economics: P.L.Mehta
- Raj Kumar Gupta
- K.N. Devadi

2 DEMAND ANALYSIS

NOTES

The Chapter Covers :

- MEANING OF DEMAND:
- DEMAND FUNCTION:
- TYPES OF DEMAND
- FACTORS AFFECTING DEMAND:
- OTHER FACTORS:
- LAW OF DEMAND:
- CAUSES OF THE APPLICATION OF LAW OF DEMAND:
- EXCEPTIONS TO LAW OF DEMAND:
- CHANGE IN QUANTITY DEMANDED & CHANGE IN DEMAND
- DETERMINANTS OF DEMAND
- ELASTICITY OF DEMAND
- VARIOUS CONCEPTS OF ELASTICITY OF DEMAND:
- DEGREES OR TYPES OF ELASTICITY OF DEMAND:
- METHODS OF MEASUREMENT OF PRICE ELASTICITY OF DEMAND:
- ELASTICITY MEASURES, MEANING AND NOMENCLATURE
- USES OF THE CONCEPT OF ELASTICITY OF DEMAND:

MEANING OF DEMAND:

Demand is defined as the quantity of a good or service that consumers are **willing and able to buy** at a **given price in a given time period**. It is to be noted that demand in economics is something more than desire to purchase though desire is one element of it. Each of us has an **individual demand** for particular goods and services and the level of demand at each market price reflects the **value** that consumers place on a product and their **expected satisfaction** gained from purchase and consumption. A beggar, for instance, may desire food, but due to lack of means of purchase it, his demand is not effective. Thus effective demand for a thing depends on

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1 Desire,

2 Means of purchase, and

3 On willingness to use those means for that purchase.

Unless demand is backed by purchasing power or ability to pay, it does not constitute demand. Two things are to be noted about quantity demanded. One is that quantity demanded is always expressed at a given price. At different prices different quantities of a commodity are generally demanded. The second thing is that quantity demanded is a flow.

FEATURES:

1) Demand is an effective desire it means demand = desire + means to fulfill the desire + willingness to part with means.
2) Demand is always related to quantity price & time.
3) Demand is a flow because it is measured over a period of time.
4) Demand for a commodity depends on its utility.

DEMAND FUNCTION:

Demand function is the functional relationship between demand & its determinants. The demand function is an algebraic expression of the relationship between demand for a commodity and its various determinants that offer this quantity.

There are two types of demand functions:

1) **Individual Demand Function**: It refers to the quantities of a commodity demanded at various prices, given his income; price of related good and taste are constant. It is expressed as

$$D = f(P)$$

where D = Demand, P = Price, f = Function

2) **Market Demand Function:** It refers to the total demand for good or service of all buyers taken together. An individual demand function is the basis of demand theory but it is the market demand function whose main interest is to managers. The demand function is expressed as

$$D_x = f(P_x, P_Y, M, T, A, U)$$

where,

D_x = Quantity demanded of commodity X

f = Functional relation

P_x = Price of commodity X

P_Y = Price of commodity Y

M = The money income of the consumer

T = The taste of the consumer

A = The advertisement effect

U = Unknown variable

TYPES OF DEMAND

1) **Price demand:** - Price demand is the demand of a commodity at a given price. While explaining price demand, it is assumed that income, habits,

tastes etc. of consumers remain constant. Demand for a commodity increases on a fall in its price and vice-versa.

2) **Income demand:** - Income demand explains the difference in quantities purchased by a consumer at different levels of income. While explaining income demand, it is assumed that price of a commodity, prices of substitute goods, habits and tastes of consumers etc. remain constant.

3) **Cross demand:** - Cross demands studies effect on the demand of the particular commodity of changes in the price of other commodities related with that commodity. While explaining cross demand, it is assumed that price of commodity, income, habits and tastes of consumer's remains constant. Other things being equal cross demand indicates the functional relationship between the price of a commodity & the demand for some other related commodity.

4) **Composite demand:** - The demand for the commodities which are demanded for the satisfaction of various wants e.g.: electricity, milk etc.

5) **Joint demand:** - This demand is also known as complementary demand. It is the demand for commodities which are demanded jointly. E.g.: car and petrol, pen and ink etc.

6) **Derived demand:** It is a demand for factors of production. When demand of a particular good and service depends upon the demand of other goods and services, it is called derived demand. For Example: Demand of labour is derived demand because it depends upon the demands of goods and services produced by labour.

FACTORS AFFECTING DEMAND:

1) **Price of the commodity:** Ceteris paribus i.e. other thing being equal, the demand for the commodity is inversely related to its price. It implies that when price increases quantity demanded decreases & with the decrease in the price quantity demanded increases. This happens because of income and substitution effect.

2) **Price of related goods:** There are 2 types of related goods:

    1 **Substitute goods**: - Those goods which are used in place of one other to satisfy same type of wants. Demand curve in case of substitute goods is upward sloping which shows that if the price of a commodity increases the demand for its substitute commodity will increases & vice –versa. For Example: tea and coffee, ink pen and ball pen, are substitutes for each other.

    2 **Complementary goods:** -Those goods which cannot be used separately they complement each other. In other words, complementary goods are those goods which are consumed together or simultaneously. Demand cure in this case will be downward sloping which shows that with the increase in the price of a commodity demand for its complementary goods will be decreases & vice – versa. For Example: Tea and sugar, automobile and petrol, pen and ink are used together.

3) **Income of the consumer:** - It can be explained with the help of 3 types of goods:

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1 **Superior goods/Normal goods:** - These are those goods for which demand increases with increases in income & decreases with decreases in income. It means normal goods have positive income effect & demand curve will be upward sloping.

2 **Inferior goods:** - Theses are those goods which are poor in quality & they are demanded more at lower income & less at higher income i.e. when income increases & demand decreases, vice –versa. In this case income effect is Negative & demand curve is downward sloping.

4) **Taste & preferences of consumer:** - The demand for a commodity also depends upon tastes and preferences of consumes and changes in them over a period of time. Goods which are more in fashion command higher demand than goods which are out of fashion. With the favorable change in taste & preferences demand for the product increases on the other hand when there unfavorable change in taste & preferences of the consumer the demand decreases.

5) **Future expectations:** - If price rise is expected in future then the demand for the product at present will be more. On the other hand, if fall in price is expected in future then the demand for the product at present will decrease.

OTHER FACTORS:

1) **Population**: - Increase in population increases the market demand of the product & decrease in the population decreases market demand. Composition of population also affects market demand. E.g.:- If the % of agriculturists is more in the population then the demand for goods used by them will be more.

2) **Season & weather:** - Demand of a commodity changes with the change in climate or weather conditions. E.g.: Demand for A.C. & Coolers will be more demanded in summers in compassion to winters.

3) **Govt. Policy:** - It is related to the imposition of taxes & granting subsidies. More taxes higher prices & lower will be demand. Lower taxes lower prices & higher will be the demand. More subsidies lower will be the price & higher demand.

4) **State of business:** - Good state of business means higher income & higher will be the demand & vice – versa.

LAW OF DEMAND:

The law of demand is one of the most important laws of economic theory. The law of demand states that, if all other factors remain equal, the higher the price of a good, the less people will demand that good. In other words, the higher the price, the lower the quantity demanded. Thus there is inverse relationship between price and quantity demanded, other things being same. The other things which are assumed to be equal or constant are the prices of relative goods, income of consumers, taste and preference of consumers, and such other factors which influence demand.

According to Samuelson, "When the price of a good is raised (at the same time that of all other things are held constant) less it will be demanded.....people will

buy more at lower price and buy less at higher prices."

Law of demand can be explained with the help of demand schedule & demand curve. Demand schedule is a table which shows various quantities of commodities which can be purchased at various prices during a given period of time. It is of two types:

1. Individual demand schedule: - It is a table which shows various quantity of a commodity demanded by an Individual consumer at various prices during a particular period of time.

To illustrate the relation between the quantity of a commodity demanded and its price, we may take hypothetical data for prices and quantities of a commodity X.

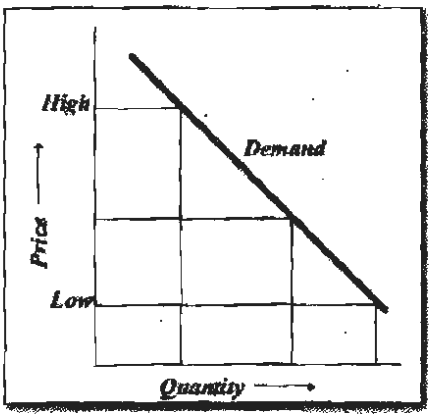
Demand schedule of an individual consumer

	Price (Rs.)	Quantity Demanded (units)
A	5	10
B	4	15
C	3	20
D	2	35
E	1	60

When price of a commodity X is Rs. 5 per unit a consumer purchases 10 units of the commodity. When the price falls to Rs. 4, he purchases 15 units of the commodity. Similarly, when the price further falls, quantity demanded by him goes on rising until at Re. 1, the quantity demanded by him rises to 60 units. The above table depicts an inverse relationship between prices and quantity demanded as the price of the commodity X goes on rising, its demand goes on falling.

Individual Demand Curve: Demand for a particular product or service represents how much people are willing to purchase at various prices. Thus, demand is a relationship between price and quantity, with all other factors remaining constant. Demand is represented graphically as a downward sloping curve with price on the vertical axis and quantity on the horizontal axis.

Generally the relationship between price and quantity is negative. This means that the higher is the price level the lower will be the quantity demanded and, conversely, the lower the price the higher will be the quantity demanded.



Demand Curve

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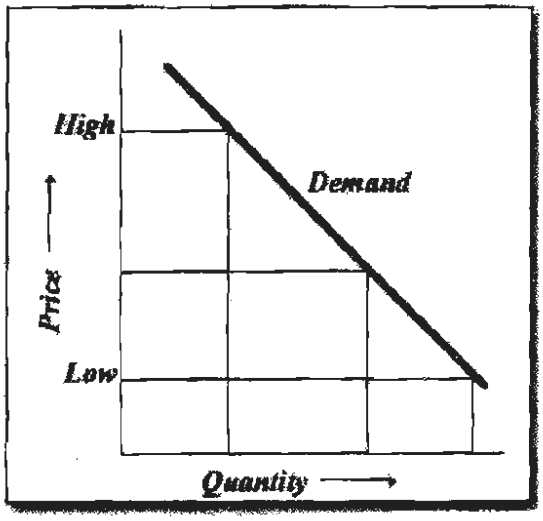
2. Market demand schedule: It is a table which shows various quantity of a commodity demanded by all the consumers of that commodity during particular period of time at various prices. Suppose there are three individual buyers of the goods in the market.

Market Demand Schedule

Price (Rs.)	Quantity Demanded by			Total Market Demand
	P	Q	R	
5	10	8	12	30
4	15	12	18	45
3	20	17	23	60
2	35	25	40	100
1	60	35	45	140

When we add quantities demanded at each price y consumers P, Q, R we get total market demand. Thus, when price is Rs. 5per unit, the demand for commodity 'X' in the market is 30 units. When price falls to Rs. 4, market demand is 45 units. At Re.1, 140 units are demanded in the market. Thus, the market demand schedule is also indicates inverse relationship between price and quantity demanded of 'X'.



Market Demand Curve

Market demand is the sum of the demands of all individuals within the marketplace. Market demand will be affected by other variables in addition to price, such as various value added services including handling, packaging, location, quality control, and financing.

CAUSES OF THE APPLICATION OF LAW OF DEMAND:

1) **Law of diminishing marginal utility:** - Utility of a commodity is a want satisfying power of a commodity. The law of diminishing marginal utility states that when consumer increases the consumption of a particular commodity, keeping constant the consumption of other commodities, every additional unit of the commodity provides him declining utility. Due to this reason, consumer will purchase additional unit of a commodity only when he gets it at a lower price. For this reason, demand at higher price is less and at lower price is more.

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2) **Income effect:** - With the change in the price of the commodity real income or the purchasing power of the consumer also changes. When the price of a commodity falls, the consumer can buy the same quantity of the commodity with lesser money or he can buy more of the same commodity with the same money. In other words, as a result of fall in the price of the commodity, consumer's real income and purchasing power increases. This increase in the real income induces him to buy more of that commodity. Thus, demand for that commodity (whose price has fallen) increases. This is called income effect.

3) **Substitution effect:** - When there is increase in the price of a commodity keeping the price of its substitute's constant the demand for the commodity decreases & if there is fall in the price keeping the substitutes price constant the demand of the commodity increases. The sum total of income & substitution effect is known price effect.

4) **New consumers:** - Fall in the price leads to an increase in the quantity demanded of commodity due to increase in number of consumers of that particular commodity in the market. On the other hand if there is increase in the price of a commodity some consumers will stop buying that commodity & then quantity demanded decreases thus the demand curve is downward sloping.

5) **Different uses of the commodity:** - When the price of a commodity which has several uses falls it can be used for all possible uses thus the demand for this commodity increases. On the other hand if price increase it will only be used for most important use thus quantity demanded will be decreasing & the demand curve will be downward sloping.

EXCEPTIONS TO LAW OF DEMAND:

1) **Conspicuous Goods:** Some consumers' measure the utility of a commodity by its price i.e., if the commodity is expensive they think that it has got more utility. As such, they buy less of this commodity at low price and more of it at high price.

2) **Giffen goods**: - These are those inferior quality goods on which consumer spends large part of his income. Demand for Giffen goods falls with the fall in price & increases with increase in price thus the demand curve will be upward sloping.

3) **Articles of snob appeals:** - In case of some commodities people like to buy them to show their status & prestige such types of commodities is demanded only at very high prices. Thus higher is the price higher will be the demand & lower is the price, lower will be the demand. Thus. Demand curve will be upward sloping.

4) **Quality – price relationship:** - It is also responsible for an upward sloping of demand curve. It means few consumers purchase a commodity only at high price because they feel quality of the product will then only be good when its price is high.

5) **Future expectations regarding Change in price:** - If price rise is expected in future then quantity demanded will be more even at higher prices.

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On the other hand if lower prices are expected in future then the quantity demanded will be less even at lower prices.

CHANGE IN QUANTITY DEMANDED & CHANGE IN DEMAND (MOVEMENT OF DEMAND CURVE)

1) **Change in quantity demanded or movement along the demand curve:** Movement along the demand curve is caused by a change in the price of the goods other things remaining constant. It is also known as change in quantity demanded. There are 2 types of movement of it.
   1. **Expansion or extension of demand:** - It refers to rise in quantity demanded due to fall in the price of the good. It is the downward movement on same demand curve.
   2. **Contraction of demand:** - It refers to fall in quantity demanded due to increase in price of the commodity. It is an upward movement on the same demand curve.
2) **Change in demand or shift of demand curve:** Shift of demand curve is caused by changes in factors other than price of the commodity. These factors are consumer's income, price of related goods, consumers taste & preferences. This is of 2 types :-
   1. **Increase in demand:** - It refers to the change in demand or increase in demand at a given price. It means in this case price remains same but due to some favorable changes among other factors demand increases. Demand curve in this case shifts to the right hand side.
   2. **Decrease in demand:-** If refers to decrease in demand due to change in factors other than price of the commodity It means, keeping the price constant due to some unfavorable changes in the determinants of demand, demand decreases, & Demand curve Shifts to the left hand side.

DETERMINANTS OF DEMAND

After having understood the nature of demand and law of demand, it is easy to ascertain the determinants of demand. We have mentioned above that an individual demand for a commodity depends on desire for the commodity and his capability to purchase it. The desire to purchase is revealed by tastes and preferences of the individuals. The capability to purchase depends upon his purchasing power, which in turn depends upon his income and price of the commodity. Since an individual purchases a number of commodities, the quantity of a particular commodity he chooses to purchase depends on the price of that particular commodity and prices of the other commodities, as well as the relative amount of his income, or purchasing power. So, the amount demanded (per unit of time) of a commodity depends upon following factors:

1) **Prices of related commodities:** The amount demanded of a commodity depends upon the price of its related commodities. The related commodities are of two types' substitutes and complements. When the price of one commodity increases demand of its substitute increases.
2) **Income of the individual:** The amount demanded of a commodity also depends upon the income of an individual. With increase in income, amount of most of the commodities in his consumption bundle increased.

3) **Tastes of the consumers:** The amount demanded also depends on consumer's taste. Tastes include fashion, habit, customs, etc. A consumer's taste is also affected by advertisement. If the taste for a commodity goes up, its amount demanded is more even at the same price and vice-versa.

4) **Wealth:** The amount demanded of a commodity is also affected by the amount of wealth as well as its distribution. The wealthier are the people, higher is the demand for normal commodities. If wealth is more equally distributed, the demand for necessaries and comforts is more.

5) **Expectations regarding the future:** If consumers expect changes in price of a commodity in future; they will change the demand at present even when the present price remains the same. Similarly, if consumers expect their incomes to rise in the near future, they may increase the demand for a commodity just now.

6) **Climate and weather**: The climate of an area and the weather prevailing there has a decisive effect on consumer's demand. In cold areas, woolen cloth is demanded. During hot summer days, ice is very much in demand. On a rainy day, ice-cream is not so much demanded.

7) **State of business:** The level of demand for different commodities also depends upon the business conditions in the country. If the country is passing through boom conditions, there will be a marked increase in demand. On the other hand, the level of demand goes down during depression.

ELASTICITY OF DEMAND

The degree to which a demand or supply curve reacts to a change in price is the curve's elasticity. Elasticity varies among products because some products may be more essential to the consumer. Products that are necessities are more insensitive to price changes because consumers would continue buying these products despite price increases. Conversely, a price increase of a good or service that is considered less of a necessity will deter more consumers because the opportunity cost of buying the product will become too high.

A good or service is considered to be highly elastic if a slight change in price leads to a sharp change in the quantity demanded or supplied. Usually these kinds of products are readily available in the market and a person may not necessarily need them in his or her daily life. On the other hand, an inelastic good or service is one in which changes in price witness only modest changes in the quantity demanded or supplied, if any at all. These goods tend to be things that are more of a necessity to the consumer in his or her daily life. To determine the elasticity of the supply or demand curves, we can use this simple equation:

$$\text{Elasticity} = \left(\frac{\text{\% change in quantity}}{\textbf{\% change in price}}\right)$$

If elasticity is greater than or equal to one, the curve is considered to be elastic. If it is less than one, the curve is said to be inelastic.

Definition of Elasticity of Demand:

Elasticity of demand is defined as the responsiveness of the quantity demanded of a good to changes in one of the variables on which demands depends or we can

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say that it the percentage change in quantity demanded divided by the percentage in one of the variables on which demand depends. These variables are price of the commodity, price of related commodities, income of the consumers and other various factors on which demand depends. Thus we have price elasticity, cross elasticity, elasticity of substitution, and income elasticity.

According to Marshall, "The elasticity of demand in a market is great or small according to as the amount demanded increases much or little for a given fall in price and diminishes much or little for a given rise in price."

According to Prof. Eastham, "Elasticity of demand is a measure of the responsiveness of quantity demanded to a change in price."

Thus elasticity of demand is the ratio of percentage change in the quantity demanded to a percentage change in the price of the commodity. It measures the change in the demand of commodity in response to a given change in its price.

VARIOUS CONCEPTS OF ELASTICITY OF DEMAND:

1) **Price elasticity of Demand:**

The price elasticity of demand measures the responsiveness or sensitivity of the quantity demanded of a particular product to changes in its price, keeping consumer's income, his tastes and prices of all other goods are constant. Price elasticity of demand measures the percentage change in quantity demanded caused by a percent change in price. Price elasticity of demand is so common form of elasticity of demand. Price Elasticity of Demand can be presented as follows:

$$\text{Price Elasticity of Demand} = Edp = \frac{\%\text{change in quantity demanded}}{\%\text{ change in price}}$$

Or, in symbolic terms,

$$edp = \frac{\Delta q}{q} \times \frac{p}{\Delta p} = \frac{Q_1 - Q_2}{Q_1} \times \frac{P_1}{P_1 - P_2}$$

Where,

ed_p = Price elasticity of demand

q = Quantity demand

p = price

Δp = proportionate change in price

Δq = proportionate change in quantity

Q_1 = Quantity demanded before change in price

Q_2 = Quantity demanded after change in price

P_1 = Original price

P_2 = Changed price

Factors that determine the value of price elasticity of demand:

a) **Number of close substitutes within the market:** The more (and closer) substitutes available in the market the more elastic demand will

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be in response to a change in price. In this case, the substitution effect will be quite strong.

b) **Luxuries and necessities:** Luxury products tend to have greater elasticity. Some products that initially have a low degree of necessity are habit forming and can become "necessities" to some consumers. Necessities tend to have a more inelastic demand curve, whereas luxury goods and services tend to be more elastic.

c) **Percentage of income spent on a good** - It may be the case that the smaller the proportion of income spent taken up with purchasing the good or service the more inelastic demand will be.

d) **Habit forming goods** - Goods such as cigarettes and drugs tend to be inelastic in demand. Preferences are such that habitual consumers of certain products become de-sensitized to price changes.

e) **Time period under consideration** - Demand tends to be more elastic in the long run rather than in the short run.

2) **Income Elasticity of Demand:**

Income elasticity of demand measures the percentage change in the quantity demanded of a commodity in relation to the changes in income of consumers. A change in income causes the demand curve to shift reflecting the change in demand. IED is a measurement of how far the curve shifts horizontally along the X-axis. Income elasticity can be used to classify goods as normal or inferior. It can be illustrated as:

$$\text{Income Elasticity of demand} = \frac{\%\text{ change in demand}}{\%\text{ change in income}}$$

Or, in symbolic form,

$$e_i = \frac{\Delta q}{q} \times \frac{i}{\Delta i} = \frac{Q_1 - Q_2}{Q_1} \times \frac{I_1}{I_1 - I_2}$$

Where,

e_i = Income elasticity of demand

q = Quantity demand

i = Income

Δi = proportionate change in income

Δq = proportionate change in quantity

Q_1 = Quantity demanded before change in income

Q_2 = Quantity demanded after change in income

I_1 = Original income

I_2 = Changed income

Check Your Progress

1. What is meaning of Demand?
2. Give Law of Demand?
3. What is Elastic Demand?

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3) **Cross Elasticity of Demand:**

The Cross-Price Elasticity of Demand measures the rate of response of quantity demanded of one good, due to a price change of another good. It other words, proportionate change in the demand of commodity X in response to a proportionate change in the price of a related commodity Y. Goods can be complements, substitutes or unrelated. If two goods are substitutes, we should expect to see consumers purchase more of one good when the price of its substitute increases. Similarly if the two goods are complements, we should see a price rise in one good cause the demand for both goods to fall. The common formula for the Cross-Price Elasticity of Demand is given by:

$$CPED = \frac{(\%\text{ Change in Quantity Demand for Good X})}{(\%\text{ Change in Price for Good Y})}$$

Where,

e_c = Cross elasticity of demand

q_x = Quantity demand of commodity X

P_y = Price of commodity Y

Δ = proportionate change in (q-quantity, p-price)

Q_{1x} = Quantity demanded of X before change in price of Y

Q_{2x} = Quantity demanded of X after change in price of Y

P_{1y} = Original price of Y

P_{2y} = Changed price of Y

DEGREES OR TYPES OF ELASTICITY OF DEMAND:

We have stated demand for a product is sensitive or responsive to price change. The variation in demand is, however, not uniform with a change in price. In case of some products, a small change in price leads to a relatively larger change in quantity demanded. For example, a decline of 1% in price leads to 8% increase in the quantity demanded of a commodity. In such a case, the demand is said to elastic. There are other products where the quantity demanded is relatively unresponsive to price changes. A decline of 8% in price, for example, gives rise to 1% increase in quantity demanded. Demand here is said to be inelastic.

The terms elastic and inelastic demand do not indicate the degree responsiveness and unresponsiveness of the quantity demanded to a change in price. The economists therefore, group various degrees of elasticity of demand into five categories.

1. Perfectly elastic demand,
2. Highly elastic demand,
3. Elastic demand,
4. Less elastic demand or inelastic demand, and
5. Perfectly inelastic demand.

Perfectly elastic demand:

Demand is perfectly elastic when quantity demanded changes by in large amounts

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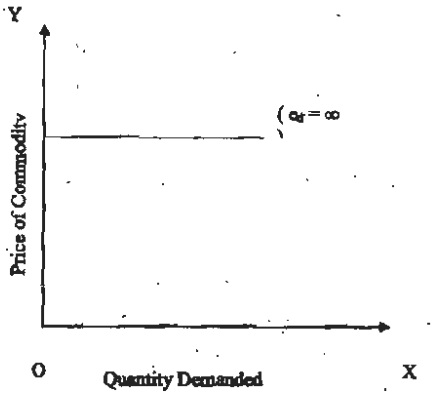
due to small changes in price i.e. consumers are completely inflexible to increases in price. Perfectly elastic demand $e_d = \infty$.

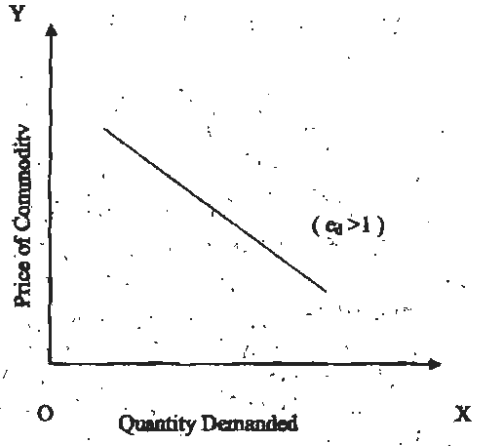
Perfect elasticity implies that individual producers can sell all they want at a ruling price but cannot charge a higher price. If any producer tries to charge even one penny more, no one would buy his product. People would prefer to buy from another producer who sells the good at the prevailing market price. A perfect elastic demand curve is illustrated in figure



Highly elastic demand:

When proportionate change in the demand of a commodity is more than the proportionate change in its price, it is called highly elastic demand. Alternatively, we can say that the elasticity of demand is greater than 1. Demand of luxurious goods is found to be highly elastic. For example, if price of a good change by 10% and it brings a 20% change in demand, the price elasticity is greater than one.

$$e_d = \frac{20\%}{10\%} = 2$$



Elastic demand:

When the quantity demanded of a commodity changes by exactly the same percentage as price, the demand is said to be elastic. For example, a 30% change in price leads to 30% change quantity demand = 30% /30% = 1. One or a one percent change in price causes a response of exactly a one percent change in the quantity demand.

$$e_d = \frac{\%\Delta q}{\%\Delta p} = 1$$

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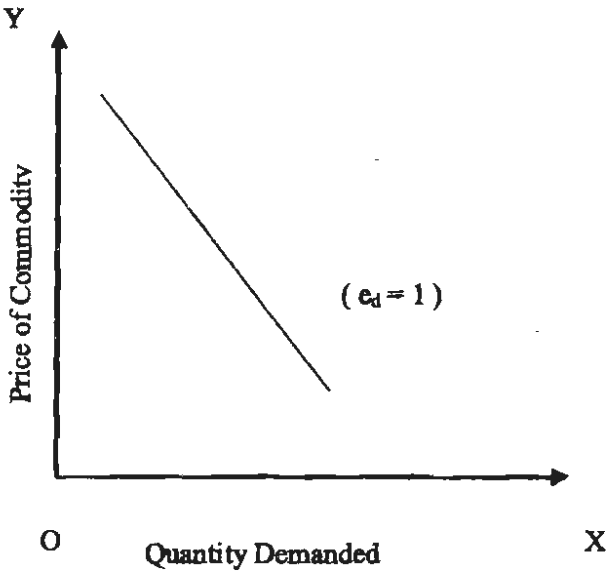
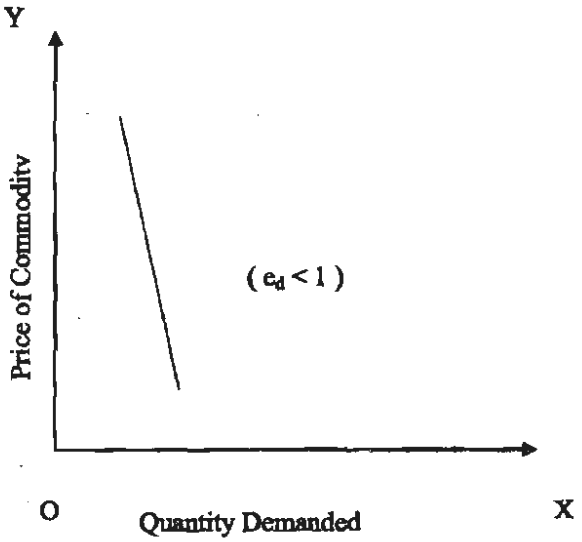


Less Elastic Demand or Inelastic demand:

When proportionate change in the demand of a commodity is less than proportionate change in its price, it is said to be less elastic demand. The elasticity of a good is here less than 1 or less than unity. For example, a 30% change in price leads to 10% change in quantity demanded of a good, then:

$$e_d = \frac{10\%}{30\%} = \frac{1}{3} = 0.33$$



Perfectly inelastic demand:

When the quantity demanded of a good dose not change at all to whatever change in price, the demand is said to be perfectly inelastic or the elasticity of demand is zero. For example, a 30% rise or fall in price leads to no change in the quantity demanded of a good.

$$e_d = \frac{0}{30\%} = 0$$

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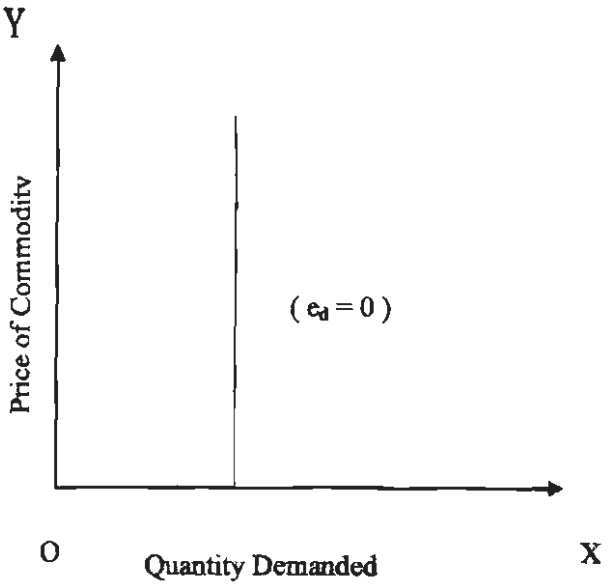


METHODS OF MEASUREMENT OF PRICE ELASTICITY OF DEMAND:

There are three methods of price elasticity of demand:

1 Total Revenue or Total Outlay method

2 Point Method

I. Total Revenue Method (also called Total Expenditure Method):

This method is propounded by Sir Alfred Marshall. According to this method, total revenue (total expenditure) is calculated by multiplying the quantity sold by the selling price of the good. When a firm increase the price of a good, will its total sales revenue increase or decrease? Well, this depends upon the elasticity of demand for the good- For example, if the demand for a good is elastic or (> 1), a rise in the price of a good decreases its total revenue and a decrease in price increases the total revenue of the firm. If the demand for the good is inelastic (< 1), a rise in the price of a good increase total revenue and a fall in price decreases total revenue of the firm. In case the elasticity of demand, for the good is equal to unity, a rise or fall in price of good leaves total revenue unchanged. The total revenue is calculated as follows:

Total Outlay = Quantity sold x Price of Commodity

This method is illustrated as follows:

a) **Elastic Demand ($e_d = 1$):** When total outlay does not changes inspite of change in the price of a commodity, it is called elastic demand.

b) **More than Elastic Demand ($e_d > 1$):** When total outlay of a consumer on the consumption of a particular commodity increases on a fall in its price and decreases on an increase in its price, it is called more than elastic demand.

c) **Less than elastic demand ($e_d < 1$):** When total outlay on the consumption of the commodity increases on an increase in its price and decreases on a decrease in its price, it is said to be less than elastic demand.

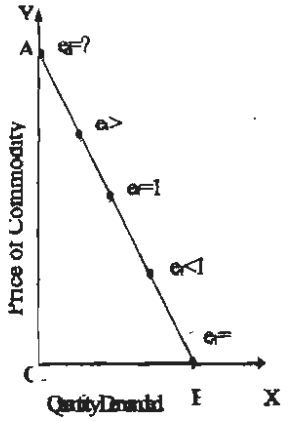
NOTES

These three conditions of elasticity of demand can be explained with the help of single demand schedule:

Price of the commodity (Rs. Per kg.)	I stage $e_d = 1$		II stage $e_d > 1$		III stage $e_d < 1$	
	Quantity demanded (kgs)	Total Expenditure	Quantity demanded (kgs)	Total Expenditure	Quantity demanded (kgs)	Total Expenditure
10	100	1000	100	1000	100	1000
8	125	1000	140	1120	90	720
6	166.67	1000	200	1200	80	480

II. Point Method:

This method is used to calculate price elasticity of demand at a particular point of demand curve. According to this method, a particular point is decided on a straight line demand curve to measure elasticity of demand.



$$\text{Price Elasticity of Demand} = \frac{\text{Lower Segment}}{\text{Upper Segment}}$$

Demand of the lower point of the demand curve is divided by that of the upper part of curve and,

If Lower Segment = Upper Segment, demand will be unitary elastic.

If Lower Segment > Upper Segment, elasticity of demand will be more than unitary.

If Lower Segment < Upper Segment, elasticity of demand will be less than unitary.

The Arc Elasticity of Demand

The **arc elasticity of demand** refers to the relationship between changes in price and the subsequent change in quantity demanded.

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$$\text{Arc Elasticity of Demand} = \frac{\dfrac{Q_1 - Q_0}{\left(\dfrac{Q_1 + Q_0}{2}\right)}}{\dfrac{P_1 - P_0}{\left(\dfrac{P_1 + P_0}{2}\right)}}$$

Q_0 is the initial quantity demanded.

Q_1 is the new quantity demanded.

P_0 is the initial price.

P_1 is the new price.

The arc elasticity formula is used if the change in price is relatively large. It is more accurate a measure of elasticity than simple ''price elasticity".

If the arc or price elasticity of demand is **greater than 1**, demand is said to be **elastic**. The demand curve has a ''flat" appearance.

If the arc or price elasticity of demand is **less than 1**, demand is said to be **inelastic**. The demand curve has a ''steep" appearance.

ELASTICITY MEASURES, MEANING AND NOMENCLATURE

Numerical measure of elasticity	Verbal description	Terminology
Zero	Quantity demanded does not change as price changes.	Perfectly (or completely) inelastic
Greater than Zero, but less than one	Quantity demanded changes by a smaller percentage than does price	Inelastic
One	Quantity demanded changes by exactly the same percentage as does price	Elastic
Greater than one, less than infinity but	Quantity demanded changes by a larger percentage than does price	Highly Elastic
Infinity	Purchasers are prepared to buy all they can obtain at some price and none at all at an even slightly higher price	Perfectly (or infinitely) elastic

USES OF THE CONCEPT OF ELASTICITY OF DEMAND:

1. **Fixation of Price:** The concept of elasticity of demand is useful to the monopolist in formulating a suitable price-policy. He can charge a higher price if the demand for his product is relatively inelastic.

Check Your Progress

4. Explain Arc Elasticity of Demand?
5. What do you mean by Factor Pricing?

NOTES

2. **Formulation of Tax Policy:** The concept of elasticity of demand is useful to the Government in formulating an appropriate tax policy. Taxes cannot be levied heavily on commodities, the demand for which is elastic or else when the seller tries to shift the burden of tax over to the buyers by charging higher prices, the buyers may immediately reduce the demand for the product itself and hence the Government may not be able to raise adequate revenue from taxes on such commodities. Hence necessities are covered under the Tax-net. Demand for necessities is inelastic. Therefore even when price is raised due to the tax the consumers will continue to buy and the Government is assured of some amount of revenue.
3. **Factor-Pricing**: The concept of elasticity of demand is also useful in determining factor- prices. Those factors, the demand for whose services is inelastic command higher rewards in the factor market, e.g. we can well observe that the demand for highly skilled and specialized labour, say air-pilots, is relatively inelastic and hence they command higher wages.
4. **Policy of Devaluation:** The concept of elasticity of demand is to be carefully applied when the Government is planning to undertake the measure of devaluation of currency. Devaluation means reducing the value of our currency in terms of other currency. This measure is resorted to in order to overcome disequilibrium situation in country's Balance of Payments. Through devaluation it is expected that the country's exports will rise and its imports will decline. But if our demand for foreign goods is inelastic, we will continue to import goods from abroad and thus our Balance of Payments will become more unfavorable. Therefore, before the Government takes the decision to devalue the currency it must study our elasticity of demand for foreign goods and foreigner's elasticity of demand for our goods.
5. **Policy of Nationalization:** The concept of elasticity of demand is also useful in formulating the policy of nationalization. The Government tries to take over or nationalize those utility concerns, the demand for whose products and services is inelastic. If such concerns are left in hands of a private sector then the producers would fix exorbitant prices and thereby exploit the consumers. Thus to safeguard the interest of the consumers the Government feels it fit to nationalize such industries.

CASE STUDY:

A study on soft drink consumption across the 32 contiguous states in the India was conducted. . There are 48 elements which are the states and 4 variables which are Cans/Capita/Yr, 6-Pck Price, Income/Capita, and Mean Temp. Out of these variables, we have dependent and independent variables. In this study, Cans/Capita/Yr is the dependent variable, while 6-Pack Price, Income and Mean Temp are the independent variables. During the analysis, the data was manipulated to see how the independent variables affect each other and the dependent variable.

This case study will determine the estimated demand for soft drink consumption, interpret the associated coefficients, and calculate the price elasticity of soft drink demand at the mean.

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SUMMARY:

- Demand is defined as the quantity of a good or service that consumers are willing and able to buy at a given price in a given time period.
- Demand function is the functional relationship between demand & its determinants.
- Utility of a commodity is a want satisfying power of a commodity.
- The law of demand states that, if all other factors remain equal, the higher the price of a good, the less people will demand that good.
- Elasticity of demand is defined as the responsiveness of the quantity demanded of a good to changes in one of the variables on which demands depends or we can say that it the percentage change in quantity demanded divided by the percentage in one of the variables on which demand depends.
- The **arc elasticity of demand** refers to the relationship between changes in price and the subsequent change in quantity demanded.

ANSWERS TO 'CHECK YOUR PROGRESS'

1. Demand is defined as the quantity of a good or service that consumers are willing and able to buy at a given price in a given time period.
2. **According to Samuelson,** "When the price of a good is raised (at the same time that of all other things are held constant) less it will be demanded.....people will buy more at lower price and buy less at higher prices."
3. **Elastic Demand ($e_d = 1$):** When total outlay does not changes inspite of change in the price of a commodity, it is called elastic demand.
4. The **arc elasticity of demand** refers to the relationship between changes in price and the subsequent change in quantity demanded.
5. **Factor-Pricing**: The concept of elasticity of demand is also useful in determining factor- prices. Those factors, the demand for whose services is inelastic command higher rewards in the factor market.

TEST YOURSELF :

Long Questions :

1) Explain the meaning, features and types of demand.
2) Write a short note on Individual and market demand functions.
3) Explain in detail the law of demand.
4) Explain the causes of the application of the Law of Demand.
5) Discuss the determinants of demand.
6) Explain the concept of elasticity of demand. Explain various concepts of Elasticity of Demand.
7) What are the various types of Elasticity of Demands?
8) Explain the methods of measurement of Elasticity of Demand.
9) Explain uses of the concept of Elasticity of Demand.

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Short questions:

1) Define the term Demand.
2) What are the factors affecting Demand?
3) What do you mean by Individual demand curve?
4) Write a short note on Price Elasticity of Demand.
5) Give exceptions of Law of Demand.

FURTHER READING

- Managerial Economics: P.L. Mehta
- Raj Kumar Gupta
- K.N. Devadi

3 DEMAND FORECASTING

NOTES

The Chapter Covers :

- CONCEPTS OF FORECASTING
- DEMAND FORECASTING
- DEMAND FORECAST AND SALES FORECAST
- COMPONENTS OF DEMAND FORECASTING SYSTEM
- CHARACTERISTICS OF DEMAND FORECAST ING
- STEPS OF DEMAND FORECASTING
- OBJECTIVES OF DEMAND FORECAST
- SIMPLE SURVEY METHOD OR QUALITATIVE METHODS
- COMPLEX STATISTICAL METHODS OR QUANTI TATIVE METHODS
- IMPORTANCE OF DEMAND FORECAST
- ESSENTIALS OF GOOD SALES (DEMAND) FORE CASTING SYSTEM
- FACTORS AFFECTING SALES (DEMAND) FORE CASTING
- LIMITATIONS OF SALES (DEMAND) FORECASTING

INTRODUCTION

One of the crucial aspects in which managerial economics differs from pure economic theory lies in the treatment of risk and uncertainty. Traditional economic theory assumes a risk-free world of certainty; but the real world business is full of all sorts of risk and uncertainty. A manager cannot, therefore, afford to ignore risk and uncertainty. The element of risk is associated with future which is indefinite and uncertain. To cope with future risk and uncertainty, the manager needs to predict the future event. The likely future event has to be given form and content in terms of projected course of variables, i.e. forecasting. Thus, business forecasting is an essential ingredient of corporate planning. Such forecasting enables the manager to minimize the element of risk and uncertainty. Demand forecasting is a specific type of business forecasting.

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CONCEPTS OF FORECASTING:

The manager can conceptualize the future in definite terms. If he is concerned with future event- order, intensity and duration, he can predict the future. If he is concerned with the course of future variables - like demand, price or profit, he can project the future. Thus prediction and projection-both have reference to future; in fact, one supplements the other. Suppose, it is predicted that in future there will be inflation. To establish the nature of this event, one needs to consider the projected course of general price index (variable). Exactly in the same way, the predicted event of business recession has to be established with reference to the projected course of variables like sales, inventory etc.

Thus, if a marketing manager fears demand recession, he must establish its basis in terms of trends in sales data; he can estimate such trends through extrapolation of his available sales data. This trend estimation is an exercise in forecasting.

DEMAND FORECASTING:

Demand forecasting entails forecasting and estimating the quantity of a product or service that consumers will purchase in future. It tries to evaluate the magnitude and significance of forces that will affect future operating conditions in an enterprise. Demand forecasting involves use of various formal and informal forecast techniques such as informed guesses, use of historical sales data or current field data gathered from representative markets. Demand forecasting may be used in making pricing decisions, in assessing future capacity requirements, or in making decisions on whether to enter a new market. Thus, demand forecasting is estimation of future demand.

According to Cardiff and Still,

> "Demand forecasting is an estimate of sales during a specified future period based on a proposed marketing plan and a set of particular uncontrollable and competitive forces".

As such, demand forecasting is a projection of firm's expected future demands.

DEMAND FORECAST AND SALES FORECAST

Due to the dynamic and complex nature of marketing phenomenon, demand forecasting has become an important and regular business exercise. It is essential for profit maximization and the survival and expansion of a business. However, before selecting any vendor a retailer should well understand the requirement and the importance of demand forecasting. In management circles, demand forecasting and sales forecasting are used interchangeably. Sales forecasts are first approximations in production and forward planning. These provide a platform upon which plans could be prepared and amendments may be made. According to American Marketing Association, "Sales forecast is an estimate of sales in monetary or physical units for a specified future period under a proposed business plan or programmer or under an assumed set of economic and other environment forces, planning premises, outside business/ antiquate which the forecast or-estimate is made".

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COMPONENTS OF DEMAND FORECASTING SYSTEM

- Market research operations to procure relevant and reliable information about the trends in market.
- A data processing and analyzing system to estimate and evaluate the sales performance in various markets.
- Proper co-ordination of steps (i) and (ii) above.
- Placing the findings before the top management for making final decisions.

CHARACTERISTICS OF DEMAND FORECASTING:

1) Demand forecasting starts with defining the product or the product mix. This will depend on the nature of firm and its corporate image.
2) Once the product is decided the forecast will now describe the buying objectives of the product. The buying objectives will determine the target population for whom the product is being produced.
3) The buying objectives will influence the product design, the cost and ultimately, the price.
4) Depending on the product design, the inputs are drawn. The factors need to be imported or domestically procured. The demand forecast will provide the sources and the costs.
5) To define the market prospects the product is identified with the product cycle. The product may belong to any of the states of product cycle: interdiction, growth, competition, stagnation or decay. The stage to which the product belongs will determine the selection of the product and forecast.
6) Specialized inputs and labour may require efforts in procuring and training.
7) The production and delivery schedule is drawn depending on the market. Seasonal good may have different delivery schedule as compared with a regular good of consumption.
8) The price is decided and the cash flows are estimated. The sales, revenue profits, costs and the rates of return are estimated for period of three to five years.
9) The market is described with respect to risk of competition, Government policy, future prospects. In case of any risk the possible methods of overcoming risk will be indicated.

Such demand forecast will be useful for a firm in taking decisions.

STEPS OF DEMAND FORECASTING

Demand or sales forecasting is a scientific exercise. It has to go through a number of steps. At each step, you have to make critical considerations. Such considerations are categorically listed below:

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1) **Nature of forecast**:

To begin with, you should be clear about the uses of forecast data- how it is related to forward planning and corporate planning by the firm. Depending upon its use, you have to choose the type of forecasts: short-run or long-run, active or passive, conditional or non-conditional etc.

2) **Nature of product**:

The next important consideration is the nature of product for which you are attempting a demand forecast. You have to examine carefully whether the product is consumer goods or producer goods, perishable or durable, final or intermediate demand, new demand or replacement demand type etc. A couple of examples may illustrate the importance of this factor. The demand for intermediate goods like basic chemicals is derived from the final demand for finished goods like detergents. While forecasting the demand for basic chemicals, it becomes essential to analyze the nature of demand for detergents. Promoting sales through advertising or price competition is much less important in the case of intermediate goods compared to final goods. The elasticity of demand for intermediate goods depends on their relative importance in the price of the final product.

3) **Determinants of demand**:

Once you have identified the nature of product for which you are to build a forecast, your next task is to locate clearly the determinants of demand for the product. Depending on the nature of product and nature of forecasts, different determinants will assume different degree of importance in different demand functions. In the preceding unit, you have been exposed to a number of price-income factors or determinants-own price, related price, own income-disposable and discretionary, related income, advertisement, price expectation etc. In addition, it is important to consider socio-psychological determinants, specially demographic, sociological and psychological factors affecting demand. Without considering these factors, long-run demand forecasting is not possible. Such factors are particularly important for long-run active forecasts. The size of population, the age-composition, the location of household unit, the sex-composition-all these exercise influence on demand in. varying degrees. If more babies are born, more will be the demand for toys; if more youngsters marry, more will be the demand for furniture; if more old people survive, more will be the demand for sticks. In the same way buyers' psychology-his need, social status, ego, demonstration effect etc. –also effect demand. While forecasting you cannot neglect these factors.

4) **Analysis of factors & determinants**:

In an analysis of statistical demand function, it is customary to classify the explanatory factors into (a) trend factors, which affect demand over long-run, (b) cyclical factors whose effects on demand are periodic in nature, (c) seasonal factors, which are a little more certain compared to cyclical fac-

tors, because there is some regularly with regard to their occurrence, and (d) random factors which create disturbance because they are erratic in nature; their operation and effects are not very orderly. An analysis of factors is especially important depending upon whether it is the aggregate demand in the economy or the industry's demand or the company's demand or the consumers; demand which is being predicted. Also, for a long-run demand forecast, trend factors are important; but for a short-run demand forecast, cyclical and seasonal factors are important.

5) **Choice of techniques**:

This is a very important step. You have to choose a particular technique from among various techniques of demand forecasting. Subsequently, you will be exposed to all such techniques, statistical or otherwise. You will find that different techniques may be appropriate for forecasting demand for different products depending upon their nature. In some cases, it may be possible to use more than one technique. However, the choice of technique has to be logical and appropriate; for it is a very critical choice. Much of the accuracy and relevance of the forecast data depends accuracy required, reference period of the forecast, complexity of the relationship postulated in the demand function, available time for forecasting exercise, size of cost budget for the forecast etc.

6) **Testing accuracy**:

This is the final step in demand forecasting. There are various methods for testing statistical accuracy in a given forecast. Some of them are simple and inexpensive, others quite complex and difficult. This stating is needed to avoid/reduce the margin of error and thereby improve its validity for practical decision-making purpose. Subsequently you will be exposed briefly to some of these methods and their uses.

OBJECTIVES OF DEMAND FORECAST:

Business managers, depending upon their functional area, need various forecasts. They need to forecast demand, supply, price, profit, costs and returns from investments.

The significance of demand or sales forecasting in the context of business policy decisions can hardly be overemphasized. Sales constitute the primary source of revenue for the corporate unit and reduction for sales gives rise to most of the costs incurred by the firm.

Demand forecasting is essential for a firm because it must plan its output to meet the forecasted demand according to the quantities demanded and the time at which these are demanded. The forecasting demand helps a firm to arrange for the supplies of the necessary inputs without any wastage of materials and time and also helps a firm to diversify its output to stabilize its income overtime. The purpose of demand forecasting differs according to the type of forecasting.

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Short Term Objectives:

It is difficult to define short run for a firm because its duration may differ according to the nature of the commodity. For a highly sophisticated automatic plant 3 months time may be considered as short run, while for another plant duration may extend to 6 months or one year. Time duration may be set for demand forecasting depending upon how frequent the fluctuations in demand are, short- term forecasting can be undertaken by affirm for the following purpose;

a) **Drafting of Production Policy:**

Demand forecasts facilitate in drafting appropriate production policy so that there may not be any space between future demand and supply of a product. This can in addition ensure:

- **Routine Supply of Materials:**

  Demand forecasting assists in figuring out the preferred volume of production. The essential prerequisite of raw materials in future can be calculated on the basis of such forecasts. This guarantees regular and continuous supply of the materials in addition to managing the amount of supply at the economic level.

- **Best Possible Use of Machines:**

  Demand forecasting in addition expedites cutting down inactive capacity because only the necessary amount of machines and equipments are set up to meet future demands.

- **Regular Availability of Labour:**

  As soon as demand forecasts are made, supplies of the necessary amount of skilled and unskilled workers can be organized well beforehand to meet the future production plans.

b) **Drafting of Price Policy:**

Demand forecasts facilitate the management to prepare a few suitable pricing systems, so that the level of price does not rise and fall to a great extent during depression or inflation.

c) **Appropriate Management of Sales:**

Demand forecasts are made area wise and after that the sales targets for different regions are set in view of that. This abets the calculation of sales performances.

d) **Organizing Funds:**

On the basis of demand forecast, an individual can find out the monetary requirements of the organization in order to bring about the desired output. This can make it possible to cut down on the expenditure of acquiring funds.

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Long Term Goals:

The concept of demand forecasting is more relevant to the long-run that the short-run. It is comparatively easy to forecast the immediate future than to forecast the distant future. Fluctuations of a larger magnitude may take place in the distant future. In fast developing economy the duration may go up to 5 or 10 years, while in stagnant economy it may go up to 20 years. More over the time duration also depends upon the nature of the product for which demand forecasting is to be made. The purposes are;

a) **To settle on the production capacity:**

Long term decisions are entwined with capacity variations by adding or discarding capacity in the form of capital assets - manufacturing plants, new technology implementation etc. Size of the organization should such that output matches with the sales requirements. Organizations that are extremely small or large in size might not be in the financial interest of the company. Inadequate capability can hasten declining delivery performance, needless rise in work-in-process and disturb sales personnel and those in the production unit. Nevertheless, surplus capacity can be expensive and pointless. The incompetence to appropriately deal with capacity can be an obstacle to attaining the best possible performance. By examining the demand pattern for the product as well as the forecasts for the future, the company can prepare for a company's output of the desired capacity.

b) **Labour Requirements:**

Spending on labour is one of the most vital elements of cost of production. Dependable and correct demand forecasts can facilitate the management to evaluate suitable labour requirements. This can ensure finest labour supply and uninterrupted production procedures.

c) **Production Planning**:

Long term production planning can aid the management in organizing long term finances on practical terms and conditions.

The study of long term sales is accorded greater importance as compared with short-term sales. Long term sales forecast facilitates the management to take a few policy decisions of huge importance and any mistake carried out in this could be extremely different or costly to be corrected. Therefore, the complete success of an organization usually is contingent upon the quality and authenticity of sales forecasting methods.

Check Your Progress

1. What is demand forecasting?
2. How demand forecast is significant for government?

VARIOUS METHODS OF ESTIMATING OF DEMAND FORECASTING:

Broadly speaking, there are two approaches to demand forecasting- one is to obtain information about the likely purchase behavior of the buyer through collecting expert's opinion or by conducting interviews with consumers, the other is to use past experience as a guide through a set of statistical techniques. Both these methods rely on varying degrees of judgment. The first method is usually found suitable for short-

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term forecasting, the latter for long-term forecasting. There are specific techniques which fall under each of these broad methods.

SIMPLE SURVEY METHOD OR QUALITATIVE METHODS:

For forecasting the demand for existing product, such survey methods are often employed. In this set of methods, we may undertake the following exercise.

1) **Experts Opinion Poll**:

In this method, the experts on the particular product whose demand is under study are requested to give their 'opinion' or 'feel' about the product. These experts, dealing in the same or similar product, are able to predict the likely sales of a given product in future periods under different conditions based on their experience. If the number of such experts is large and their experience-based reactions are different, then an average-simple or weighted – is found to lead to unique forecasts. Sometimes this method is also called the 'hunch method' but it replaces analysis by opinions and it can thus turn out to be highly subjective in nature.

2) **Reasoned Opinion-Delphi Technique**:

This is a variant of the opinion poll method. Here is an attempt to arrive at a consensus in an uncertain area by questioning a group of experts repeatedly until the responses appear to converge along a single line. The participants are supplied with responses to previous questions (including seasonings from others in the group by a coordinator or a leader or operator of some sort). Such feedback may result in an expert revising his earlier opinion. This may lead to a narrowing down of the divergent views (of the experts) expressed earlier. The Delphi Techniques, followed by the Greeks earlier, thus generates "reasoned opinion" in place of "unstructured opinion"; but this is still a poor proxy for market behavior of economic variables.

3) **Consumers Survey- Complete Enumeration Method**:

Under this, the forecaster undertakes a complete survey of all consumers whose demand he intends to forecast, once this information is collected, the sales forecasts are obtained by simply adding the probable demands of all consumers. The principle merit of this method is that the forecaster does not introduce any bias or value judgment of his own. He simply records the data and aggregates. But it is a very tedious and cumbersome process; it is not feasible where a large number of consumers are involved. Moreover if the data are wrongly recorded, this method will be totally useless.

4) **Consumer Survey-Sample Survey Method**:

Under this method, the forecaster selects a few consuming units out of the relevant population and then collects data on their probable demands for the product during the forecast period. The total demand of sample units is finally blown up to generate the total demand forecast. Compared to the former survey, this method is less tedious and less costly, and subject to less

data error; but the choice of sample is very critical. If the sample is properly chosen, then it will yield dependable results; otherwise there may be sampling error. The sampling error can decrease with every increase in sample size.

5) **End-user Method of Consumers Survey**:

Under this method, the sales of a product are projected through a survey of its end-users. A product is used for final consumption or as an intermediate product in the production of other goods in the domestic market, or it may be exported as well as imported. The demands for final consumption and exports net of imports are estimated through some other forecasting method, and its demand for intermediate use is estimated through a survey of its user industries.

COMPLEX STATISTICAL METHODS OR QUANTITATIVE METHODS:

We shall now move from simple to complex set of methods of demand forecasting. Such methods are taken usually from statistics. As such, you may be quite familiar with some the statistical tools and techniques, as a part of quantitative methods for business decisions.

1) **Time series analysis or trend method**:

Under this method, the time series data on the under forecast are used to fit a trend line or curve either graphically or through statistical method of Least Squares. The trend line is worked out by fitting a trend equation to time series data with the aid of an estimation method. The trend equation could take either a linear or any kind of non-linear form. The trend method outlined above often yields a dependable forecast. The advantage in this method is that it does not require the formal knowledge of economic theory and the market; it only needs the time series data. The only limitation in this method is that it assumes that the past is repeated in future. Also, it is an appropriate method for long-run forecasts, but inappropriate for short-run forecasts. Sometimes the time series analysis may not reveal a significant trend of any kind. In that case, the moving average method or exponentially weighted moving average method is used to smoothen the series.

2) **Barometric Techniques or Lead-Lag indicators method**:

This consists in discovering a set of series of some variables which exhibit a close association in their movement over a period of time.

For example, it shows the movement of agricultural income (AY series) and the sale of tractors (ST series). The movement of AY is similar to that of ST, but the movement in ST takes place after a year's time lag compared to the movement in AY. Thus if one knows the direction of the movement in agriculture income (AY), one can predict the direction of movement of tractors' sale (ST) for the next year. Thus agricultural income (AY) may be used as a barometer (a leading indicator) to help the short-term forecast for

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the sale of tractors.

Generally, this barometric method has been used in some of the developed countries for predicting business cycles situation. For this purpose, some countries construct what are known as 'diffusion indices' by combining the movement of a number of leading series in the economy so that turning points in business activity could be discovered well in advance. Some of the limitations of this method may be noted however. The leading indicator method does not tell you anything about the magnitude of the change that can be expected in the lagging series, but only the direction of change. Also, the lead period itself may change overtime. Through our estimation we may find out the best-fitted lag period on the past data, but the same may not be true for the future. Finally, it may not be always possible to find out the leading, lagging or coincident indicators of the variable for which a demand forecast is being attempted.

3) **Correlation and Regression**:

These involve the use of econometric methods to determine the nature and degree of association between/among a set of variables. Econometrics, you may recall, is the use of economic theory, statistical analysis and mathematical functions to determine the relationship between a dependent variable (say, sales) and one or more independent variables (like price, income, advertisement etc.). The relationship may be expressed in the form of a demand function, as we have seen earlier. Such relationships, based on past data can be used for forecasting. The analysis can be carried with varying degrees of complexity. Here we shall not get into the methods of finding out 'correlation coefficient' or 'regression equation'; you must have covered those statistical techniques as a part of quantitative methods. Similarly, we shall not go into the question of economic theory. We shall concentrate simply on the use of these econometric techniques in forecasting. We are on the realm of multiple regressions and multiple correlations. The form of the equation may be:

$$D_x = a + b_1 A + b_2 P_x + b_3 P_y$$

You know that the regression coefficients b_1, b_2, b_3 and b_4 are the components of relevant elasticity of demand. For example, b_1 is a component of price elasticity of demand. They reflect the direction as well as proportion of change in demand for x as a result of a change in any of its explanatory variables. For example, $b_2 < 0$ suggest that D_x and P_x are inversely related; $b_4 > 0$ suggest that x and y are substitutes; $b_3 > 0$ suggest that x is a normal commodity with positive income-effect. Given the estimated value of b_1, you may forecast the expected sales (D_x), if you know the future values of explanatory variables like own price (P_x), related price (P_y), income (B) and advertisement (A). Lastly, you may also recall that the statistics R2 (Coefficient of determination) gives the measure of goodness of fit. The closer it is to unity, the better is the fit, and that way you get a more reliable

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forecast. The principle advantage of this method is that it is prescriptive as well descriptive. That is, besides generating demand forecast, it explains why the demand is what it is. In other words, this technique has got both explanatory and predictive value. The regression method is neither mechanistic like the trend method nor subjective like the opinion poll method. In this method of forecasting, you may use not only time-series data but also cross section data. The only precaution you need to take is that data analysis should be based on the logic of economic theory.

4) **Simultaneous Equations Method**:

Here is a very sophisticated method of forecasting. It is also known as the 'complete system approach' or 'econometric model building'. In your earlier units, we have made reference to such econometric models. Presently we do not intend to get into the details of this method because it is a subject by itself. Moreover, this method is normally used in macro-level forecasting for the economy as a whole; in this course, our focus is limited to micro elements only. Of course, you, as corporate managers, should know the basic elements in such an approach. The method is indeed very complicated. However, in the days of computer, when package programmes are available, this method can be used easily to derive meaningful forecasts. The principle advantage in this method is that the forecaster needs to estimate the future values of only the exogenous variables unlike the regression method where he has to predict the future values of all, endogenous and exogenous variables affecting the variable under forecast. The values of exogenous variables are easier to predict than those of the endogenous variables. However, such econometric models have limitations, similar to that of regression method.

IMPORTANCE OF DEMAND FORECAST:

1) **Management Decisions:**

An effective demand forecast facilitates the management to take appropriate steps in factors that are pertinent to decision making such as plant capacity, raw-material requisites, space and building requirements and availability of labour and capital. Manufacturing schedules can be drafted in compliance with the demand requisites; in this manner cutting down on the inventory, production and other related costs.

2) **Evaluation:**

Demand forecasting furthermore smoothes the process of evaluating the efficiency of the sales department.

3) **Quality and Quantity Controls:**

Demand forecasting is an essential and valuable instrument in the control of the management of an organization to provide finished goods of correct quality and quantity at the correct time with the least amount of expenditure.

Check Your Progress

3. What is Delphi Technique?
4. What are the components of Demand forecasting system?
5. What are two approaches of Demand Forecasting?

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4) **Financial Estimates:**

As per the sales level as well as production functions, the financial requirements of an organization can be calculated using various techniques of demand forecasting. In addition, it needs a little time to acquire revenue on practical terms. Sales forecasts will, as a result, make it possible for arranging adequate resources on practical terms and in advance as well.

5) **Avoiding Surplus and Inadequate Production:**

Demand forecasting is necessary for the old and new organizations. It is somewhat essential if an organization is engaged in large scale production of goods and the development period is extremely time-consuming in the course of production. In such situations, an estimate regarding the future demand is essential to avoid inadequate and surplus production.

6) **Recommendations for the future:**

Demand forecast for a specific commodity furthermore provides recommendations for demand forecast of associated industries. E.g. the demand forecast for the vehicle industry aids the tire industry in calculating the demand for two wheelers, three wheelers and four wheelers.

7) **Significance for the government:**

At the macro-level, demand forecasting is valuable to the government as it aids in determining targets of imports as well as exports for various products and preparing for the international business.

ESSENTIALS OF GOOD SALES (DEMAND) FORECASTING SYSTEM:

A good sales forecasting system must possess the following qualities:

1) **Simplicity:**

The method followed for preparing sales forecasts should be simple. If the method followed for this purpose is complicated or is of the technical nature, the person responsible for preparing sales forecast will not take interest in his work and, as a result of it, sales forecast may be wrong. Sometimes the information required for sales forecasting are to be collected from outside persons also. If the method of sales forecasting is complicated, these outside persons will not co-operate in providing such information.

2) **Accuracy:**

Sales forecasts are the base of marketing planning. Therefore, sales forecasts should be accurate and reliable also. If the sales forecasts are accurate and reliable, it will help in preparing effective marketing plans and programmes.

3) **Availability:**

The objects and scope of sales forecasting should be determined keeping in view the availability of required data. If the required data are not easily available, sales forecasts will not be prepared on time.

4) **Stability:**

Sales forecasts should be prepared in the manner that there should be no hope of changes in near future, or the possibility of such changes should minimum so that the marketing plan prepared on the basis of these data may be relied upon.

5) **Utility:**

Sales forecasts should be prepared in the manner that the management may understand the method of sales forecasting and the management may have a faith in the techniques of the sales forecasting.

6) **Economy:** The method followed for preparing sales forecasts should be economical also. There should be minimum involvement of time and labour.

FACTORS AFFECTING SALES (DEMAND) FORECASTING:

Following are the factors affecting sales forecasting:

1) **General Business Conditions:**

Marketing manager must study the general business conditions very carefully while preparing sales forecasts. General business conditions include – General economic conditions of the country, Population, Distribution of income and wealth in the country, General traditions and customs, Fashion, etc.

2) **Conditions within the Industry:**

Every business enterprise is only a unit of a particular industry. Sale of the business enterprise is only a part of the total sales of that industry. Therefore, while preparing sales forecasts for a particular business enterprise, it becomes necessary to study the fluctuations taking place in the demand of the whole industry because the demand of a particular business enterprise is likely to fluctuate according to the demand of the industry.

3) **Internal factors of the enterprise:**

Internal factors of the enterprise also have an important role to play in the process of sales forecasting of an enterprise. These are the factors which may be controlled by the marketing manager to a large extent. These factors include the following – Plant capacity of the enterprise, Quality of the product, Price of the product, Advertisement and distribution policies of the enterprise, etc.

4) **Factors affecting Export Trade:**

If a business enterprise is engaged in export trade also, it should consider the factors affecting export trade also while preparing its sales forecasts. These factors include the following – Import and export controls, Terms and conditions of export, International policy, etc.

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5) **Market Behaviour:**

An important factor to be considered by marketing manager while preparing sales forecasts for his enterprise is the market behaviour. It implies that the marketing manager should study whether there is any important change in the pattern of demand for the product for which sales forecasts are being made. For this purpose, the marketing manager should study the law of demand and the factors affecting the demand of his product.

LIMITATIONS OF SALES (DEMAND) FORECASTING:

Some important limitations of sales forecasting are as follows:

1) **Lack of efficient and experienced forecasters:**

Success of sales forecast depends to a large extent upon the ability and experience of sales forecasters. Unfortunate fact is that there is a lack of efficient and experienced forecasters. If the forecasters are inefficient and unexperienced, sales forecasts prepared by them may be wrong.

2) **Lack of Sales History:**

Sales forecasts are generally based upon past experience and sales data of the product during past years. In case of new product, the task of sales forecasting becomes very different because in this case, past data are not available. Therefore, it becomes very difficult to forecast the demand of a new product.

3) **Change in Consumer's needs, Fashion and Style etc:**

Demand of the product depends to a large extent upon the needs, tastes, fashion and style etc, of consumers but all of these factors keep on changing. Thus, it becomes very difficult to prepare sales forecasts for a product.

4) **Psychology of Consumers:**

Demand of a product depends to some extent upon the psychology of consumers but also it is very difficult to study the psychology of consumers correctly. A consumer is a rational human being. It is not necessary for a consumer to tell in advance the things that he would like to purchase. Moreover, the psychology of consumer keeps on changing from time to time and from product to product. Therefore, the psychology of consumer is an important limitation of sales forecasting.

CASE STUDY:

Demand Forecasting

An organization was not able to forecast its demand accurately. It created a huge amount of stress on the leadership and the operations teams. The client leader was so upset with the situation, that he demanded to meet the president of the service providing organization to come and report to him and explain why there was a goof

up in upholding the service levels contractually agreed and what was being done to fix the situation.

Usually we think that the president of a company is not likely to experience any unkind situation. But this is untrue, any president is likely to be questioned by the different stakeholders, if the contractual obligations, legal obligations, environmental obligations are not met. A big team of experts was deployed to resolve the situation in double quick time. The stress levels in the system were reduced and the process was brought under control. But by the time the stress levels were reduced in the system, one of the employees of the service provider organization suffered a massive heart attack.

Case study Questions

1. How important is demand forecasting from a business profitability perspective?

2. How important is demand forecasting from an overall lower stress level in the organization perspective?

SUMMARY:

- Demand Forecasting entails forecasting and estimating the quantity of a product or service that consumers will purchase in future.
- Consideration of Demand Forecasting process: Nature of Forecast, Nature of Product, Determinants of demand, Analysis of factors & determinants, Choice of techniques, testing accuracy.
- Methods of estimating Demand Forecasting: Simple Survey method or Qualitative method, Complex statistical methods or Quantitative methods.
- Essential of Good sales forecasting system: Simplicity, Accuracy, Availability, Stability, Utility, Economy.

ANSWERS TO 'CHECK YOUR PROGRESS'

1. "Demand forecasting is an estimate of sales during a specified future period based on a proposed marketing plan and a set of particular uncontrollable and competitive forces".

2. **Significance for the government:**

   At the macro-level, demand forecasting is valuable to the government as it aids in determining targets of imports as well as exports for various products and preparing for the international business.

3. This is a variant of the opinion poll method. Here is an attempt to arrive at a consensus in an uncertain area by questioning a group of experts repeatedly until the responses appear to converge along a single line.

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4. COMPONENTS OF DEMAND FORECASTING SYSTEM

- Market research operations to procure relevant and reliable information about the trends in market.
- A data processing and analyzing system to estimate and evaluate the sales performance in various markets.
- Proper co-ordination of steps (i) and (ii) above.
- Placing the findings before the top management for making final decisions.

5. two approaches to demand forecasting- one is to obtain information about the likely purchase behavior of the buyer through collecting expert's opinion or by conducting interviews with consumers, the other is to use past experience as a guide through a set of statistical techniques.

TEST YOURSELF :

Long Question

1) Explain the concept of Demand Forecasting.
2) Discuss various steps of Demand Forecasting.
3) What are objectives of Demand Forecast?
4) What are the essentials of a good demand forecasting system?
5) Briefly describe various methods of estimating of Demand Forecasting.
6) What is the importance and limitations of Demand Forecasting?

Short Questions:

1) Define Demand Forecasting.
2) What are the components of Demand Forecasting system?
3) State characteristics of Demand Forecasting.
4) Explain various factors affecting Demand Forecasting.

FURTHER READING

- Managerial Economics: P.L.Mehta
- Raj Kumar Gupta
- K.N. Devadi

4 UTILITY ANALYSIS

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The Chapter Covers :

- CONCEPT OF UTILITY:
- MARGINAL UTILITY:
- TYPES OF MARGINAL UTILITY:
- UTILITY ANALYSIS
- LAW OF EQUI-MARGINAL UTILITY (EMU) OR LAW OF SUBSTITUTION
- ASSUMPTIONS OF THE LAW OF EQUI- MARGINAL UTILITY:
- PRACTICAL IMPORTANCE OF LAW OF EMU:
- LAW OF DIMINISHING MARGINAL UTILITY:
- IMPORTANCE OF THE LAW OF DIMINISHING MARGINAL UTILITY:
- CONSUMER SURPLUS
- ASSUMPTIONS OF CONSUMER'S SURPLUS:
- CRITICISM OF THE CONCEPT OF CONSUMER'S SURPLUS:
- IMPORTANCE OF THE CONCEPT OF CONSUMER'S SURPLUS
- INDIFFERENCE CURVE ANALYSIS
- ASSUMPTIONS UNDERLYING INDIFFERENCE CURVE APPROACH:
- INDIFFERENCE CURVE MAP:
- PROPERTIES OF INDIFFERENCE CURVES:
- CHANGES IN BUDGET LINE:
- CONSUMER EQUILIBRIUM:

INTRODUCTION

Utility is the want satisfying power of a commodity. It is a subjective entity and varies from person to person. Total utility is the aggregate sum of satisfaction or benefit that an individual gains from consuming a given amount of goods or services in an economy. The amount of a person's total utility corresponds to the person's level of consumption. Usually, the more the person consumes, the larger his or her total utility will be.

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Utility is a subjective phenomenon because the degree of satisfaction derived from the use of a particular commodity differs from person to person and time to time. For example: A cup of tea provides great satisfaction to one person, very little satisfaction to another person and no satisfaction at all to the third person. The term 'utility' has been defined as under:

According to Prof. Waugh, "For an economist, utility means the capability to satisfy wants."

According to Prof. Edward, "In economics, utility means the satisfaction or pleasure or benefit derived by a person out of consumption of wealth or assets."

Thus, it may be concluded that utility means the capability of goods and services to satisfy the wants of a person.

MARGINAL UTILITY:

This theory is formulated by Alfred Marshall, a British economist, seeks to explain how a consumer spends his income on different goods and services so as to attain maximum satisfaction.

Marginal utility is the extra satisfaction derived from consuming an additional unit of a product or service. In other words, marginal utility is the extra satisfaction gained from an extra unit of good. It is an important concept in economic theory, on which the law of diminishing marginal utility is based.

According to Prof. K.E. Boulding, "Marginal utility of any quantity of a commodity is the increase in total utility which results from a unit increase in consumption."

According to Prof. Ely, "Marginal utility is the utility of marginal unit of stock of a commodity available with a person for him."

According to Richard G. Lipsey and Colin Harbury, "marginal utility is the change in total utility by the consumption of an additional unit of commodity."

Thus, it may be concluded that marginal utility is the utility derived from the consumption of an additional unit of a particular commodity.

Marginal utility is specified as:

$$\text{Marginal utility} = \frac{\text{Change in total utility}}{\text{Change in quantity}}$$

TYPES OF MARGINAL UTILITY:

According to T.R. Jain and O.P. Khanna in the book "Business Economics (For BIM)," marginal utility can be positive, negative or zero.

These three forms of utility can be explained with the help of an example. Suppose a person can consume 6 chapaties at a time and he gets utility as under:

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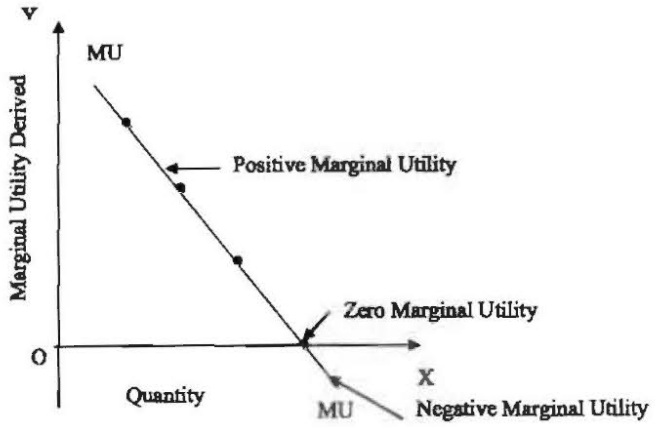
Number of Chapaties	Marginal Utility derived	Form of Marginal Utility	Total Utility
1	16		16
2	12	Positive Marginal Utility	28
3	8		36
4	4		40
5	0	Zero Marginal Utility	40
6	-4	Negative Marginal Utility	36

Concept and forms of marginal utility can be explained with the help of following diagram:



a) **Positive marginal utility:** Positive marginal utility is when the consumption of every addition unit of item increases the total utility derived from it. In other words, so long as total utility goes on increasing, marginal utility is said to be positive. It implies that every additional unit of commodity is providing additional utility.

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b) **Zero marginal utility:** When additional unit of consumption does not provide any additional utility, the marginal utility is said to be zero. This is the saturation point, or the point at which the total utility of an item is maximum. It is also called as the point of maximum satisfaction.

c) **Negative marginal utility:** When an additional unit of consumption provides no satisfaction to consumer, rather provides dissatisfaction it is called negative marginal utility. At this stage, total utility starts to decline. No consumer likes to face this situation.

UTILITY ANALYSIS –

The key principle of utility analysis is the law of diminishing marginal utility, which offers an explanation for the law of demand and the negative slope of the demand curve.

Utility analysis, a subset of consumer demand theory, provides insight into an understanding of market demand and forms a cornerstone of modern microeconomics. In particular, this analysis investigates consumer behaviour, especially market purchases, is based on the satisfaction of wants and needs (that is, utility) generated from the consumption of a good.

The primary focus of utility analysis is on the satisfaction of wants and needs obtained by the consumption of goods. This is technically termed utility. The utility generated from consumption affects the decision to purchase and consume a good.

When used in the analysis of consumer behavior, utility assumes a very precise meaning, which differs from the everyday use of the term. In common use, the term utility means "useful." For example, a "utility" knife is one with many uses, something that is handy to have around. In baseball, a "utility" player can perform quite well at several different positions and is thus useful to have on the team. Moreover, a public "utility" is a company that supplies a useful product, such as electricity, natural gas, or trash collection.

In contrast, the specific economic use of the term utility in the study of consumer behavior means the satisfaction of wants and needs obtained from the consumption of a commodity. The good consumed need not be "useful" in the everyday sense of the term. It only needs to provide satisfaction.

LAW OF EQUI-MARGINAL UTILITY (EMU) OR LAW OF SUBSTITUTION

This law of Equi-marginal Utility is another fundamental principle of Economics. It is also known as law of substitution or law of Maximum satisfaction. We have already seen that human wants are unlimited whereas the means to satisfy these wants are strictly limited. Every rational person allocates his limited resources in such a way that he may get maximum satisfaction. This law has been defined as under:

According to Prof. J. R. Hicks, "The utility will be maximized, when the marginal unit of expenditure in each direction brings in the same increments of utility."

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Thus, the law of equi-marginal utility explains that wants of every consumer are unlimited, but the resources available with him to satisfy these wants are limited, that too having alternative uses. Therefore, he spends these resources in a manner that he may get maximum satisfaction.

It therefore becomes necessary to pick up the most urgent wants that can be satisfied with the money that a consumer has. In order to get maximum satisfaction out of the funds (money) we have, we carefully weigh the satisfaction obtained from each rupee that we spend. If we find that a rupee spend in one direction has greater utility than in another, we shall go non spending money, on the former (first) commodity, till the satisfaction derived from the last rupee spent in the two cases is equal. In other words, we substitute some units of commodity of greater utility for some units of the commodity of less utility. The results of this substitution will be the MU of the former will fall and that of the latter will rise, till the two marginal utilities are equalized. That is why this law is called the laws of substitution or equi-marginal utility.

This law has been illustrated with the help of table given below.

Units	Marginal Utility of oranges	Marginal Utility of apples
1	10	8
2	8	6
3	6	4
4	4	2
5	2	0
6	0	2
7	2	4
8	4	6

Suppose apples and oranges are the commodities to be purchased suppose we have go seven rupees to spend. Let us spend three rupees on oranges and four rupees on apples. The utility of 3rd unit of oranges is 6 and that of the 4th unit of apples is 2. As the MU of oranges is higher, we should buy more of oranges and less of apples. Let us substitute one orange for one apple so that we buy four oranges and three apples. Now the MU of both oranges and apples is the same i.e. 4. This arrangement yields maximum satisfaction. Thus total utility of 4 oranges would be 10+8+6+4=28 and of three apples 8+6+4=18 which gives a total utility of 46. Thus, it can be concluded that we obtain maximum satisfaction when we equalize marginal utilities by substituting some unit of the more useful for the less useful commodity.

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ASSUMPTIONS OF THE LAW OF EQUI- MARGINAL UTILITY:

1. **Rational Behaviour of Consumer:** This law assumes that the consumer is the rational man and spends his income rationally.
2. **Constant Marginal Utility of Money:** It assumes that there is no change in the marginal utility of money even if the income of a consumer changes.
3. **Unlimited resources:** When the resources are unlimited this law will be meaningless.
4. **Constant purchasing Power of money:** The law assumes that there is no change in the purchasing power of money.
5. **Measurement of Utility:** This law is based on the assumption that utility is an objective concept and it can be measured in terms of money.
6. **Hold of custom and fashion:** It the purchase is strongly influence by customer and fashion he will not obtain maximum satisfaction.

PRACTICAL IMPORTANCE OF LAW OF EMU:

1. **Consumption:** A wise consumer acts on this law while arranging his expenditure and obtains maximum satisfaction. Law of equal-marginal utility explains how a consumer spends his limited resources on his consumption. This law states that every consumer allocates his resources in the manner that he may get maximum satisfaction.
2. **Production:** To obtain maximum net profit, every producer must substitute one factor of producing to another so as to have most economical combination. He will continue to replace costly resources by cheaper resources until the marginal productivity of both the resources is equal.
3. **Exchange:** Exchange implies substitution of one thing to another and hence this law is important. A consumer exchanges commodity having more utility for him with the commodity having less utility till the marginal utility of both the commodities is equal.
4. **Distribution:** Rewards of various factors of production is also determined with the help of this principle.
5. **Public finance:** The Govt. is also guided by this law in public expenditure. The Govt. can expand its revenue (money) in such a way that it will secure maximum welfare of the people.

Thus, it may be concluded that law of equi-marginal utility has great importance. **According to Marshall**, "The application of the principle of substitution extends over almost every field of economic enquiry."

LAW OF DIMINISHING MARGINAL UTILITY:

According to Walter J. Wessels in the book "Economics," the law of diminishing marginal utility states that marginal utility decreases as more units of a product or a service are consumed. This can be explained with the help of an example. Consuming a single glass of water on a hot summer day will satisfy a person's thirst, and he will derive utility from it. A second glass of water will not hold the same significance as the first but it will still be valued. The third and fourth glasses will not bring additional utility: instead, the total utility derived from their consumption will be less than that derived from the consumption of the first glass. This example reflects the

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economic law of diminishing marginal utility, which states that the more of a good consumed, the smaller the increase in utility derived from it will be. The marginal utility decreases with each additional glass of water consumed until the drinker experiences negative utility, or disutility.

Although total utility usually increases as more of a good is consumed, marginal utility usually decreases with each additional increase in the consumption of a good. This decrease demonstrates the law of diminishing marginal utility. Because there is a certain threshold of satisfaction, the consumer will no longer receive the same pleasure from consumption once that threshold is crossed. In other words, total utility will increase at a slower pace as an individual increases the quantity consumed.

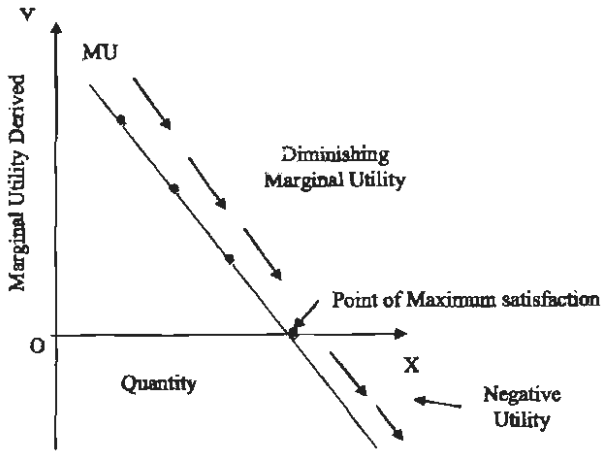
Thus, the law of diminishing marginal utility states that marginal utility or the extra utility obtained from consuming a good, decreases as the quantity consumed increases. In essence, each additional good consumed is less satisfying than the previous one. This law is particularly important for insight into market demand and the law of demand.

Dr. Marshall states this law as follow: The additional benefit which a person derives from a given increase of his stock of anything diminishes with the growth of the stock. In other words the law of DMU simply states that other things being equal; the marginal utility derived from successive units of a given commodity goes on decreasing. Hence the more we have of a thing; the less we want of it, because every successive unit gives less and less satisfaction.

The law is explained with the help of following example

Units of commodity No. Of mangoes	Total Utility (TU)	Marginal Utility (MU)
1	8	8
2	14	6
3	16	2
4	16	0
5	14	(-) 2

It will be better to know some terms for understanding the law and they are.



Law of Diminishing marginal Utility

Check Your Progress

1. Explain Marginal Utility?
2. What is consumer surplus?
3. What are indifference curves?

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ASSUMPTIONS:

The assumptions of the law of DMU are:

1. All the units of the given commodity are homogenous i.e. identical in size shape, quality, quantity etc.
2. The units of consumption are of reasonable size. The consumption is normal.
3. The consumption is continuous. There is no unduly long time interval between the consumption of the successive units.
4. The law assumes that only one type of commodity is used for consumption at a time.
5. Though it is psychological concept, the law assumes that the utility can be measured cardinally i.e. it can be expressed numerically.
6. The consumer is rational human being and he aims at maximum of satisfaction.

EXCEPTIONS:

The exceptions to the law of DMU are as follows:

1. **Hobbies:** In case of certain hobbies like stamp collection or old coins, every addition unit gives more pleasure. Marginal Utility goes on increasing with the acquisition of every unit.
2. **Drunkards:** this law does not hold well on the consumption of liquor. Every additional dose of liquor will increase its marginal utility for the drunkard.
3. **Miser:** In the case of miser, greed increases with the acquisition of every additional unit of money.
4. **Reading:** Reading of more books gives more knowledge and in turn greater satisfactions.

IMPORTANCE OF THE LAW OF DIMINISHING MARGINAL UTILITY:

1. **Basic of economic law and concepts:**

   This law of DMU forms the basis of law of demand, law of Equi-marginal utility, elasticity of demand etc.
2. **Public finance:**

   The Govt. can impose and justify progressive income tax on the ground of this law, as the income increases, the MU of income diminishes.
3. **Businessmen:**

   A businessman or producer can increase the sale of his product by fixing a lower price. Since consumers tend to buy more to equate MU with price, a producer can expect a rise in sale.
4. **A base of Diversity in Production:**

   Law of diminishing marginal utility is the base of diversity in production. In the absence of this law, consumers would have been consuming a single commodity.

CONSUMER SURPLUS

The concept of consumer's surplus was evolved by Alfred Marshall. This concept occupies an important place not only in economic theory but also in economic policies of Government and decision making of monopolists.

Consumer surplus measures the welfare that consumers derive from their consumption of goods and services, or the benefits they derive from the exchange of goods. It has been seen that consumers generally are ready to pay more for the goods for greater satisfaction than they actually pay for them. This extra satisfaction which consumers get from their purchase of goods is called by Marshall as consumer surplus.

Consumer surplus is the difference between what consumers is willing to pay for a good or service (indicated by the position of the demand curve) and what they

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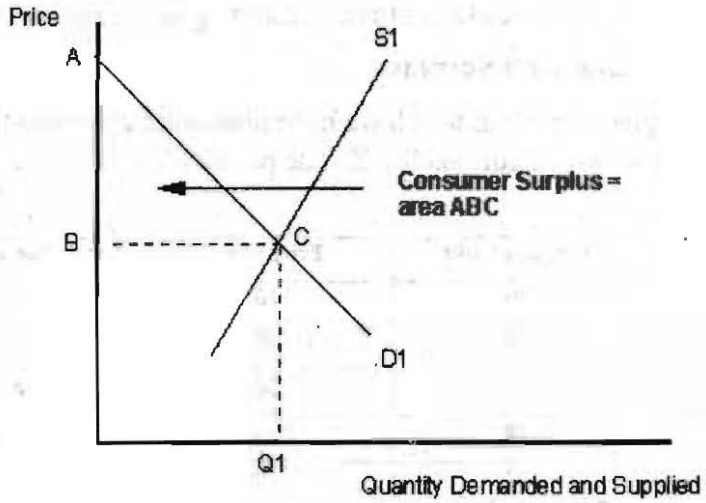
actually pay (the market price).

Consumer's Surplus = what a consumer is ready to pay – What he actually pays

The concept of consumer's surplus is derived from the law of diminishing marginal utility. As we know from the law of diminishing marginal utility, the more of a thing we have, the lesser marginal utility it has. In other word, as we purchase more of goods, its marginal utility goes o diminishing. The consumer is in equilibrium when marginal utility is equal to given price i.e., he purchases that many number of units of a good at which marginal utility is equal to price. Since the price is fixed for all the units of good he purchases except for the one at margin, he gets extra utility; this extra utility or extra surplus for the consumer is called consumer's surplus.

The level of consumer surplus is shown by the area under the demand curve and above the ruling market price

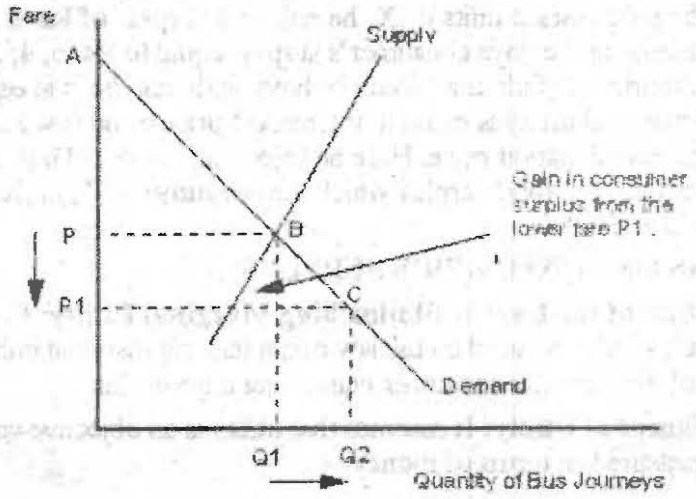
Consumer Surplus



Consider the demand for public transport shown in the diagram. The initial fare is price P for all passengers and at this price, Q1 journeys are demanded by local users.

At price P the level of consumer surplus is shown by the area APB. If the bus company cuts price to P1 the demand for bus journeys expands and the new level of consumer surplus rises to AP1C. This means that the level of consumer welfare has increased by the area PP1CB.

Changes in Bus Fares and Consumer Surplus



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Consumer surplus = total willingness to pay for a good or service - the total amount consumers actually do pay. If a zero fare is charged, consumers will demand bus journeys up to the point where the demand curve cuts the x-axis. When demand for a product is perfectly elastic, the level of consumer surplus is zero since the price that people pay matches precisely the price they are willing to pay. There must be perfect substitutes in the market for this to be the case.

When demand is perfectly inelastic the amount of consumer surplus is infinite. Demand is invariant to a price change. Whatever the price, the quantity demanded remains the same.

Note that both these situations are highly unlikely to exist - the vast majority of demand curves for goods and services are downward sloping. When demand is inelastic, there is a greater potential consumer surplus because there are some buyers willing to pay a high price to continue consuming the product.

Measurement of Consumer's Surplus:

Consider the table given below in which we have illustrated the measurement of consumer's surplus in case of commodity X. The price of X is assumed to be Rs. 20.

No. of units	Marginal Utility	Price (Rs.)	Consumer's Surplus
1	30	20	10
2	28	20	8
3	26	20	6
4	24	20	4
5	22	20	2
6	20	20	0
7	18	20	-

We see from the above table that when consumer's consumption increases from 1 to 2 units, his marginal utility falls from Rs.30 to Rs.28. His marginal utility goes on diminishing as he increases his consumption of good X. Since marginal utility for a unit of goods indicates the price the consumer is willing to pay for that unit, and price is assumed to be fixed at Rs.20, the consumer enjoys a surplus at every unit of purchase above 6 units. Thus the consumer is purchasing 1 unit of X, the marginal utility is worth Rs.30 and price fixed is Rs. 20, thus he deriving a surplus of Rs.10. Similarly when he purchases 2 units of X, he enjoys a surplus of Rs. 8 [Rs.28 – Rs.20]. This continues and enjoys consumer's surplus equal to Rs. 6, 4, 2 respectively from third, fourth and fifth unit. When he buys sixth unit, he is in equilibrium because here his marginal utility is equal to the market price or he is willing to pay a sum equal to the actual market price. Here he enjoys no surplus. Thus, given the price of Rs.20 per unit, the total surplus which the consumer will get, is Rs. 10 + 8 +6 + 4 + 2 + 0 = 30.

ASSUMPTIONS OF CONSUMER'S SURPLUS:

1) **Application of the Law of Diminishing Marginal Utility:** Concept of consumer's surplus is based on the law of diminishing marginal utility. In the absence of this law, the consumer cannot get any surplus.
2) **Measurement of Utility:** It assumes that utility is an objective concept. It can be measured in terms of money.

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3) **Constant marginal utility of money:** It assumes that there is no change in the marginal utility of money during the course of consumption.

4) **Constant income of Consumer:** It assumes that there is no change in the income of consumer during the course of consumption.

5) **No close substitute:** Concept of consumer's surplus assumes that there is no close substitute of the commodity available in market.

CRITICISM OF THE CONCEPT OF CONSUMER'S SURPLUS:

1) Consumer's surplus cannot be measured precisely because it is difficult to measure the marginal utilities of different units of a commodity consumed by a person.

2) In the case of necessaries, the marginal utilities of the earlier units are infinitely large. In such case the consumer's surplus is always infinite.

3) The consumer's surplus derived from a commodity is affected by the availability of substitutes.

4) There is no simple rule for deriving the utility scale of articles which are used for their prestige value (e.g., diamonds).

5) Consumer's surplus cannot be measured in terms of money because the marginal utility of money changes as purchases are made and the consumer's stock of money diminishes.

6) The concept can be accepted only f it is assumed that utility can be measured in terms of money or otherwise. Many modern economists believe that this cannot be done.

IMPORTANCE OF THE CONCEPT OF CONSUMER'S SURPLUS

1) **Determination of Monopolistic Price:** If the commodity produced by a producer is a monopoly item, he can fix higher price for it because the consumer will be ready to pay more for such commodity.

2) **Helpful in comparing the Profit of International trade:** A country imports only those commodities which are scarce and costly in local market and exports only those commodities which are abundant and comparatively cheaper.

3) **Public Finance:** Marshall stated that the finance minister should consider consumer's surplus while imposing taxes and while granting economic assistance to industries. A tax should be imposed only when an increase in the income of government resulting from such tax is more than the decline in consumer's surplus.

Thus, it may be concluded that the concept of consumer's surplus is used in many spheres of life.

INDIFFERENCE CURVE ANALYSIS

Concept of indifference curve analysis is based upon the assumption that every consumer has a scale of preferences between two or more commodities. There are some combinations of these commodities which provide him equal satisfaction. He can choose any of these combinations. If he chooses one combination, he is indifferent to all other combinations. Such combinations can be presented on a curve also.

According to Prof. J. K. Smith,

"It is the focus of points representing pairs of quantities between which individual is indifferent, so it is termed as indifference curves."

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According to Prof. K. E. Boulding,

"Indifference curves are the lines of equal preference. These are called indifference curves because they represent combinations of quantities which are neither better nor worse than each other but are indifferent."

Indifference analysis combines two concepts; indifference curves and budget lines (constraints)

ASSUMPTIONS UNDERLYING INDIFFERENCE CURVE APPROACH:

1) The consumer is rational and possesses full information about all relevant aspects of economic environment in which he lives.
2) The consumer is capable of ranking all conceivable combinations of gods according to the satisfaction they yield. Thus if he is given various combinations say A, B, C, D, E he can rank them as first preference, second preference and so on. If a consumer happens to prefer A to B, he cannot tell quantitatively how much he prefers A to B.
3) If the consumer prefers combination A to B, B to C, then he must prefer combination A to C. In other words, he has consistent consumption pattern behaviour.
4) If combination A has more commodities than combination B, then A must be preferred to B.

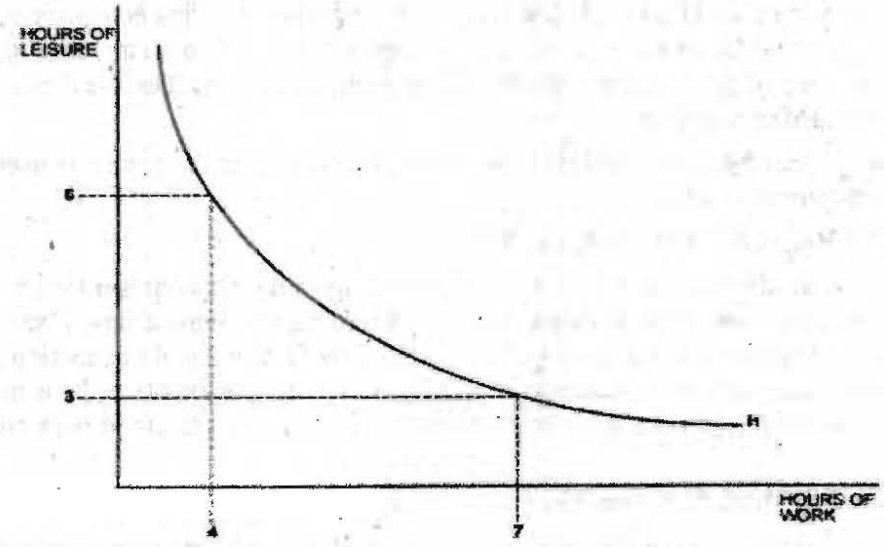
The indifference curve

An indifference curve is a line that shows all the possible combinations of two goods between which a person is indifferent. In other words, it is a line that shows the consumption of different combinations of two goods that will give the same utility (satisfaction) to the person.

The aim of indifference curve analysis is to analyze how a rational consumer chooses between two goods. In other words, how the change in the wage rate will affect the choice between leisure time and work time.

For instance, in Figure 1 the indifference curve is I_1. A person would receive the same utility (satisfaction) from consuming 4 hours of work and 6 hours of leisure, as they would if they consumed 7 hours of work and 3 hours of leisure.

Figure 1: An indifference curve for work and leisure



An important point is to remember that the use of an indifference curve does not try to put a physical measure onto how much utility a person receives.

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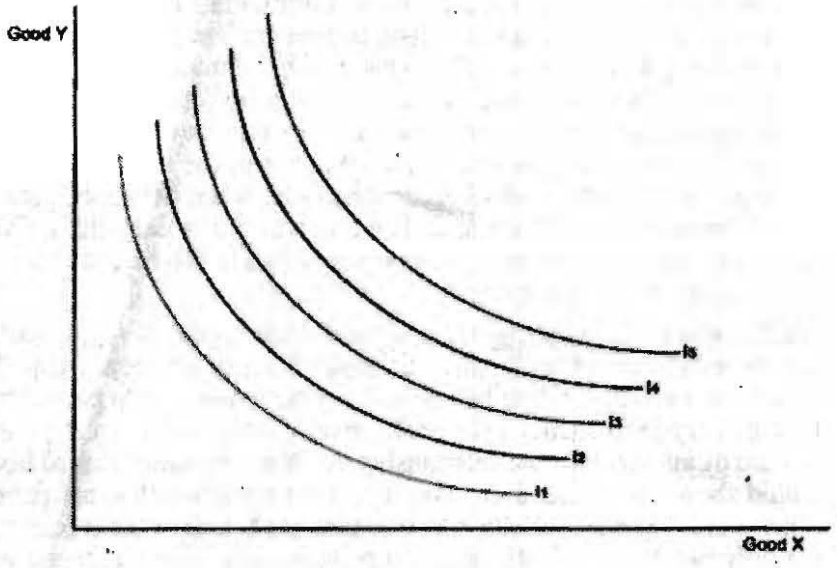
Figure 1 highlights that the shape of the indifference curve is not a straight line. It is conventional to draw the curve as curved. This is due to the concept of the diminishing marginal rate of substitution between the two goods.

INDIFFERENCE CURVE MAP:

A set of indifference curves is called indifference map. An indifference map depicts complete picture of consumer's taste and preferences. There can be infinite indifference curves for a consumer corresponding to the possible levels of his satisfaction. All the curves can be presented on an indifference map. Infinite number of indifference curves can be constructed for any two substitute goods. Each curve shows the combinations of two commodities that are equally good to the consumer. An indifference curve map can be presented as follows:



A Consumer's Indifference Curve

In this diagram, I_1, I_2, I_3, I_4, I_5, and I_6 are some of the indifferent curves that can be constructed with good X and Y.

The general rule is that indifference curves further too the right (I_4 and I_5) show combinations of the two goods that yield a higher utility, while curves to the left (I_2 and I_1) show combinations that yield lower levels of utility.

MARGINAL RATE OF SUBSTITUTION:

The marginal rate of substitution is the amount of one good (i.e. work) that has to be given up if the consumer is to obtain one extra unit of the other good (leisure). Marginal Rate of substitution (MRS) is the rate at which the consumer is prepared to exchange goods X and Y.

$$\text{Marginal rate of substitution (MRS)} = \frac{\text{change in good X}}{\text{change in good Y}}$$

The marginal rate of substitution diminishes due to the principle of diminishing marginal utility. Where this principle states that the more units of a good are consumed, then additional units will provide less additional satisfaction than the previous units. Therefore, as a person consumes more of one good (i.e. work) then they will receive diminishing utility for that extra unit (satisfaction), hence, they will be willing to give up less of their leisure to obtain one more unit of work.

The relationship between marginal utility and the marginal rate of substitution is often summarized with the following equation;

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$$MRS = \frac{MRS = MU_x}{MU_y}$$

It is possible to draw more than one indifference curve on the same diagram. If this occurs then it is termed an indifference curve map (Figure 2).

PROPERTIES OF INDIFFERENCE CURVES:

The following are the main characteristics or properties of indifference curves:

1) **Indifference curves slopes downward to the right**: This property implies that when the amount of one good in combination is increased, the amount of other good is reduced. This is essential if the level of satisfaction is to remain the same on an indifference curve.
2) **Indifference curve are always convex to the origin:** It has been observed that as more and more of one commodity (X) is substituted for another (Y), the consumer is willing to part with less and less of the commodity being substituted (i.e. Y). This is called diminishing marginal rate of substitution. This diminishing marginal rate of substitution gives convex shape to the indifference curves. However, there are two extreme situations. When two goods are perfect substitutes of each other, the indifference curves is a straight line on which MRS is constant. And when two goods are perfect complementary goods (e.g. gasoline and water in a car), the indifference curve will consist of two straight lines with a right angle bent which is convex to the origin or in other words, it will be L shaped.
3) **Indifference curve can never intersect each other**: No two indifference curves will intersect each other although it is not necessary that they are parallel to each other. It is based on the assumption that a particular indifference curve represents a particular level of satisfaction to the consumer. In case of intersection the relationship becomes logically absurd because it would show that higher and lower levels are equal which is not possible. In other words, two curves can intersect each other only when a consumer can get only two levels of satisfaction simultaneously, which is impossible.
4) **They are not necessary to be parallel to each other**: Indifference curves may not be parallel to each other. If the rate of substitution between two commodities is equal, the curves will be parallel. If the rate of substitution is not equal, the curves will not be parallel.

BUDGET LINE (BUDGET CONSTRAINTS) OR PRICE LINE:

A higher indifference curve shows a higher level of satisfaction than a lower one. Therefore, a consumer in his attempt to maximize satisfaction will try to reach the highest possible indifference curve. But in his pursuit of buying more and more goods and thus obtaining more and more satisfaction he has to work under two constraints: firstly, he has to pay the prices for the goods and secondly, he has a limited money income with which to purchase the goods. These constraints are explained by budget line or price line.

The budget line is an important component when analyzing consumer behaviour. The budget line illustrates all the possible combinations of two goods that can be purchased at given prices and for a given consumer budget. Remember, that the amount of a good that a person can buy will depend upon their income and the price of the good.

This discussion outlines the construction of a budget line and how the change in the determinants will affect the budget line.

Figure 3 constructs a budget line for a given budget of Rs. 60, Rs.2 per unit of x and Re.1 per unit of y.

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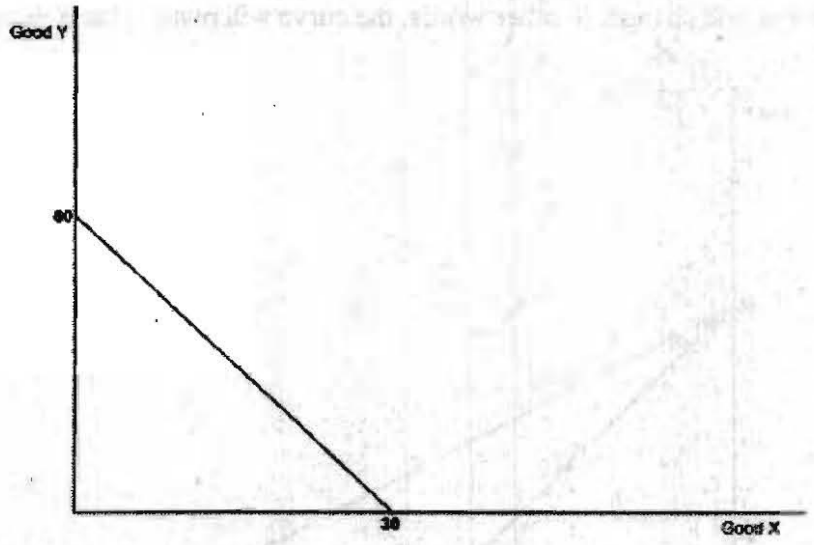


With a limited budget the consumer can only consume a limited combination of x and y (the maximum combinations are on the actual budget line).

CHANGES IN BUDGET LINE:

There can be a change in budget line due to two causes as follows:

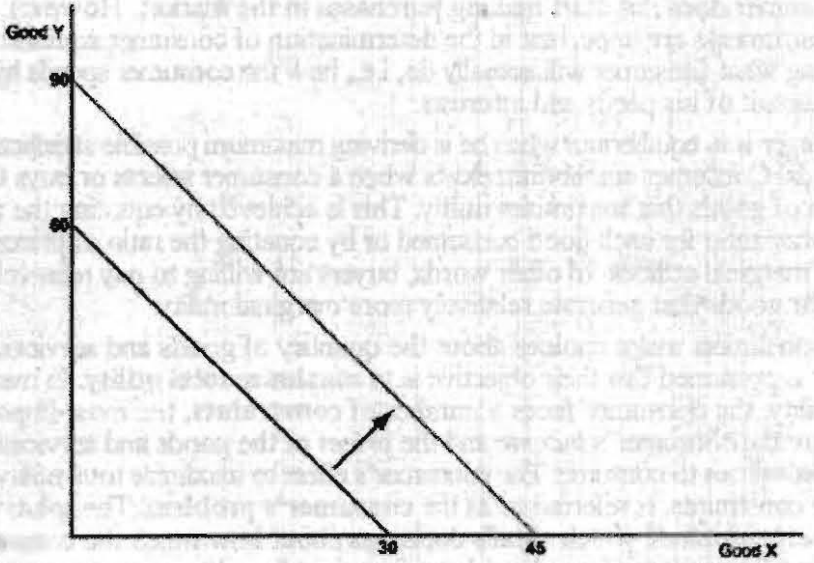
1 Change in the income of consumer,

2 Change in the price of goods.

Effect of Changes in the income of consumer on budget line:

If consumer income increases then the consumer will be able to purchase higher combinations of goods. Hence an increase in consumer income will result in a shift in the budget line. This is illustrated in figure. Note that the prices of the two goods have remained the same; therefore, the increase in income will result in a parallel shift in the budget line. Assume consumer income increased to Rs. 90.

An increase in consumer income



If consumer income fell then there would be a corresponding parallel shift to the left to represent a fall in the potential combinations of the two goods that can be purchased.

Effect of Changes in the prices of goods on budget line:

If income is held constant, and the price of one of the goods changes then the slope

Check Your Progress

4. What is consumer equilibrium?
5. What is budget line?

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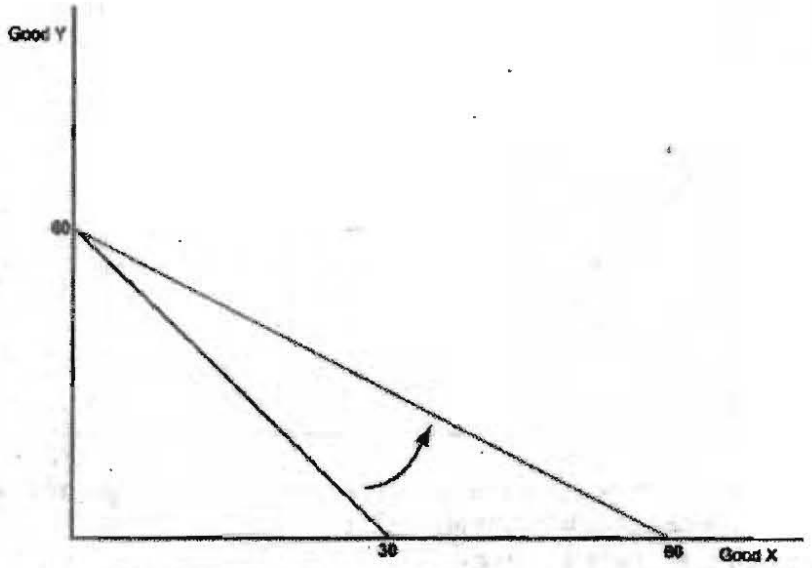
of the curve will change. In other words, the curve will pivot. This is illustrated in Figure.



The reduction of the price of good x from Rs. 2 to Re. 1 means that on a fixed budget of Rs. 60, the consumer could purchase a maximum of 60 units, as opposed to 30. Note that the price of good y has remained fixed hence the maximum point for good y will remain fixed.

CONSUMER EQUILIBRIUM:

Having explained indifference curves and budget line, we are in a position to explain how a consumer reaches equilibrium position. Indifference map shows the tastes and preferences of the consumer independently of the market conditions, i.e., what the consumer would like to do. On the other hand, the budget line represents the purchasing power or opportunities open to the consumer in the market, given his income and prices of the commodities, i.e. what the consumer is able to do. The indifference map and the budget line are quite independent of each other so long as the consumer does not start making purchases in the market. However, both of these instruments are important in the determination of consumer equilibrium or in predicting what consumer will actually do, i.e., how the consumer spends his money in the pursuit of his needs and interests.

A consumer is in equilibrium when he is deriving maximum possible satisfaction from the goods. Consumer equilibrium exists when a consumer selects or buys the combination of goods that maximizes utility. This is achieved by equating the marginal utility-price ratio for each good consumed or by equating the ratio of prices and the ratio of marginal utilities. In other words, buyers are willing to pay relatively higher prices for goods that generate relatively more marginal utility.

When consumers make choices about the quantity of goods and services to consume, it is presumed that their objective is to **maximize total utility.** In maximizing total utility, the consumer faces a number of **constraints,** the most important of which are the consumer's *income* and the *prices* of the goods and services that the consumer wishes to consume. The consumer's effort to maximize total utility, subject to these constraints, is referred to as the **consumer's problem.** The solution to the consumer's problem, which entails decisions about how much the consumer will consume of a number of goods and services, is referred to as **consumer equilibrium.**

Determination of consumer equilibrium:

Consider the simple case of a consumer who cares about consuming only two goods: good 1 and good 2. This consumer knows the prices of goods 1 and 2 and has a fixed income or budget that can be used to purchase quantities of goods 1

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and 2. The consumer will purchase quantities of goods 1 and 2 so as to completely exhaust the budget for such purchases. The actual quantities purchased of each good are determined by the condition for consumer equilibrium, which is

$$\frac{\text{marginal utility of good 1}}{\text{price of good 1}} = \frac{\text{marginal utility of good 2}}{\text{price of good 2}}$$

This condition states that the marginal utility per unit spent on good 1 must equal the marginal utility per unit spent on good 2.

To get the consumer's equilibrium, the budget line is super- imposed upon the indifference map. Consumer is said to be in equilibrium, where he maximizes the satisfaction, subject to his budget or income constraint. Consumer equilibrium is graphically illustrated in Fig. In this figure, AB is the budget line. Consumer can choose any combination of commodities 'X' and' Y'. Four indifference curves IC_1, IC_2, IC_3 and IC_4, out of the indifference map of the consumer are also shown in this diagram. All combinations of the commodities beyond the budget line and hence indifference curves IC_3 and IC_4 are not within the reach of the consumer. He would not like to choose a combination below this budget line, as it will not give maximum possible satisfaction to the consumer. Therefore, in any case, consumer equilibrium must lie on the budget line. But, -C' and 'D' points on the budget line will not ensure maximum possible satisfaction to the consumer, since these points lie on a lower indifference curve IC and it is possible to reach a combination of commodities on a higher indifference curve IC2 with the same money income.

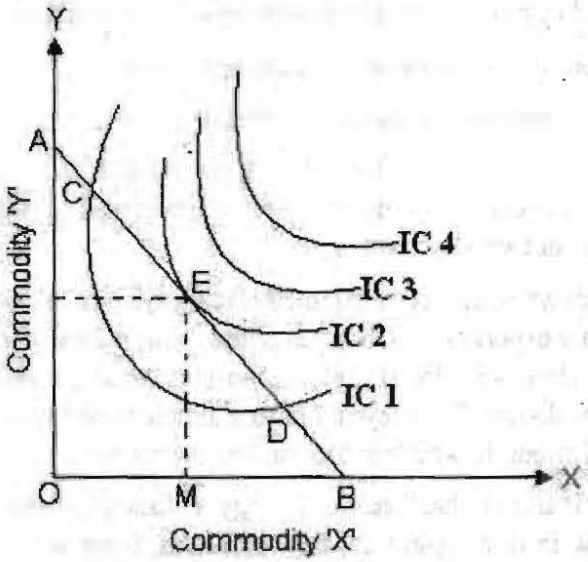

Fig.: Consumer Equilibrium

Indifference curve IC_2 is the highest indifference curve that the consumer can reach, given his budget constraint. The budget line touches this indifference curve at point 'E'. This is the point of consumer equilibrium, where the consumer purchases OM quantity of commodity 'X' and ON quantity of commodity 'Y' All other points on the budget line to the left or right of point 'E' lie on lower indifference curves and thus indicate a lower level of satisfaction. Thus, given the budget constraint, the consumer maximizes his satisfaction at the point, where his budget line is tangential to an indifference curve. The budget line can be tangent to one and only one indifference curve. It we draw a budget line, which is tangent to two or more indifference curves; it would necessitate intersection of the curve, which is against the properties of indifference curves.

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CASE STUDY:

Utility Analysis

PSE&G, a regulated utility that delivers gas and electric service to more than 70 percent of New Jersey, is a great example of an energy company thinking innovatively in terms of customer experience. In short, the utility was looking to transform their customer care operations and improve the customer experience while also reducing the cost to serve, through technology innovation and process and via architecture simplification. Through a program launched in Spring 2009 called "iPower," they've seen great results already, providing a terrific case study in utilizing technology to improve customer contact.

On the consumer end, iPower allows customers to manage their entire account online, and its first week live, nearly 50,000 customers registered for the self-service site. Internally, PSE&G had six very clear objectives when launching the initiative:

1. Achieve first quartile performance in customer service quality metrics
2. Availability of real-time information to customer service representatives
3. Respond rapidly to changing regulatory requirements
4. Enhanced customer service through process automation
5. Reduction of operations and maintenance costs
6. Increased system availability and reliability

Manoj Chouthai, the Vice President of IT and CIO of PSEG, spoke this week at the SAP Sapphire event in Orlando to discuss the progress organizationally that PSE&G has seen in two short years.

"All the challenges we had were in externally facing systems, so we had to transform the entire customer experience," Chouthai noted. "Our biggest problem was integration, so we partnered with firms that we thought would bring value to the mix, namely Tata Consultancy. In my eyes, I have a simple belief: operational excellence is about financial strength, which in turn drives innovation."

Hasit Kaji, the VP and Global Head of Energy at Tata Consultancy Services, then spoke about how in developing the new platform, there were two fundamental adoption levers:

1. How they completed the continuous improvements framework?
2. What governance model was needed for operational excellence and innovation?

"We wanted to make sure that we reduced the call traffic at the call center, so in situations where there was a wait, we enabled a system where the customer lived behind his or her number, and the agent would get a popup on their screen to call back," said Kaji. "This really helped not only to improve customer service but also in reducing the load on agents, a huge step in the right direction."

Chouthai admitted there were plenty of early growing pains in the process and that every customer didn't love the new system, but also noted that it took PSE&G about 10 months to meet and exceed their expected metrics on iPower. Some fascinating stats about the success of the program included:

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- An 85% reduction in average batch failures from 85 per day to less than 2 per day
- An improved service level from 62.7 to 83.1%
- A reduction in incident backlog reduction from 2,300 to 130 in one year
- A 95% reduction in critical cross-system replication and communication queue error backlogs
- 729,281 web accounts initiated as of February 2011 (compared to none only two years ago)

Yet again, adoption of new technologies takes time, and PSE&G showed some innovative thinking in the creation and implementation of their iPower project.

Any thoughts? How would your energy experience improve or be affected by a system like iPower?

SUMMARY:

- Utility is the want satisfying power of a commodity. It is a subjective entity and varies from person to person.
- Marginal utility is the extra satisfaction derived from consuming an additional unit of a product or service.
- Utility analysis, a subset of consumer demand theory, provides insight into an understanding of market demand and forms a cornerstone of modern microeconomics.
- The primary focus of utility analysis is on the satisfaction of wants and needs obtained by the consumption of goods.
- The law of equi-marginal utility explains that wants of every consumer are unlimited, but the resources available with him to satisfy these wants are limited, that too having alternative uses.
- The laws of diminishing marginal utility states that marginal utility decreases as more units of a product or a service are consumed.
- Consumer surplus measures the welfare that consumers derive from their consumption of goods and services, or the benefits they derive from the exchange of goods.
- Concept of indifference curve analysis is based upon the assumption that every consumer has a scale of preferences between two or more commodities.
- The marginal rate of substitution is the amount of one good (i.e. work) that has to be given up if the consumer is to obtain one extra unit of the other good (leisure).
- The budget line illustrates all the possible combinations of two goods that can be purchased at given prices and for a given consumer budget.
- A consumer is in equilibrium when he is deriving maximum possible satisfaction from the goods. Consumer equilibrium exists when a consumer selects or buys the combination of goods that maximizes utility.

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ANSWERS TO 'CHECK YOUR PROGRESS'

1. "Marginal utility of any quantity of a commodity is the increase in total utility which results from a unit increase in consumption."
2. Consumer surplus is the difference between what consumers is willing to pay for a good or service (indicated by the position of the demand curve) and what they actually pay (the market price).
3. "It is the focus of points representing pairs of quantities between which individual is indifferent, so it is termed as indifference curves."
4. The solution to the consumer's problem, which entails decisions about how much the consumer will consume of a number of goods and services, is referred to as **consumer equilibrium.**
5. The budget line is an important component when analyzing consumer behaviour. The budget line illustrates all the possible combinations of two goods that can be purchased at given prices and for a given consumer budget.

TEST YOURSELF :

Long Question

1) Explain Marginal Utility and its types.
2) Analyze critically the law of equi-marginal utility and mention its practical importance.
3) Explain the Law of Diminishing Marginal Utility. What are its exceptions and importance?
4) Critically explain the concept of consumer's surplus.
5) What are indifference curves? What are its properties?
6) Explain the equilibrium of a consumer with the help of indifference curve analysis.
7) What is budget line? How does it change?

Short Questions:

1) What do you mean by the term Utility?
2) What are the various assumptions of equi-marginal utility?
3) Give importance of Equi-marginal Utility Law.
4) What is Consumer Surplus?
5) Define Indifference curve.

FURTHER READING

- Managerial Economics: P.L.Mehta
- Raj Kumar Gupta
- K.N. Devadi

5 SUPPLY ANALYSIS

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The Chapter Covers :

- SUPPLY ANALYSIS
- LAW OF SUPPLY:
- CHANGES IN SUPPLY:
- ELASTICITY OF SUPPLY:
- TYPES OF SUPPLY ELASTICITY:
- DIFFERENT TYPES OF ELASTICITIES OF SUPPLY
- THEORY OF PRODUCTION:
- PRODUCTION PROCESS:
- PRODUCTION FUNCTION:
- LAWS OF PRODUCTION:
- LAW OF VARIABLE PROPORTIONS:
- LAW OF VARIABLE PROPORTION
- ECONOMIES AND DISECONOMIES OF SCALE:
- PROPERTIES OF ISOQUANTS:
- ISO-COST LINE OR FACTOR PRICE LINE:

SUPPLY ANALYSIS

The term 'Supply' refers to the amount of goods and services that the producers are willing and able to offer to the market at various prices during a period of time.

According to Meyers, "Supply means the amount offered for sale at a given price. We may define supply as a schedule of the amount of goods that would be offered for sale at all possible prices at any one instant of time, or during any one period of time. E.g.-a day, a week and so on, in which the conditions of supply remain the same."

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Determinants of Supply:

There are many factors which determine the supply of a product or a service. These are discussed below:

i. **Price of the Commodity:** There is direct relationship between the price of the commodity and its supply. Generally, producers want to supply more at higher price to earn more profits.

ii. **Price of the related Goods:** The supply of the commodity depends upon the price of other related goods. If the price of related commodity increases, the supply of that commodity increases. On the other hand the supply of the commodity will decreases, whose price has not changed. For example - if the price of gel pen increases, the producers will supply more quantity of gel pens. If the price of dot pens does not increase the supply of these pens would decrease. Therefore, producer will supply more quantity of gel pens as compared to dot pens.

iii. **Number of Firms:** The number of firms has a direct impact on market supply. If number of firms increases the market supply of a commodity also increases and conversely decreases in number of firms, results into decrease in market supply of the commodity.

iv. **Objectives of the firm:** The market supply of a commodity is influenced by the objectives of the firm. If the objective of the firm is to maximize profits, more quantity of the commodity will be offered at high price. On the other hand, if the objective of the firm is to maximize sales the firm will supply more quantity without increasing the price.

v. **Price of the factors of production:** Price of the factor of production inversely affects the supply of a commodity. If the price of factors of production decreases, the cost of production also decreases and it will result into increased supply of the commodity.

vi. **State of Technology:** The supply of a particular commodity depends upon the state of technology. Innovation in the techniques of production may reduce the cost of production and better quality of the commodity. Therefore profit will increase & it leads to induce the supply of a commodity.

vii. **Taxation Policy:** Taxation policy also affects the market supply of the commodity. If Government imposes heavy taxes on a commodity, cost of production will increase and it results into decreased supply of the commodity.

LAW OF SUPPLY:

The law of supply states that, if other things (determinants) remain constant, the quantity of a commodity produced and offered for sale will increase as the price of the commodity rises and decreases as the price falls. In other words, there is direct relation between the price and the supply of the commodity.

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According to Dooley, "The law of supply states that higher the price, the greater the quantity supplied or lower the price, the smaller the quantity supplied."

The law of supply can be illustrated through supply schedule and supply curve.

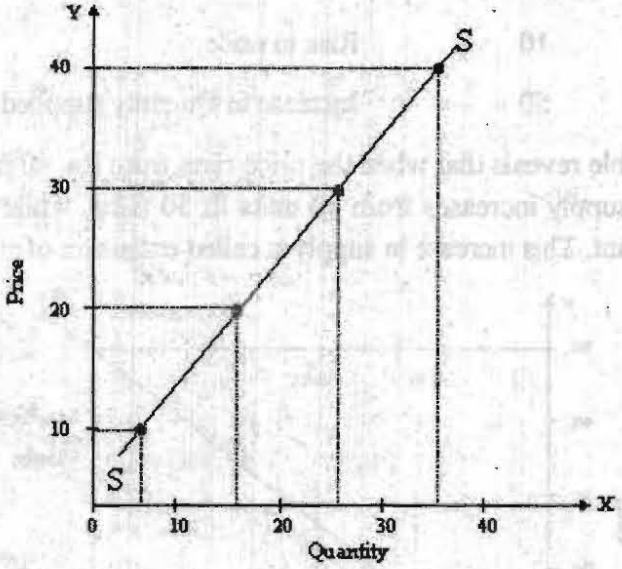
Consider the following schedule:

Supply Schedule of Commodity 'X'

Price (Rs.) per Kg.	Quantity Supplied (Kg.)
10	5
20	15
30	25
40	35

The given table shows that the quantities of the commodity 'X' would be produced or offered for sale at a number of alternative prices. At Rs. 10, 5Kg of commodity X will be offered for sale and so on.

Now, we plot the graph according to the given table:



In the graph, price is plotted on Y-axis and Quantity on X-axis. SS is the supply curve. Supply curve slopes upward towards right and that shows increase in quantity supplied in response to increase in price of the commodity.

Assumptions of the law of supply:

i No change in the price of factors of production

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ii. No change in the price of other related commodity.

iii. No change in the objectives of the firm.

iv. No change in the state of technology.

v. Producers do not expect any change in the price of the commodity in the near future.

CHANGES IN SUPPLY:

A change in supply means a shift of the whole supply curve. There are two aspects of the change in supply:

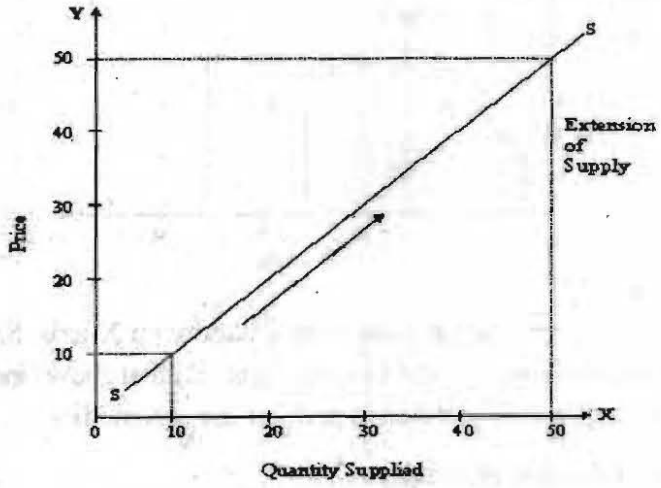
1. Extension and contraction of supply.
2. Increase and decrease in supply.

1. **Extension & Contraction of supply:** Change in supply is caused by change in price; it is called extension and contraction of supply.

   i. **Extension of supply:** When supply of a commodity increases due to increase in its price, while other things remain constant, is called extension of supply. This relation can be illustrated with the help of following table and diagram:

Price	Quantity	Relation
10	10	Rise in price
50	50	Increase in Quantity supplied

The above table reveals that when the price rises from Rs. 10 per unit to Rs. 50 per unit, supply increases from 10 units to 50 units, while other factors remain constant. This increase in supply is called extension of supply.



In diagram, quantity supplied is shown on X-axis and price of the commanding on Y-axis. SS is the supply curve of the commodity. The supply curve slops upward from left to right, which indicates the extension of supply of the commodity.

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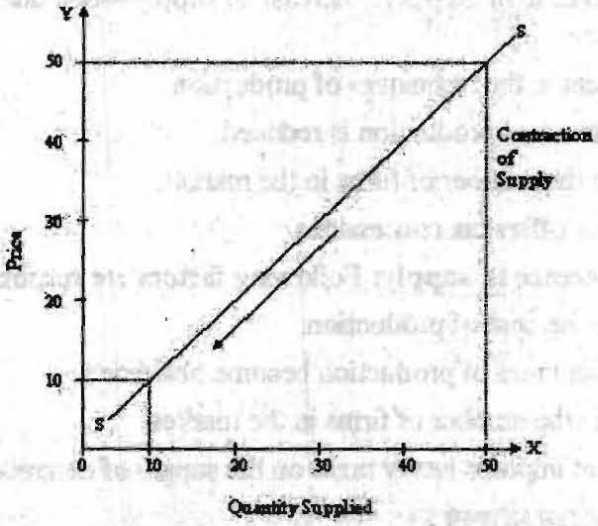
Contraction of supply: When supply of a commodity decrease due to fall in its price, while other factors remain constant, is called contraction of supply. This relation can be explained with the help of following table and diagram.

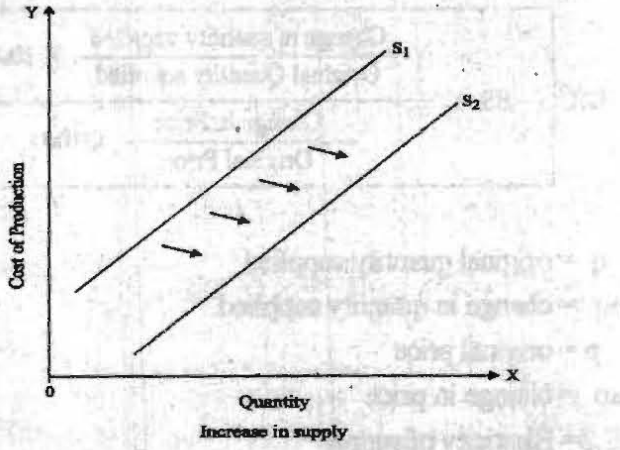
Price	Quantity	Relation
50	50	Fall in price
10	10	Decrease in Quantity supplied.

The above table reveals that when price decreases from Rs. 50 per unit to Rs. 10 per unit, supply decreases from 50 units to 10 units, while other factors remain constant. This decrease in supply is called contraction of supply.



In diagram, quantity supplied is shown on X-axis and price of the commodity on Y-axis. SS is the supply curve, which slopes downward to the left; it indicates the contraction of supply of the commodity.

2. **Increase and Decrease in Supply:** When the supply curve shifts towards right as a result of change in one of the factors other than price of the commodity that influences the supply of the commodity, is called increase in supply. On the other hand, when supply curve shifts towards left, due to change in these factors is called decrease in supply. This can be shown as follows:-



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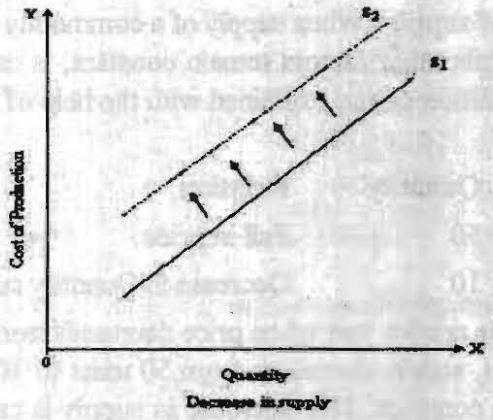

Causes of Increase in Supply: Increase in supply arises due to certain reasons as given below:-

i. Improvement in the techniques of production.

ii. Cost of factors of production is reduced.

iii. Increase in the number of firms in the market.

iv. Government offers tax concessions.

Causes of Decrease in supply: Following factors are responsible for decrease.

i. Increase in the cost of production.

ii. Present techniques of production become obsolete.

iii. Decrease in the number of firms in the market.

iv. Government imposes heavy taxes on the supply of commodity.

ELASTICITY OF SUPPLY:

The elasticity of supply is defined as the change in supply due to change in its price. This law indicates that the supply extends or contracts as a result of price rise and fall, respectively. Elasticity of supply is measured by dividing the percentage change in quantity supplied of a commodity by the percentage change in its price i.e.

$$ES = \frac{\text{Percentage change in Quantity Supplied}}{\text{Percentage Change in price}}$$

OR

$$ES = \frac{\dfrac{\text{Change in quantity supplied}}{\text{Original Quantity supplied}} \times 100}{\dfrac{\text{Change in Price}}{\text{Original Price}} \times 100}$$

Or,

Where, q = original quantity supplied

Δq = change in quantity supplied.

p = original price

Δp = change in price

E.S= Elasticity of supply

degree of responsiveness of supply to the change in price."

According to Prof. Bilas, "Elasticity of supply is defined as the percentage change in quantity divided by the percentage change in price.

TYPES OF SUPPLY ELASTICITY:

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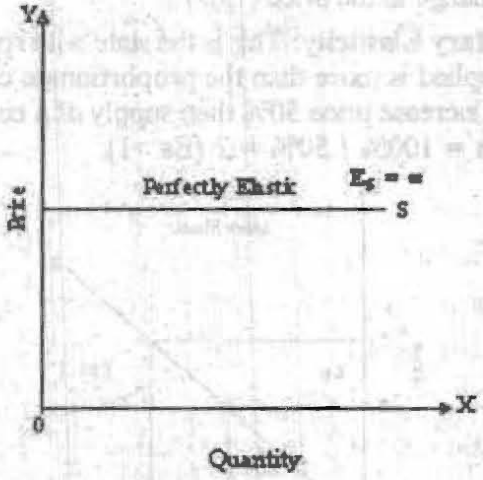
The elasticity of supply can be classified as under:

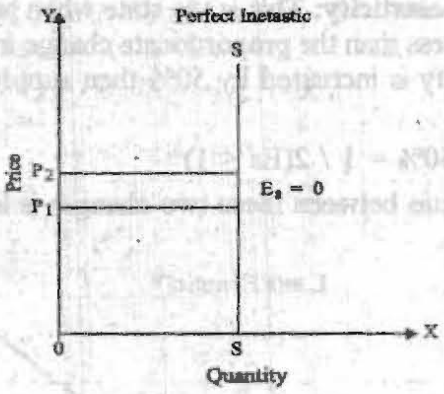
i. **Perfectly Elastic supply:** Perfectly Elastic supply result in an infinite change in quantity due to a very small change in price.

In diagram, supply curve SS is parallel to X - axis. It implies that if price is slightly reduced, supply of the commodity will also reduce. In this case, the elasticity of supply is infinite (∞) i.e. Es = ∞



ii. **Perfectly Inelastic supply:** Perfectly inelastic supply states that, there is no change in the supply of a commodity with respect to change in price.

In diagram, supply curve SS is parallel to Y - axis. It signifies that, if we increase the price of a commodity from P1 to P2, the supply remains unchanged i.e. OS. In this case, the elasticity of supply is zero.



iii. **Unitary Elasticity:** The supply of a commodity is said to be unitary elastic when proportionate change in the quantity supplied is exactly equal to the proportionate change in the price. For example, if price increases by 50 percent, supply will also increase by 50 percent i.e. Es = 50% / 50% = 1 (unity)

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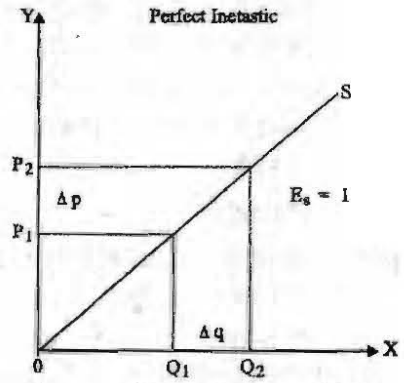
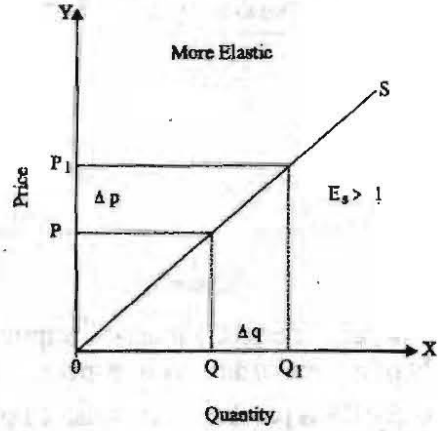


In diagram, the proportionate change in quantity supplied (?q) is equal to the proportionate change in the price (?p).

iv. **More than Unitary Elasticity:** This is the state when proportionate change in the quantity supplied is more than the proportionate change in its price. For example - if we increase price 50% then supply of a commodity will increase by 100% i.e. Es = 100% / 50% = 2 (Es >1).

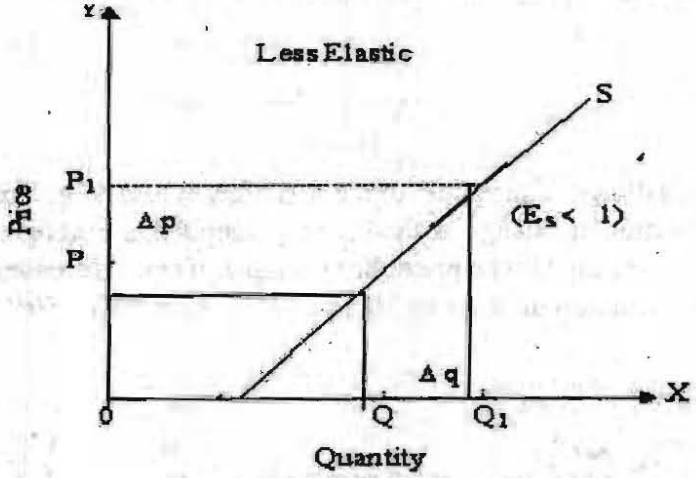


In the given diagram, the proportionate change in quantity supplied (?q) is greater than the proportionate change in the price (?p).

v. **Less than unitary elasticity:** This is the state when proportionate change in quantity supplied is less than the proportionate change in price. For example: If price of a commodity is increased by 50% then supply of a commodity will increase by 25% i.e.

Es = 25% / 50% = 1 / 2(Es < 1)

Therefore, the ratio between these two changes is less than one.



In diagram, the proportionate change in the quantity supplied (?q) is less than the proportionate change in the price (?q).

Measurement of Elasticity of Supply:

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Elasticity of supply is obtained by dividing proportionate change in supply by proportionate change in price.

$$Es = \frac{\text{Proportionate change in supply}}{\text{Proportionate Change in price}}$$

$$Es = \frac{\frac{Q_1 - Q}{Q}}{\frac{P_1 - P}{P}} = \frac{\frac{\Delta Q}{Q}}{\frac{\Delta P}{P}} = \frac{\Delta Q}{Q} \times \frac{\Delta Q}{Q}$$

$$\boxed{Es = \frac{P}{Q} \times \frac{\Delta Q}{\Delta P}}$$

Where, Es = Elasticity of supply, Q = Original quantity, Q_1 = New quantity, P = Original price, P_1 = New Price, ?P= change in price, ?Q = Change in quantity.

Thus, if we have to find out the elasticity of supply when P = Rs. 10, P1 = Rs. 15, Q = 20 units and Q1 = 50 units. Then elasticity of supply is

$$Es = \frac{P}{Q} \times \frac{\Delta Q}{\Delta P}$$

$$= \frac{10}{20} \times \frac{30}{5}$$

Es = 3 (more elastic)

DIFFERENT TYPES OF ELASTICITIES OF SUPPLY

Elasticity of Supply	Types of Elasticity	Relation with Price
$E_S = ?$	Perfectly Elastic	If we change in the price there will be infinite change in supply.
$E_S = 0$	Perfectly inelastic	Supply is not affected with change in price.
$E_S = 1$	Unitary elastic	$\Delta Q / Q = ?P / P$
$E_S < 1$	Less than unitary	$\Delta Q / Q < ?P / P$
$E_S > 1$	More than unitary	$\Delta Q / Q > ? P / P$

THEORY OF PRODUCTION:

Meaning of Production:

In micro economics, production refers to the process of converting inputs into output. Production utilizes resources to create product or service that satisfies hu-

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man demands. Production is the outcome of the combined efforts of various factors of production.

Thus, the term 'production' refers to the transformation of inputs into outputs. The term input implies all things or items which are required by the producer to produce a product. Input includes raw-material, machinery, labour, land, etc. On the other hand the term output refers to the finished product that consumers will get at the end of production process.

In other words, production is an economic activity which is directed at satisfaction of the wants of the people. Production includes making of clothes or other useful items, services provided by doctors, lawyers, teachers etc. Thus, production is all about the satisfaction of wants of people who pay for them. Production can also be defined as creation of utility. As we know that man cannot create matter. Man can only add utility. When a man produces a table, he does not create the matter of which the wood is composed. He only transforms wood into a table.

According to Prof. J. R. Hicks,

"Production means any activity whether physical or mental that satisfies the wants of other people through exchange."

So, production is an activity that increases consumer satiability for goods and services. Production analysis is always made in physical terms and it shows the relationship between physical inputs and physical output.

PRODUCTION PROCESS:

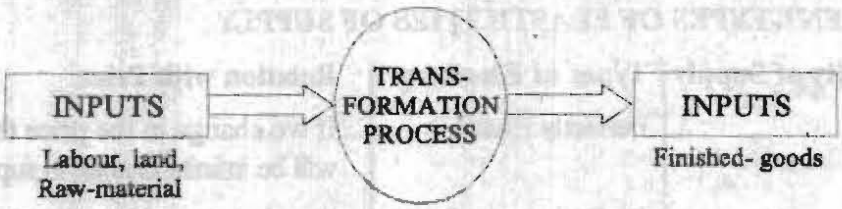
Production process is the way in which the producer creates products and services. Before starting the production process, managers have to take many decisions like:-

i. How much quantities of goods or services are to be produced.

ii. What inputs are required to produce?

iii. What type of technology is required for production?

There are three main parts of production process, these are as follows:



A producer must gather all the necessary inputs and then transform them into the product (Output) that the producer wishes to sell in the market.

The objective of the production process is to create goods and services that could meet the needs and wants of consumers. The production process is concerned with transforming inputs into those outputs that are required in the market.

Production consists of various processes to add utility to resources so as to derive more satisfaction from them. This can be done by:

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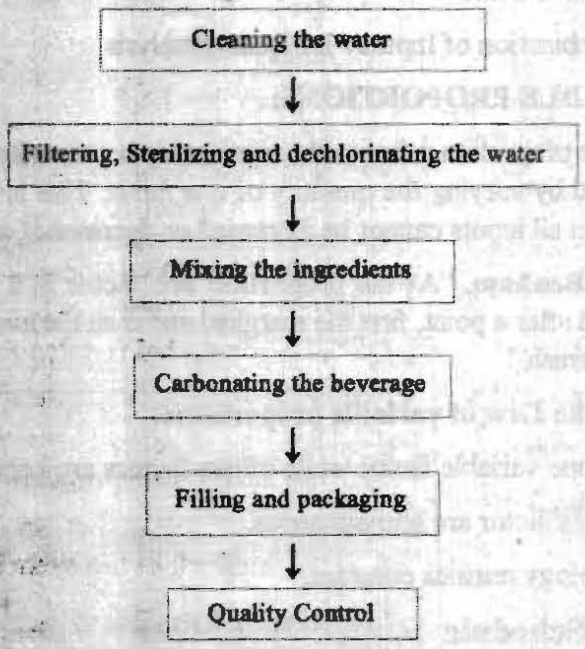
i. Changing the form of natural resources. For example: changing the form of a log of wood by converting it into a table etc.

ii. Providing material at that time, when they are not normally available. For example: seasonal fruits are stored, so that they can be sold during off season etc.

iii. Changing the place of product from the place where they are of little or no use to the place where they are used.

The basic purpose of all these activities is to create utility. Therefore, production is the creation of utility in the form of goods and services. For example, in the production of woolen clothes utility is created in some form. Firstly wool is changed into woolen clothes at the spinning and weaving mill. Then there are transported to some particular place, where they can be used for selling purposes. Since woolen clothes are used in winters, therefore they will be retained for winters. In the whole process, service of various groups of people (mill workers, shopkeepers etc.) is utilized.

Ex. - Production process of Cold-Drinks:



Production process of Cold-drinks

PRODUCTION FUNCTION:

In micro-economics, production-function is a function that specifies the output of a firm for all combinations of inputs. Production function is an equation that asserts the relationship between the quantities of productive factors and the amount of product obtained from them.

Thus, the relationship between the quantities of inputs and the maximum quantities of output produced is called the production-function."

The production-function can be expressed as

$$Q = f(x_1, x_2, x_3 \ldots\ldots\ldots\ldots X_n)$$

Check Your Progress

1. What is law of supply?
2. What is unitary elasticity?
3. What do you mean by production?

NOTES

Where Q = Quantity of output

x_1, x_2, x_3 .....x_n = Quantities of various inputs.

According to Watson, "Production function is the relation between a firm's production (Output) and the material factors of production (inputs)."

According to Koutsoyiannis," The production function is purely a technical relation which connects factor inputs and output."

Production-function of a firm can be studied in the context of short - period and long-period. Short period refers to that period in which various factors of production are kept constant. In short-run it is possible to increase the quantity of one input but other inputs remain constant. On the other hand, long run is the period of time in which all the factors of production are variable.

LAWS OF PRODUCTION:

The productions function can be studied in three ways:

1. Law of variable proportions.
2. Law of Returns to scale
3. Optimum Combination of Inputs / Iso-quant Analysis

LAW OF VARIABLE PROPORTIONS:

The law of variable proportion refers to the relationship between input-output when output is increased by varying the quantity of one input. This law is operated in short-period "when all inputs cannot be increased or decreased" simultaneously.

According to F. Benham, "As the proportion one factor in a combination of factors is increased after a point, first the marginal and then the average product of that factor will diminish."

Assumptions of the Law of variable proportions:

1. There is only one variable factor while others factors are kept constant.
2. Units of variable factor are homogeneous.
3. State of technology remains constant.

Production - Schedule

Unit of Labour	Total Production (T.P.)	Average Product (A.P.)(M.P.)	Marginal Product
1	100	100	100
2	240	120	140
3	390	130	150
4	520	130	130
5	600	120	80
6	660	110	60
7	700	100	40
8	720	90	20
9	720	80	0
10	700	70	-20

Total Product (TP):

Total product refers to the total volume of product produced by the given amount of factors of production (both variable & fixed) during certain period of time. If we increase the quantity of variable inputs, total product also increases. There is certain limit to which total product can increase in response to an increase in the factors of production. Beyond this limit, total product decreases, even with increase in factors of production.

The given table shows that, when one unit of labor is employed, the total product is 100. The total product goes on increasing as more units of labour are employed till a particular stage & thereafter it decreases.

Average product:

Average product is the total product per unit of the variable factor. The behaviour of average product is almost equal to the behaviors of total product. If we increase the factor of production, average product also increases but after certain limit it starts to decline. Average product can be obtained by dividing total product by total units of variable factor.

Marginal Product (MP):

Marginal Product is the change in total product per unit change in the quantity of variable factor.

Marginal Product can be obtained by dividing change in total product by change in the quantity of variable factor i.e.

$$MP = \Delta TP / ? L$$

or, $MP = TP_n - TP_{n-1}$

Where,

MP	=	Marginal Product
Δ TP	=	Change in total product
Δ L	=	Change in units of labour (variable factor)
TP_n	=	Total Product at n unit of labour
TP_{n-1}	=	Total Product at n-1 unit of labor

Relationship between total product average product & marginal product:

The various points of relationship between total, average and marginal product are as under:

i. If the quantity of variable factor of production is increased, total, average and marginal product are all increased.

ii. When average product rises, marginal product is more than the average product.

iii. When average product is maximum, marginal product is equal to average product.

iv. When average product decreases, marginal product is less than average product.

v. Total product is maximum when marginal product is zero.

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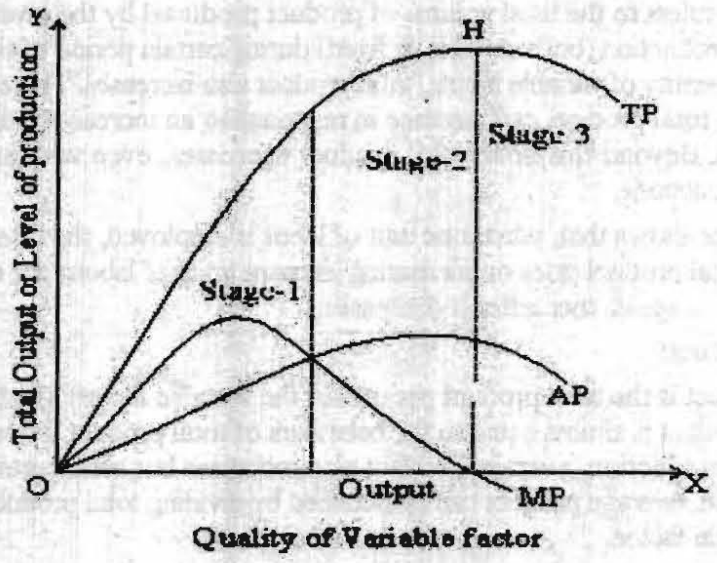
LAW OF VARIABLE PROPORTION



In the given graph, the quantity of variable factor is shown on X-axis and total output on Y-axis. There are three stages of law of variable proportions, which are explained below:

Stage 1- Law of Increasing Return: In this stage, total product increases at an increasing rate. Marginal product also increases and reaches its maximum. The stage-1 ends, were the average product curve reaches its highest point.

Thus, in the first stage the AP product curve fist increases and then starts falling after attaining its maximum level. It is to be noted that, marginal product curve is always greater than average product curve before declining.

Explanation of the Law: The law of increasing returns is operated in the first stage because in the beginning the quantity of fixed factors is abundant in comparison to the quantity of the variable factor. If we add more units of variable factor keeping the units of fixed factors as constant then the fixed factors will be utilized more effectively and intensively. Thus, the efficiency of fixed factors increases with the addition of more units of variable factors. This is the reason for the rapid increase in production.

In the graph of average product and marginal product, both AP curve and MP curve are increasing as more units of labour are employed. It implies that total product also increases with the increasing rate.

State-2: Law of Diminishing Return: In second stage, total product increases at a diminishing rate until it reaches its maximum point 'H'. In this stage both marginal product and average product of the variable factor are declining. At the end of second stage i.e. at the point 'H', the marginal product of the variable factor is zero. At this stage, both marginal product and average product of the variable factor decrease continuously, therefore this stage is known as the stage of diminishing returns. This stage is very important because the firm will seek to produce its highest possible output.

Explanation of the law: In the second stage, law of diminishing returns arises due to the continuous increase in the variable factor, without increasing the quantity of

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fixed factors. As we have discussed before, law of increasing returns occur primarily because of more efficient use of fixed factors as more units of variable factor are added to the fixed factors. Once the point is reached at which the variable factor is available in adequate quantity that helps to ensure efficient utilization of fixed factors. Further increase in variable factor will cause average and marginal product to decline because the fixed factors become inadequate in comparison to the quantity of variable factor. For example - Optimum utilization of a machine is achieved if four labors are employed to it. If we increase the number of labour, his contribution will be nil. Thus, marginal and average productivity will start diminishing.

Stage 3- Law of Negative Returns: In Stage 3, total product starts diminishing, average product continues to diminish and marginal product is negative. This stage is called the stage of negative returns because the marginal product of the variable factor is negative during this stage.

Explanation of the Law: If the amount of variable factor is too excessive relative to the fixed factors, total product falls instead of rising, and marginal product turns to be negative.

The producer will not select either the stage 1 or stage 3 for production. In the stage 1, the producer will not utilize the fixed factor inputs and he will not utilize the opportunities of increasing production by increasing the quantity of variable factors.

A producer will never produce in stage 3 because in this stage marginal product of the variable factor is negative.

Thus, the producer will never produce in stage 1 and stage 3. These stages are called as **"Non-economic region"** or **"irrational phase of production"** he can maximize the output.

LAW OF RETURNS TO SCALE:

The law of returns to scale illustrates the relationship between outputs and scale of inputs in the long-run. In the long-run, it is possible for a firm to change all inputs up or down in accordance of production with its scale of production.

According to Prof. Roger Miller, "Returns to scale refer to the relationship p between changes in output and proportionate changes in all factors of production."

Returns to scale may be constant increasing or decreasing. If we increase all the factors of production in some proportion, output increases in the same proportion, it is said to be constant returns to scale. When all factors of production are increased in certain proportion but the output is increased in greater proportion; it is said to be increasing returns to scale. If all factors of production are increased in certain proportion but the output is increased in less proportion, it is said to be diminishing returns to scale. Thus, returns to scale exhibit three phases -

1. Increasing Returns to Scale,
2. Constant Returns to scale,
3. Diminishing Returns to scale.

1. **Increasing Returns to Scale:** Increasing returns to scale implies that, output increases in a greater proportion than the increase in inputs. For example: If quantity of all the factors of production is increased by 20% & as a result output is increased by 25%, it will be the stage of increasing returns to scale.

Check Your Progress

4. Define Iso-product curve?
5. Give Law of Variable Proportions?

NOTES

Cause of Increasing Returns to Scale:

1. Full utilization of fixed factors,
2. Specialization of labour.

2. **Constant Returns to Scale:** Constant returns to scale refers to the state when we increase the quantity of factors of production in certain proportion, output increases in the same proportion. For example, if quantity of all factors of production is increased by 10% & the output is also increased by 10%.

   According to Prof. Hanson: "Constant returns to a factor occur when additional application of the variable factor increases output only at the constant rate."

   Cause of Constant Returns to scale:

   1. Fixed factors are optionally utilized.
   2. Variable factors are also most efficiently utilized.

3. **Diminishing Returns to scale:** When output increase in a smaller proportion with an increase in all inputs, it is said to be diminishing returns to scale. For example: Quantity of all factors of production is increased by 20% and as a result, quantity of production increases by 15% only.

   According to Prof. Benham: "As the proportion of one factor in a combination of factors is increased, after a certain point, the marginal product of that factor will diminish.

   Causes of Diminishing Returns to Scale:

   1. Factors of production are imperfect substitutes of each other
   2. Fixed - factors are over-utilized.

ECONOMIES AND DISECONOMIES OF SCALE:

Economics of scale are the cost advantages, which the firm will exploit by expanding the scale of production in long-run.

1. **Internal Economics and diseconomies:** As we have discussed earlier that returns to scale increases in the initial stage and after remaining constant for some time, it starts to diminish. The simple question arises in our mind that why we get increasing returns to scale and why after a certain point we get decreasing returns to scale. The answer is that initially a firm enjoys internal economics of scale and after certain limit it suffers from internal diseconomies of scale. Some internal economies and diseconomies are as follows -

   i) **Technical Economics and Diseconomies:** When a firm increases its scale of production, it become possible for the firm to use more specialized and efficient form of all factors, specially machinery and techniques of production. This will reduce the cost of production.

   After a certain point, the firm starts experiencing diseconomies of scale. This happens when the firm has reached the highest point by utilizing almost all the possibilities of division of labour and employment of more efficient machinery, then further increase in the scale of production will entail high long-run cost. When the scale of production is too large, it becomes difficult

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for the management to exercise control and to bring proper co-ordination among various factors of production.

ii) **Managerial Economies and Diseconomies** :Managerial economies refer to reduction in managerial cost when output is increased, division of labour can be made applicable for the management also i.e. the production manager can look after the production department, sales manager can look after sales and finance manager can look after finance department. Since, every activity comes under the supervision of specialist; therefore, the efficiency and productivity of management are greatly improved. Decentralization of decision making also enhances the productivity and efficiency of managers.

After a certain limit managerial diseconomies start coming into light. It is very difficult for the management to establish proper co-ordination among various departments.

iii) **Commercial Economics and Diseconomies:** Production of large amount of goods requires enough material and components. This enables the firm to purchase raw material in bulk, which may reduce the cost of production. Similarly, as the scale of production increases, advertising costs per unit of output fall.

These economies become diseconomies after an optimum scale. For example: advertising and other marketing expenditure will increase more than proportionately after the optimum level.

2. **External Economies and Diseconomies:** External economies and diseconomies are those economies and diseconomies which accrue to firms as a result of expansion in the output of whole industry and they are not dependent on the output level of individual firms. They are said to be external because they accrue to firms not from out of their internal situations but from external situation i.e. expansion of the industry. They are as follows:-

i. **Technological External Economies:** When the whole industry expands, it may result in the invention of new technical knowledge. Therefore, industry will use improved and better machinery than before. This will change the technical co-efficient of production and it will enhance the productivity of firms in the industry and reduce the cost of production.

ii. **Better transportation and marketing facilities:** Development of transportation and marketing network reduces the cost of production of the firms to a great extent.

External economies may also cease if there are certain diseconomies which may counter-balance the advantages of the expansion of an industry. An example of external diseconomies is the rise in some factor prices. When an industry expands, the requirement of various factor of production increases like raw-material, skilled labour and so on. This may result in pushing up the prices of all such factors of production when they are short in supply.

ISO-QUANT ANALYSIS:

It is a long-run production function with two variable inputs. The term 'Iso-Quant has been derived from 'Iso' meaning equals and 'Quant' meaning quantity. Hence, Iso-quants are also called as equal product curves or product indifference curves or constant product curves iso-product curves.

NOTES

Since every producer wants to achieve maximum production at minimum cost, therefore, he has to establish optimum combination of the factors of production with which he can achieve his object. This problem is solved by Iso-product curves. Iso-product curve represents different combinations of two factors of production with which a firm can achieve equal amount of output.

According to K.J. Cohen & R.N. Cyert: "An Iso-product curve is a curve along which the maximum achievable rate of production is constant."

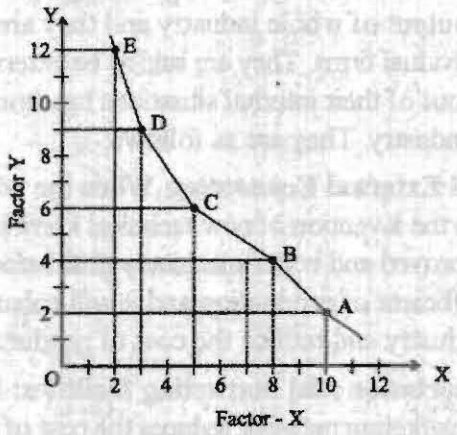
Thus an ISO- product curve is a curve which shows all possible combinations of two factors of production; which will produce equal amount of output. The concept of iso-quant can be easily understood with the help of following schedule and graph:-

ISO-PRODUCT SCHEDULE

Combination	Units of factor (X)	Units of factor (Y)	Output (Units)
A	10	2	100
B	8	4	100
C	5	6	100
D	3	9	100
E	2	12	100

In the above schedule all the five combinations will produce the equal level of output, i.e. 100 units

Graphic Representation:



In the graph, units of factor 'X' have been presented on 'OX' axis and units of factor 'Y' have been presented on 'OY' axis. ABCDE are the combination of factor x and y which produce equal amount of output i.e. 100 units. This curve is the 'ISO-product curve.'

Assumption of Iso-quants: Iso-quant analysis is normally based on following assumptions:-

1. It is assumed that, there are only two factors of production.
2. Technical conditions of production cannot be changed at any point of time.

PROPERTIES OF ISOQUANTS:

1. **Iso-quants slope downwards to the right:** Iso-quant or Iso-product curves

always slope downwards from left to right. It implies that if we reduce the quantity of one factor of production, quantity of other factor of production must be increased.

2. **Iso-quant cannot touch or intersect each other:** Two or more Iso-quant curves cannot intersect each other because all the iso-quant curves represent different levels of production.
3. **Iso-quants are convex to the origin:** Iso-quants are convex to the origin because the marginal rate of substitution diminishes. It implies that if we increase the units of factor 'x', we have to reduce the units of factor 'y', because output cannot be changed.

Marginal Rate of Substitution:-

Marginal Rate of substitution refers to the rate at which a factor of production can be substituted for another at the margin without affecting any changes in the quantity of output. For example:

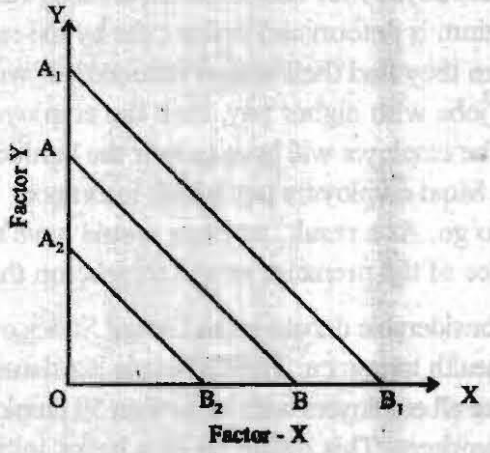
Combination	Factor - X	Factor Y	MRS of X for Y
A	12	1	NIL
B	8	2	4 : 1
C	5	3	3 : 1
D	3	4	2 : 1
E	2	5	1 : 1

In the above example, we can notice that in the second combination the producer is substituting 4 units of X for 1 unit of Y.

ISO-COST LINE OR FACTOR PRICE LINE:

Iso-cost line represents the prices of factors. Iso-cost line indicates different combinations of two factors of production which a firm can buy at a given outlay for achieving maximum output. Suppose a firm has Rs. 1000 to spend on two factors 'X' & 'Y'. If the price of factor 'X' is Rs. 20 and the price of factor 'Y' is Rs. 10 then the firm has many choices to spend its outlay on 'X' and 'Y'.

It can spend whole outlay on 'X' and buy 50 units of 'X' with zero units of 'Y' or it can spend its entire outlay on 'Y' and buy 100 units of 'Y' with zero units of 'X'.



ISO- Cost line

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In the diagram, units of factor 'X' have been presented on 'OX' axis and the units of factor 'Y' on 'OY' axis. When entire Rs. 1,000 is spent on factor X, we get OB and when entire amount is spent on Y we get OA. The straight line AB which joins point A and B will pass through many combinations of factor X and Y, which the firm can buy with its outlay of Rs. 1,000. Thus, this line AB is called as iso-cost line. If the firm wants to spend more i.e. Rs. 1,200, iso-cost line moves to the right and A_1B_1 becomes new ISO-cost line. If the firm wants to spend less than its outlay i.e. Rs. 800; ISO-cost line moves to the left and A_2B_2 becomes the new Iso-cost line.

CASE STUDY:

Supply Analysis

In the United States, most people get health insurance as a benefit from employers. Employers pay all, or some part, of the premium to a health insurance provider. But do employers actually pay this premium or do they shift the cost on to someone else?

Employers have two possible ways to shift the burden of the health insurance cost. One is to raise prices to consumers. The ability to do this depends on the reaction of consumers to the price increases. Most large companies pay health insurance and therefore would raise their prices. Many small companies (such as restaurants and gas stations) do not pay health insurance and therefore would not raise their prices. If consumers are able to substitute products made by the small companies for those made by the large companies, the large companies would not be able to raise their prices significantly. The incidence of the premium would then be on the companies. However, it seems more reasonable that buyers will not be able to substitute for the products of large companies very well. (If the price of automobiles increases, will we eat more in restaurants?) In this case, the large companies would be able to raise their prices. The incidence of the premiums would then be mainly on the consumers.

The second option for employers is to pass the health insurance cost on to workers as lower wages (actually as reduced raises in the wages). For example, a worker who earns $30,000 per year could have been paid $35,000 per year, except that the employer also paid $5,000 for the health insurance premium. Who will ultimately pay the premium is determined in this case by the same reasoning. What will workers do when they find their wages reduced? If workers will leave their jobs and find other jobs with higher pay, then the employer will not be able to reduce the wages. The employer will have to bear the burden of the premium. But this seems unlikely. Most employers pay health insurance. Most workers would have nowhere else to go. As a result, workers would have to accept the reduced wages. The incidence of the premium would then be on the workers.

In 2003, there was considerable debate in the United States over forcing employers to pay for workers' health insurance. The California legislature debated a proposed law that would require all employers with more than 50 employees to pay for health insurance for their workers. This ended up as a ballot initiative (that ultimately

failed). To most economists, workers pay for their health insurance even if the employers actually send the money to the insurance provider. Workers pay either through higher prices for the products they buy or through lower wages they receive. Workers believe they are getting health insurance from their employers as a benefit. They do not realize that, if the employers were not paying for the health insurance, their wages would be higher and the prices of the goods they buy would be lower.

SUMMARY:

- Supply refers to the amount of goods and services that the producers are willing and able to offer to the market at various prices during a period of time.
- The law of supply states that, if other things (determinants) remain constant, the quantity of a commodity produced and offered for sale will increase as the price of the commodity rises and decreases as the price falls.
- A change in supply means a shift of the whole supply curve. There are two aspects of the change in supply: Extension and contraction of Supply, Increase and decrease of supply.
- The elasticity of supply is defined as the change in supply due to change in its price. This law indicates that the supply extends or contracts as a result of price rise and fall, respectively.
- Elasticity of Supply is obtained by dividing proportionate change in supply by proportionate change in price.
- The term 'production' refers to the transformation of inputs into outputs.
- Production process is the way in which the producer creates products and services.
- Production-function is a function that specifies the output of a firm for all combinations of inputs.
- Production function is an equation that asserts the relationship between the quantities of productive factors and the amount of product obtained from them.
- The law of variable proportion refers to the relationship between input-output when output is increased by varying the quantity of one input.
- The law of returns to scale illustrates the relationship between outputs and scale of inputs in the long-run.
- Economics of scale are the cost advantages, which the firm will exploit by expanding the scale of production in long-run.
- Iso-quants are also called as equal product curves or product indifference curves or constant product curves iso-product curves.
- Iso-product curve represents different combinations of two factors of production with which a firm can achieve equal amount of output.

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- Iso-cost line indicates different combinations of two factors of production which a firm can buy at a given outlay for achieving maximum output.

ANSWERS TO 'CHECK YOUR PROGRESS'

1. **According to Dooley,** "The law of supply states that higher the price, the greater the quantity supplied or lower the price, the smaller the quantity supplied."
2. **Unitary Elasticity:** The supply of a commodity is said to be unitary elastic when proportionate change in the quantity supplied is exactly equal to the proportionate change in the price.
4. **According to F. Benham,** "As the proportion one factor in a combination of factors is increased after a point, first the marginal and then the average product of that factor will diminish."
5. **According to K.J. Cohen & R.N. Cyert:** "An Iso-product curve is a curve along which the maximum achievable rate of production is constant."

TEST YOURSELF :

Long Questions:

1) Explain the term 'Supply' and give its determinants.
2) Explain Law of Supply with its assumptions.
3) Explain how changes take place in Supply.
4) Explain the concept of Elasticity of Supply.
5) Explain various types of Elasticity of Supply.
6) Explain the meaning and process of Production.
7) Explain the Law of Variable Proportions.
8) Describe the Law of Returns to Scale.
9) Explain various Economies and Diseconomies of Scale.
10) Explain in brief Iso-quant Analysis

Short Questions:

1) Define Supply Analysis.
2) Give assumptions of the Law of Supply.
3) What do you mean the term Production?
4) What are the properties of Isoquants?

FURTHER READING

- Managerial Economics: P.L.Mehta
- Raj Kumar Gupta
- K.N. Devadi

6 MARKET STURCTURE

NOTES

The Chapter Covers :

- Meaning & Definition of Market:
- CHARACTERISTICS OF MARKET
- MARKET STRUCTURE:
- TYPE OF MARKET STRUCTURE
- MEANING & DEFINITION OF PERFECT COMPETITION:
- Meaning & Definition of PURE COMPETITION:
- PRICE DETERMINATION UNDER PERFECT COMPETITION:
- MONOPOLY
- OLIGOPOLY:
- DUOPOLY

INTRODUCTION

Meaning & Definition of Market:

The term "market" refers to a particulars place where the buyers and sellers come into contact with each other and goods and services are exchanged against the price consideration between the buyers and sellers. But, in economics, the word `market' is expressed in a wide perspective. In economics, the term `market' does not mean a particular place where goods are sold or bought but it cover the whole area where both the buyers and sellers of a product are present.

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place but always to a commodity and the buyers & sellers who are in direct competition with one another."

According to A. A. Cournot: "Economics understand by the term 'market', not any particular place in which things are bought & sold but the whole of any region in which buyers and sellers and in such free intercourse with one another that the price of the same goods tends to equality easily and quickly."

According to Prof. Benham: "Market is any area over which buyers and sellers are in such close touch with one another, either directly or through dealers, that the prices obtainable in one part of the market affects the prices paid in other parts."

CHARACTERISTICS OF MARKET

Following are the main characteristics of Market:-

1. **Area:** In economics, market is not only a place where goods are sold or bought; but the whole region where sellers and buyers of a product are spread.
2. **One Commodity:** In economics, market relates to a particular product i.e. there is a separate market for various products. For example: - There are separate markets for grains, cloths, etc.
3. **Buyers and Sellers:** The existence of buyers and sellers is necessary for the sale and purchase of a product in the market. In recent years, the existence of buyers and sellers is not necessary for the sale and purchase of product because there are lots of new techniques developed, which make transactions easy like telephones, internet, business representative etc.
4. **Free Competition:** There should be free competition among buyers and sellers in the market this competition helps in determining the price of a product among buyers and sellers.
5. **One Price:** Due to the presence of free competition amongst the buyers and sellers, the price of a product is same in the market.

MARKET STRUCTURE:

Market structure refers to the features of a market, which affect the behavior and working of firms. It implies as to how a market is built, and what are its basic features. Market structure is best defined as the organizational and other characteristics of a market. Different market structure affects the behavior of sellers and buyers in different manners.

According to Pappas & Hinchey: "Market structure refers to the number and size distribution of buyers and sellers in the market for a goods or service."

Features of market structure:

The important features of market structure are as follows:

1. **The number and nature of sellers:** The market structure is influenced by the number and nature of sellers in the market. If there is single seller in the market,

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this is sellers' monopoly, if there are two sellers in the market, this is called sellers duopoly and if there are few but more than two sellers, this is known as seller's oligopoly.

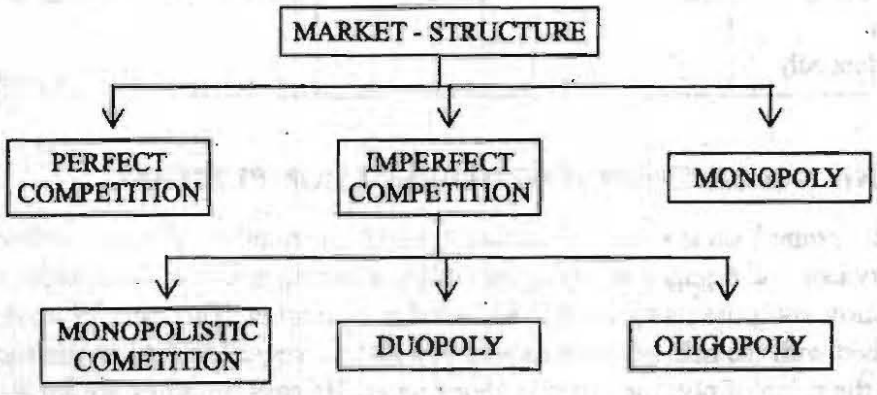
2. **Number and Nature of buyers:** In a market, there may be a few or a large number of buyers, which may influence the market structure. When there are two buyers who act jointly in the market, this is called buyers duopoly. If there are more than two buyers of a product, this is known as buyers' oligopoly, and if there is only single buyer of a product in the market this is called monopoly market.

3. **Nature of Product:** The nature of the product determines the market structure. If there is product differentiation, the market is characterized by monopolistic competition, if there is no product differentiation or product is homogeneous the market is characterized by perfect competition and if the product is completely different from other products or it has no close substitute, the market is pure monopoly.

4. **Condition of entry and exit:** The entry and exit of firms in a market depends upon the profitability or loss in a particular market. Hence the entry of new firms depends upon the profit and exit of any firm, depends upon loss. In a perfect competition market, there is freedom of entry & exit of firms. In monopoly and oligopoly markets, the entry of new firms becomes difficult.

TYPE OF MARKET STRUCTURE

Following are the types of competition existing in the market:



1. **Perfect competition:** Perfect competition is a market structure in which the number of buyers and sellers and very large and all are engaged in buying and selling a homogeneous product.

2. **Imperfect competition:** Imperfect competition is a state of market in which all the essentials of perfect competition are absent. Following are the different forms of imperfect competition.

   a) **Monopolistic competition:** Monopolistic competition is a market structure in which a large number of sellers sell differentiated products, which are close but not perfect substitutes one another, to many buyers.

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b) **Duopoly:** Duopoly is a market with two sellers exercising control over the supply of commodities and they compete with each other.

c) **Oligopoly:** Oligopoly is a market in which few sellers compete with each other producing either a homogeneous product or differentiated product for many buyers.

3. **Monopoly:** Monopoly is the market condition in which we have only one provider of a particular product. Its product is completely different i.e. it has no close substitutes.

Distinguishing Features of Different Types of MARKET

(MARKET FORMS)

Features	Perfect competition	Monopolistic competition	Oligopoly	Monopoly
1. Nature of product	Homogeneous	Differentiated Differentiated	Homogeneous or	Single product
2. Entry of Firms	Free	Free	Restricted	No Entry
3. Elasticity of Demand of firm	Perfectly elastic	Less-elastic	Less-elastic	Less elastic
4. AR and MR	Equal	Different	Different	Different
5. Degree of Monopoly	Zero	Limited	Limited	Complete

MEANING & DEFINITION OF PERFECT COMPETITION:

Perfect competition is a state of market in which the number of buyers and sellers are very large, all engaged in buying and selling a homogeneous product without any restriction and possessing perfect knowledge of market. This type of market is described with the help of this example: you go to a vegetable market and enquire about the price of potatoes from a shopkeeper. He says potatoes are for Rs. 10 per kg. In the same way, you enquire from many shopkeeper and you get the same answer. What do you notice? You notice the following facts:

i. There are large number of buyers and sellers in the potatoes market.

ii. All the shopkeepers are selling potatoes.

iii. Price uniformity i.e. all the sellers are selling potatoes for Rs. 10.

iv. Product homogeneity i.e. all the sellers are selling almost same quality of potatoes.

Such type of market is known as perfectly competition market.

According to A. Koutsoyiannis: "Perfect competition is a market structure characterized by a complete absence of rivalry among the individual firms."

According to Prof. F. Knight: Perfect competition entails "Rational conduct on the part of buyers and sellers, full knowledge, absence of friction, perfect mobility and perfect divisibility of factors of production and completely static conditions."

According to R. G. Lipsey: "Perfect competition is a market structure in which all firms of an industry are price taker and in which there is freedom of entry into, and exit from, industry."

Characteristics of Perfect Competition: Perfect competition has the following characteristics:

a) **Existence of Large number of buyers & Sellers:** The first requisite feature for perfect competition is that there are large number of buyers & sellers because no individual buyer and seller are in a position to influence the demand and supply of a product.

b) **Homogeneous Products:** The product produced by all firms should be homogeneous. As a result no sellers is in a position to decide the price commodities like salt, wheat, cotton etc. are homogeneous in nature.

c) **Free entry & Exit:** Under perfect competition, all the firms are free to enter the market or exit from it. Due to this, all the firms can make only normal profits. If the profit is more, new firms will enter into the market, conversely, firms will quite the market if there are losses.

d) **Perfect Knowledge of the Market:** The buyers and sellers should have perfect knowledge of the market conditions. They should be aware of the price that is offered and accepted in the market.

e) **Perfect Mobility of factors of production:** Factors of production are perfectly mobile. This mobility is essential in order to allow the firm to adjust their supply to demand. If the demand is more than the supply, the additional factors will move into the firm, and if the supply increases the additional factors will move out to the firm.

f) **Absence of selling Cost:** Under perfect competition there is no cost of advertising, sales promotion etc. because all firms produce a homogeneous product.

Meaning & Definition of PURE COMPETITION:

Pure competition is a part of perfect competition. In a purely competitive market, marketing research, product development, pricing, advertising, and sales promotion play little or no role. Thus, sellers in these markets do not spend much time on marketing strategy.

It can be defined as follows:

According to Bye and Hewett: "Pure Competition exists when there are many sellers whose products are all identical and no one seller controls a large enough part of the total output to exert an appreciable influence on price."

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Thus, competition in the market is said to be pure when the following conditions are satisfied:

a) Existence of large number of buyers and sellers.

b) Homogeneous commodities are supplied by each firm.

c) Free entry & exit of firms.

Difference between Perfect Competition & Pure Competition:

Basis of Difference	Perfect Competition	Pure Competition
1. Knowledge of Market Conditions	Both the buyers and sellers have perfect knowledge of market condition	Their may or may not have Perfect knowledge of market conditions.
2. Mobility of factors of Production	Factors of production are perfectly mobile.	Factors of production are not necessary to be perfect mobile.
3. Scope	Perfect Competition is wider than pure competition	Pure competition is a part of Perfect Competition. It is narrower than Perfect competition.

Advantages of Perfect Competition:

1. In perfect competition all the firms produce a homogeneous product so that there is a uniform price of a commodity in the whole market.
2. In perfect competition, the firms operate at maximum efficiency.
3. In perfect competition, the firm can sell any quantity of its product at given price. Therefore, average revenue and marginal revenue of a firm are always equal (AR = MR), it is equal to price also (AR =MR = P).

PRICE DETERMINATION UNDER PERFECT COMPETITION:

Under perfect competitive market, the market price of the product is determined by the interaction of demand & supply. In this context, 'demand' means the demand of whole industry and 'supply' means the supply from whole industry. We can explain how price is determined under perfect competition with the help of following diagram:

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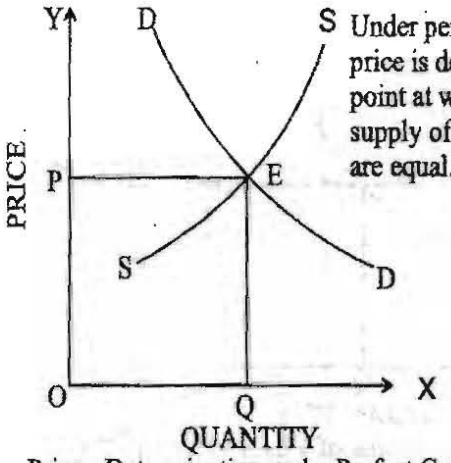

Under perfect competition, price is determined at the point at which demand & supply of a commodity are equal.

Price - Determination under Perfect Con

In this diagram, quantities of demand and supply of a commodity have been shown on X-axis and price of a commodity on the Y-axis. DD is demand curve and SS is supply curve. These curves intersect each other at point E.

Price of a commodity is determined at the point where the demand curve and supply curve intersect each other. This intersection point is known as equilibrium point. At this point demand and supply of a commodity are equal and price of a commodity is known as equilibrium price. In this diagram, price of a commodity will be OP and quantity will be OH.

Equilibrium of the Firm during Short Period:

In short period, new firms cannot enter into the market and techniques of production cannot be changed. Supply can be increased only up to existing production capacity.

According to George J. Stigler, "Short period is the period within which the rate of supply from given plants is variable but the number and size of plant is fixed."

During short-period, supply of a commodity can be changed to the extent of production capacity. Production capacity cannot be changed during this period. Therefore, there may be three situations during this period:

a) A firm may earn supernormal profits.

b) A firm may earn only normal profits.

c) A firm may suffer losses.

Supernormal Profits: At the equilibrium level of output a firm may earn supernormal or abnormal profits if its average revenues are more than its average total cost of production.

The diagram shows, that in order to attain equilibrium, the firm tries to equate marginal revenue (MR) and marginal cost (MC). MR curve is a horizontal line and MC curve is a U-shaped curve, which intersects the MR curve at E. At E, MR=MC. OQ is the equilibrium output for the firm. The firm's profit per unit is EB (AR-ATC), AR is EQ and ATC is BQ. Total profits are ABEP.

Normal Profits: A firm earns normal profits when the firm just meets its average total cost. Here AR = ATC.

The diagram, shows that MR=MC at E. The equilibrium output is OQ. Since here AR = ATC or EQ = OP, the firm just meets all its average total cost. This point is known as BEP a zone of no loss and no profit.

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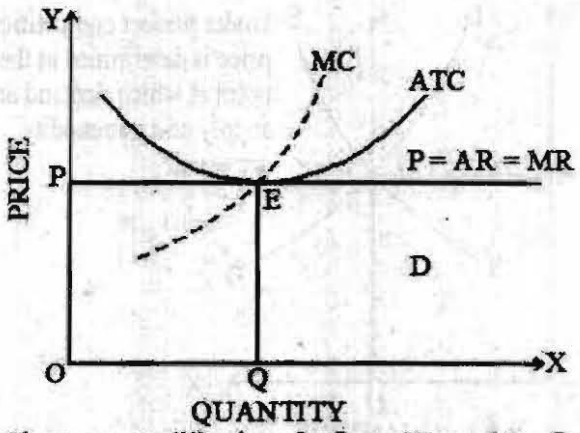


Short-run equilibruim of a firm - Normal Profit

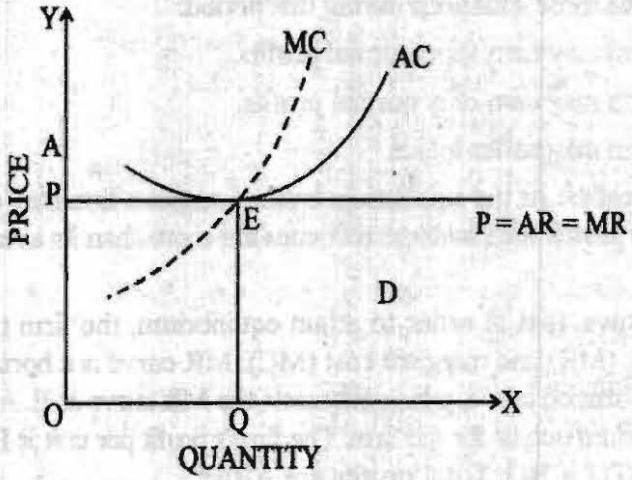
Losses: The firm may suffer loss at equilibrium position. This is the position when the firm is minimizing its losses. When the firm is able to meet its variable cost and a part of fixed costs, it will try to continue production in the short-run. But if a firm is unable to meet its average variable cost, it will be better for it to stop the product or wind-up its operations.

In the diagram E is the equilibrium point and at this point AR = EQ and ATC = BQ, the firm is earning BE per unit loss and total loss is ABEP, because BQ > EQ.

Equilibrium of the firm during Long-period:

Long-period is a period in which the commodity is durable and supply is variable. Supply can be changed according to demand. It is a period during which new firms can enter into the market, scale of production can be changed and old firms can leave the market.

During long period, a firm can change the supply of its product according to the change in demand. Therefore, a firm can care only normal profits during this period. The average revenue and average cost will be equal at this point.



Equilibrium of a firm during long period

In the diagram OQ is equilibrium quantity. At this level of output, average revenue and average cost are both equal to QE, and hence the firm is making only normal profits.

MONOPOLY

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The world 'Monopoly' means alone to sell'. Thus monopoly is a situation in which following three elements are present:

a) Only one producer or seller of a commodity,

b) No close substitute of commodity.

c) Restricted entry of new firms in market.

Monopoly is the market situation in which there is only one seller of a product. The product has no close substitutes. Monopolist has the control over price; he can sell his product at any price as he likes. If the monopolist charges higher prices for his product, he can sell his products at any price as he likes. If the monopolist charges higher prices for his products, the demand will be less and if he charges a lower price, the demand for his product will be more. Therefore, price of a product is determined by the monopolist and demand for the product is determined by the purchasers.

According to Salvatore, "Monopoly is the form of market organization in which there is a single firm selling a commodity for which there are no close substitutes."

According to Prof. Watson, "A monopolist is the only producer of a product that has no close substitutes."

According to Prof. J. S. Bain- "Single firm monopoly occurs when one seller stages the whole show. He produces such a product which has no close competition or rival."

According to Prof. Stigler, "A monopolist is the single seller of a commodity so in terms of the number of sellers, monopoly is at the opposite pole from competition."

Monopoly is a situation of market in which a single company owns all or nearly all of the market for a given type of product or service. This would happen in the case that there is a barrier to entry into the industry that allows the single company to operate without competition (for example, vast economies of scale, barriers to entry, or governmental regulation).

Features/ Characteristics of monopoly:

The following are the main features of the monopoly market:

a) **Single seller of the product:** In a monopoly market there is only one firm producing or selling a particular product.

b) **Restrictions to Entry:** In a monopoly market, there are strong barriers to entry into the market. The barriers to entry could be economic, legal or artificial.

c) **No close substitutes:** The monopolist generally sells a product which has no close substitutes. In this case, the cross elasticity of demand for the monopolist's product and any other product is zero. The price elasticity of demand is less than one. As a result, the monopolist faces the downward sloping demand curve.

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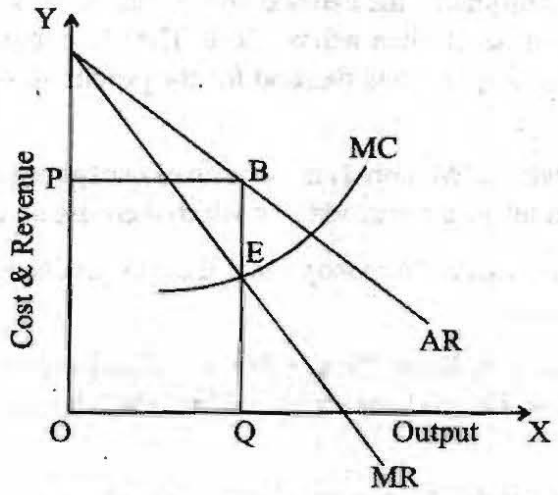
d) **Price Discrimination**: A monopolist can change the price and quality of the product. He sells more quantities charging lesser price against the product in a highly elastic market and sells less quantities charging high price in a less elastic market.

PRICE DETERMINATION UNDER MONOPOLY:

Conditions for the Equilibrium: The conditions for equilibrium in a monopoly market are:

1. Marginal cost = Marginal revenue
2. MC curve must interest MR curve from below

   B, where AC = AR



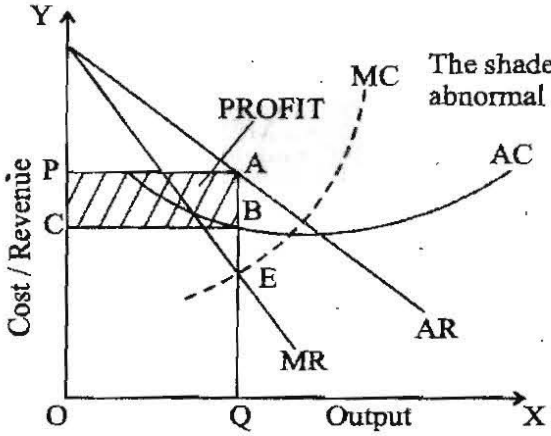
Equilibrium Position of a Monopolist

In the figure, MC curve interests MR curve at E. Therefore at E, equilibrium price is OP and equilibrium output is OQ.

MONOPOLY PRICE DURING SHORT-RUN:

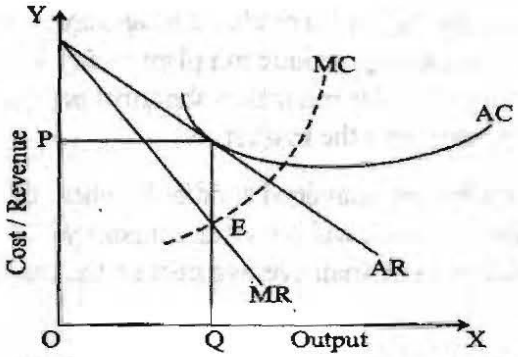
In short period, a monopolist price can be determined where MR equal to MC. In short period a monopolist may face three conditions viz. abnormal profit, normal profits or losses.

1. **Abnormal Profit:** In the figure, AR is the average revenue curve, MR is the marginal revenue curve, AC is the average cost curve and MC is the Marginal cost curve. Under monopoly, price is determined at the point, where MC = MR. The figure shows that MC curve interests MR curve at E and at this point quantity sold will be OQ. At OQ, price charged is OP (we find this by extending line EQ till it touches AR curve or demand curve). Also at OQ, the cost per unit is BQ. Therefore profit per unit is AB or total profit is ABCP.



Equilibrium of firm under monopoly : Abnormal Profit

2. Zero Profit or Break Even:

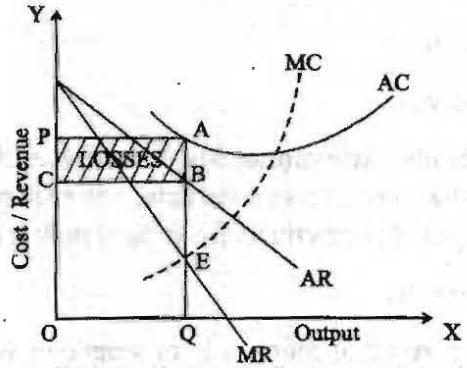


Equilibrium under Monopoly : Normal profit

In the figure monopoly price is fixed at the point at which MC is equal to MR, it will be fixed at point E. At point E, price will be OP and OQ will be the quantity sold. At this point, monopolist earns normal profits because AC = AR.

3. Losses:

In the above figure, MC interests MR at E. At E, equilibrium output is OA and equilibrium price is OP. Cost corresponding to OQ is QA. Cost per unit of output i.e. QA is greater than revenue per unit which is BQ. Thus the monopolist incurr losses to the extent of AB per unit or total loss is ABPC.



Equilibrium of the monopolist : Losses in the short-run

PRICE DETERMINATION UNDER MONOPOLY DURING LONG-RUN:

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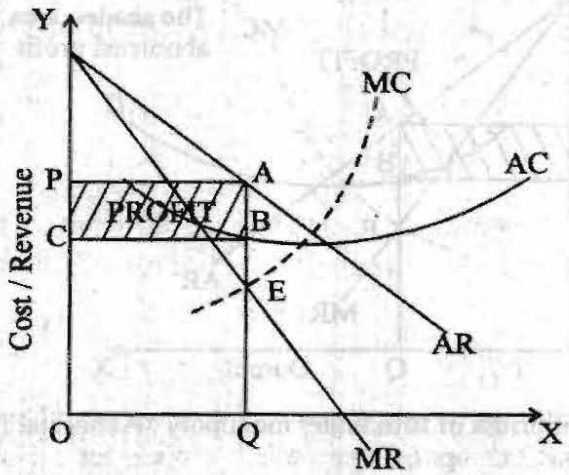

Long-run equilibrium of a monopolist

In long-run, monopolist can adjust his production capacity according to the demand of his product or use his existing production plant at any level that maximizes his profits. Monopoly firm in the long-run makes abnormal profits. It is so because new firms are restricted to enter into the market.

In the figure, firm's equilibrium is attained at point E, where the MC curve intersects MR curve. At equilibrium, price will be OP and quantity sold will be OQ. At OQ, firm's average revenue is more than average cost so the profit per unit is AB and total profit is ABCP.

Advantage of Monopoly:

1. No risk of over production under monopoly.
2. In monopoly, resources are efficiently utilized.
3. It encourages innovation.

Disadvantages of Monopoly:

1. There is exploitation of consumers because of higher price.
2. Choices for the consumers are limited.
3. It is difficult to control over head costs.

Kinds / Types of Monopoly:

1) **Perfect Monopoly:**

It is also called as **absolute monopoly**. In this case, there is only a single seller of product having no close substitute; not even remote one. There is absolutely zero level of competition. Such monopoly is practically very rare.

2) **Imperfect Monopoly:**

It is also called as **relative monopoly** or simple or limited monopoly. It refers to a single seller market having no close substitute. It means in this

market, a product may have a remote substitute. So, there is fear of competition to some extent e.g. Mobile (Cellphone) telecom industry (e.g. voda phone) is having competition from fixed landline phone service industry (e.g. BSNL).

NOTES

3) **Private Monopoly:**

When production is owned, controlled and managed by the individual, or private body or private organization, it is called private monopoly. E.g. Tata, Reliance, Bajaj, etc. groups in India. Such type of monopoly is profit oriented.

4) **Public Monopoly:**

When production is owned, controlled and managed by government, it is called public monopoly. It is welfare and service oriented. So, it is also called as 'Welfare Monopoly' e.g. Railways, Defense, etc.

5) **Simple Monopoly:**

Simple monopoly firm charges a uniform price or single price to all the customers. He operates in a single market.

6) **Discriminating Monopoly:**

Such a monopoly firm charges different price to different customers for the same product. It prevails in more than one market.

7) **Legal Monopoly:**

When monopoly exists on account of trademarks, patents, copy rights, statutory regulation of government etc., it is called legal monopoly. Music industry is an example of legal monopoly.

8) **Natural Monopoly:**

It emerges as a result of natural advantages like good location, abundant mineral resources, etc. e.g. Gulf countries are having monopoly in crude oil exploration activities because they have plenty of natural oil resources.

9) **Technological Monopoly:**

It emerges as a result of economies of large scale production, use of capital goods, new production methods, etc. It includes engineering goods industry, automobile industry, software industry, etc.

10) **Joint Monopoly:**

A number of business firms acquire monopoly position through amalgamation, cartels, syndicates, etc, it becomes joint monopoly. e.g. Actually, pizza making firm and burger making firm are competitors of each other in fast food industry. When they combine their businesses it may reduce the competition. So they can enjoy monopoly power in market.

Check Your Progress

1. Define the Market?
2. What is Market Structure?
3. Briefly define Perfect Competition?

NOTES

DIFFERENCE BETWEEN PERFECT COMPETITION & MONOPOLY

Basis of Difference	Perfect Competition	Monopoly
1. Number of Sellers and Producers	The large number of sellers and producers is present.	There is only single seller or producer of a product.
2. Entry and Exit of firms	New firms can easily enter into the market and exiting firms can leave the market.	Entry and exit of firms are restricted.
3. Substitutes of commodity	There are many substitutes of commodity available in the market.	No close substitutes are present in the market.

PRICE DISCRIMINATION:

Price-discrimination exists when a producer charges different prices from different consumers for the same product.

Consider the following example: A vegetable vender charges higher price from the rich people as compared to the poor people even though the needs are the same or he charges more for posh locality buyers than other locations.

The above case is the example of price discrimination, Price-discrimination occurs when a producer sells a specific commodity to different buyers at two or more different price.

According to Joan Robinson, "The act of selling the same article, product under a single control, at different prices to different buyers is known as price discrimination."

According to Prof. Benham, "Monopolist may be able, however, to divide his sales among a number of different markets and to charge a different price in each market."

Kinds of Price -discrimination:

Prof. A. C. Pigou explains following to three kinds of price-discrimination:

1. **First Degree Price Discrimination:** In first degree price-discrimination, the producer exploits the consumers to the maximum possible extent by asking him to pay maximum for the commodity. In this case, the seller of a product is concerned with the maximum willingness of each customer to pay. This type of discrimination is known as **perfect discrimination**. This type of market does not exist much in reality.
2. **Second Degree Price-discrimination:** In second degree price-discrimination, the monopolist charges different prices for different units of the same product. In this case, price varies according to the quantity sold. Quantities sold in bulk are cheaper than quantity sold singly. This is done to keep consumers satisfied and prevent the entry of potential rivals.

3. **Third Degree Price-discrimination:** In this type of price discrimination, the markets are divided into many sub markets or sub groups. The price charged in this case, depends upon the willingness to pay by different sub groups in the market.

Objectives or Causes of Price-discrimination:

Following are the important causes of Price-discrimination:

i. To charge different prices from different consumers according to their willingness to pay i.e. charge higher price from rich buyers and lower price from poor buyers.

ii. To charge different price from different consumers on the basis of their geographical condition i.e. charge higher price from the consumers who are far away from the place of production and charge lower price from the consumers who are near to the place of production.

iii. To earn maximum profits through maximum sales.

iv. To discourage new firms from entering into the market.

CONDITIONS FOR PRICE-DISCRIMINATION:

Price discrimination is possible only under the following conditions:

1. **Existence of Imperfect Market:** Price discrimination is possible only when the market is imperfect. Under perfect condition, there is no scope for price-discrimination because the buyers and sellers have full knowledge of market.

2. **Difference in Demands:** Price discrimination can be successful only when there is a difference in the demand of a product in different markets. Different prices can be charged in the different markets based on difference in elasticity of demand.

3. **Geographical & Tariff barriers:** Price discrimination can be adopted when there is a difference in geographical location of buyers.

4. **Difference in purchasing power of buyers:** Price discrimination can be adopted successfully when there is a difference in the purchasing power of buyers. Price charged from the rich persons is more than that from the poor persons.

5. **Irrational Feelings of Buyers:** It is the general observation that higher priced commodity is better than the lower priced commodity. A monopolist can get the advantage of the feelings of buyers and they may discrimination the price of a commodity.

6. **Ignorance of Buyers:** Buyers do not have the perfect knowledge of price – discrimination. Sellers may charge different price to different consumers, depending upon the intensity of their demand for the product.

IMPERFECT COMPETITION:

Perfect Competition and perfect monopoly, both are imaginary states of market. In practical life no market is perfectly monopolistic. Therefore, Mrs. John Robinson introduced the term imperfect competition.

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It is the state of market in which all the essential elements of perfect competition are not present.

According to Prof. A. P. Lerner, "Imperfect competition obtains when the seller is confronted with a falling demand curve for his product."

According to R.F. Kahn, "Competition is imperfect if the demand for the individual firm's product is not perfectly elastic."

Thus, imperfect competition is a state of market between perfect competition and monopoly.

Characteristics of Imperfect Competition:

1. **Ignorance of Buyers & Sellers:** If buyers and sellers do not have perfect knowledge about market conditions, it creates imperfect competition.
2. **Product Differentiation:** Product differentiation is the most important factor causing imperfect competition. In real life, products of two different producers are never perfectly identical. This creates the state of imperfect competition because the consumers appear more inclined to a particular product.
3. **High Transportation Cost:** High cost of transportation also cause imperfect competition. It increases the cost of distribution.

PRODUCT DIFFERENTIATION:

Product Differentiation may be defined as anything that causes a buyer to prefer one product to another. Due to product differentiation, the producer has freedom to determine the price of commodity. He has some degree of monopoly power. He has to face the keen competition of close-substitutes which are offered by the other firms. The major sources of product differentiation are as follows:

i. Difference in quality of the product.

ii. Difference in functional features or designs of the product.

iii. Difference in brand names and packaging.

Product differentiation means that goods are close substitutes but are not homogeneous. They differ in color, name, packing, size, quality etc. These products are close substitutes, but at the same time they differ from one another.

Main features of product differentiation:

1) Because of product differentiation, goods are not homogeneous as in perfect competition Product differentiation is a real situation of the market. These goods are close substitutes.
2) Product differentiation may be both real and artificial. Under product differentiation, producer gets the name or brand of his product legally patented it means that producer alone has the legal monopoly of producing the patented product under the given name, design etc. For example, maruti udyog limited alone can produce maruti cars, Remington. Electronic Typewriter. These firms get the trademarks of their products registered. No others firm can use that mark on its product. However, it can produce close-substitute under another trade mark and thus complete with other sister firms.

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3) Aim of product differentiation is to control price and increase profit. Product differentiation may increase average cost.

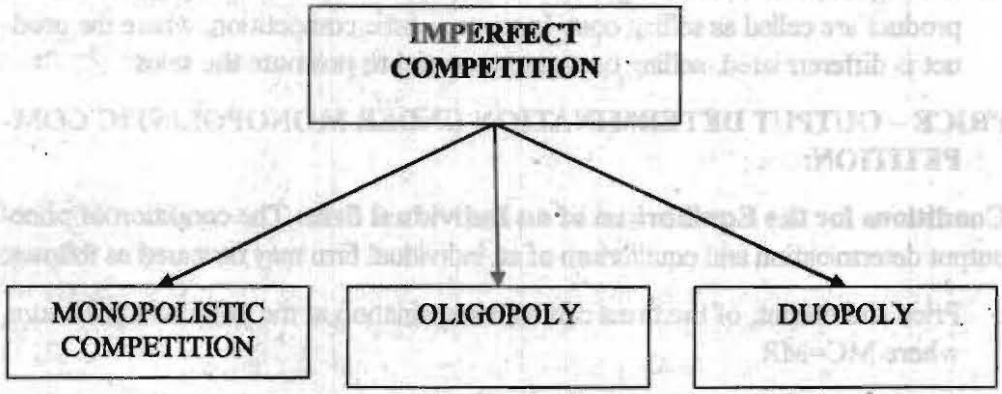
4) According to Chamberlin, product differentiation satisfies peoples urge for variety. Hence it becomes necessary to pay a little higher price.

Definition of Product Differentiation:

"A general class of product is differentiated if only sufficient basis exists for distinguishing the goods (or services) of one dealer from those of another. Such a basis may be real or fancied, as long as it is of any importance whatever to buyers and leads to a preference for any variety of the product over another".

Examples of product Differentiation: Like, cibaca, colgate, choice etc. Similarly in soft-drinks such as campa cola, Thumsup, Limca etc. So from above example, this is clear that product differentiation means that goods are close substitutes but are not homogeneous.

FORMS OF IMPERFECT COMPITITION:



1. MONOPOLISTIC COMPETITION:

It is a market structure in which many sellers produce and sell similar but slightly differentiated products which are close, but not perfect substitutes for one another.

According to John S. Bain, "Monopolistic competition is found in the industry where there are a large number of sellers selling differentiated but close substitutes products."

According to H.H. Liebhafsky, "Monopolistic competition has today come to mean a state of affairs in which there is a large number of sellers selling non-homogeneous or slightly differentiated products and where freedom of entry exists."

A number of examples may be given for this kind of market like market for soaps and detergents. Since all the soaps are almost similar, this appears to be the example of perfect competition. But on a close inspection we find that each seller has at least some variation between his product and those of his competitions. For example, lux is exhibited as beauty soap, Dettol soap is placed as antiseptic and so on. The area of product differentiation gives each seller a chance to attract business to himself on some basis other than the price. This is the monopolistic part of market-situation.

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CHARACTERISTICS / FEATURES OF MONOPOLISTIC COMPETITION

1. **Large number of sellers:** In a monopolistically competition market, there are large number of sellers in the market. Each seller will act independently without being concerned about the policies followed by other sellers.
2. **Product Differentiation:** The product of each firm is different from that of other firms. This difference may be in the quality, size, color etc..
3. **Freedom of Entry & Exit of Firms:** There is no restriction for the entry and exit of firms in the market. New firms are free to enter into the market and existing firms are free to leave the market at any time.
4. **Non-Price Competition:** In a monopolistically competition market, sellers try to compete on the basis other than price. For example aggressive advertising, product development, better distribution arrangement and so on. A key base of non-price competition is the deliberate policy of product differentiation.
5. **Selling Cost:** All those expenses which are incurred on sales promotion of a product are called as selling cost. In monopolistic competition, where the product is differentiated, selling costs are essential to promote the sales.

PRICE – OUTPUT DETERMINATION UNDER MONOPOLISTIC COMPETITION:

Conditions for the Equilibrium of an Individual firm: The condition of price-output determination and equilibrium of an individual firm may be stated as follows:

i. Price and output, of the firms can be determination at the point of equilibrium, where MC=MR

ii. In monopolistic competition, average revenue curve (AR) slopes downwards. It means that if a monopolistically competitive firm wants to sell more quantity of its product, it will have to reduce the price of its product.

iii. In monopolistic competition, firms do not depend only upon price competition but also adopt non-price competition.

Equilibrium of a Firm under Monopolistic Competition during Short-Run:

In short run, a firm may make abnormal profits, normal profits or may suffer losses. If the demand of the product is so high and there is no close substitute of its product, the firm may earn abnormal profits by charging higher prices of its products. If the demand of its product is not so high, the firm may earn only normal profits. Normal profits are those which are just sufficient to induce the firms to stay in the business. If the demand its product is poor, the firm may have to suffer losses. These three situations can be explained as follows:

1. **Abnormal Profits:**

   In the figure, marginal cost curve intersects marginal revenue curve at point E. E is the point of equilibrium, where price and output of the product is determined. At E, the equilibrium price is OP and equilibrium output is OQ. Since AR is more than ATC and

AR - ATC = PABC. This will be the abnormal profit of the firm.

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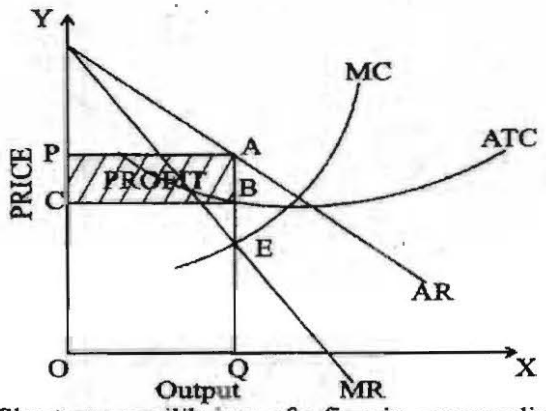
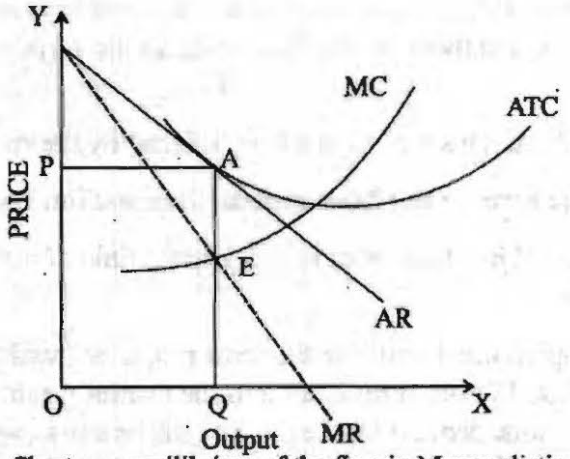


Short-run equilibrium of a firm in monopolistic Competition : Abnormal Profit

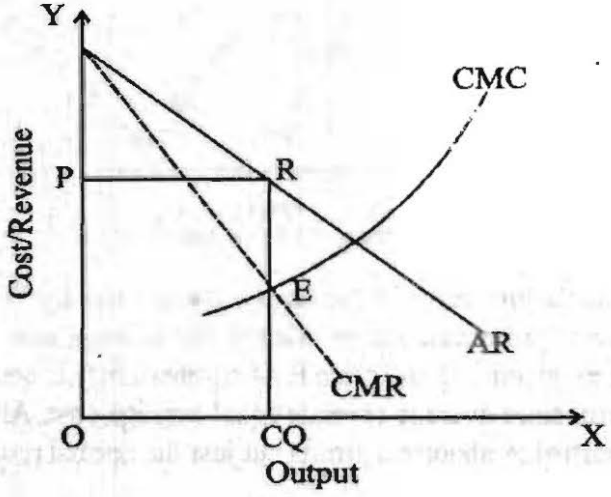
2. Normal Profits:



Short-run equilibrium of the firm in Monopolistic Competition - Norma Profit

In this figure, E is the equilibrium point for the determination of price and output of the product. At this point, AC is equal to AR; therefore, the firm can earn only normal profits.

3. Losses:



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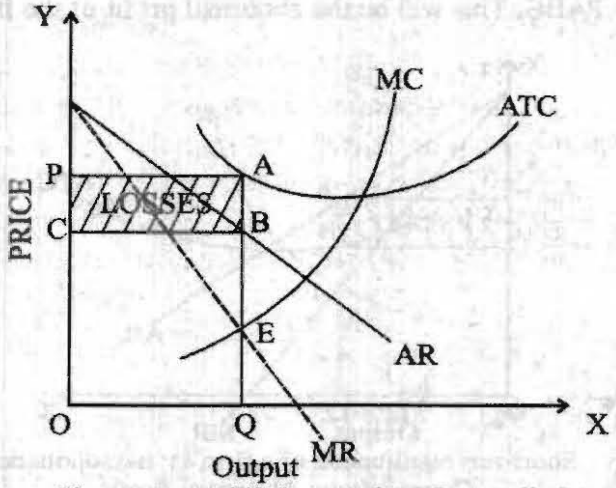


Short-run equilibrium under Monopolistic Competition - Losses

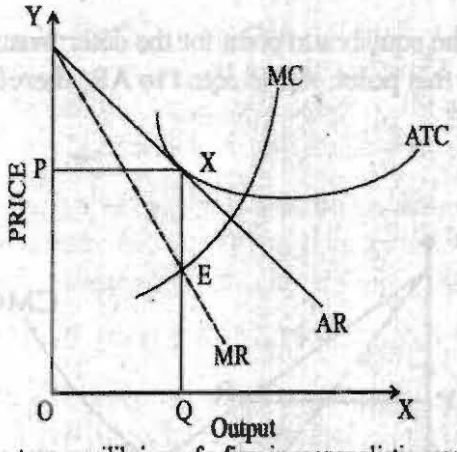
The figure shows a situation where the firm is not able to cover its short run average unit cost, and therefore the firm incurs losses. At point E, ATC is more than AR.

AC - AR = BPCA. This will be the loss suffered by the firm.

Equilibrium of the Firm under Monopolistic competition During Long Run:

Long-run is the period in which firms have adequate time to make changes in the production process.

If the firm earns supernormal profits in the short run, it motivates the new firms to enter into the market. If more firms enter into the market, profits per firm will go on decreasing as the total demand for the product will be shared with the other firms Thus, in the long-run all the firms will earn only normal profits.



The Long-term equilibrium of a firm in monopolistic competition

The figure shows the long-run equilibrium of a firm in a monopolistically competitive market. The average revenue curve touches the average cost curve at point X corresponding to quantity Q and price P. At equilibrium (i.e. MC=MR), profits of the firm are zero, since average revenue equal average cost. All firms are neither earning supernormal or abnormal profits but just the normal profits.

NOTES

OLIGOPOLY:

Oligopoly is a type of imperfect competition. Oligopoly is often described as 'competition among the few'. In other words, when there are few (two to ten) sellers in a market selling homogeneous or differentiated products, oligopoly is said to exist. Under oligopoly, few large firms compete against each other and there is interdependence in decision-making of these firms. Any decision taken by one firm (like on price, product or promotion) will affect the trade of its competitors.

According to George T. Stigler, "Oligopoly is the situation in which a firm bases its market policy in part on the expected behaviour of a few close rivals."

Characteristics of oligopoly market:

1. **Interdependence:** This is the most important feature of oligopoly market. Interdependence in the decision-making implies that the decision taken by one firm will affect the decisions of other competitive firms. Since the numbers of firms are very few, any change in price, product etc by one firm will directly affect the policy of other firms. It is, therefore, clear that an oligopolistic firm consider not only the demand of the product but also what strategy has been chosen by other competition firms.
2. **Importance of Selling Costs:** There is a great importance of advertising and selling costs in an oligopoly market, because of direct impact of interdependence of oligopolists. The various firms have to employ various aggressive and defensive marketing, strategies to get maximum share in the market or to maintain their share. For this purpose, firms have to expand costs on advertising and other measures of sales promotion.
3. **Group Behavior:** The theory of oligopoly is a theory of group behavior & not of individual behavior. Each firm closely watches the business behavior of the other firms and designs its moves accordingly.
4. **Indeterminate Demand Curve:** Due to interdependence of the firms in oligopoly and the difficulty to predict the behavior of other firms, the demand curve for the product in oligopoly loses its definiteness and determinateness. Prof. Sweezy explains it as a **kinked Demand Curve.**
5. **Competition & Combination:** In oligopoly, there may be fierce, cruel and cutthroat competition among the firms. Therefore, the firms may work out some policy of collusion to avoid harmful competition.

PRICE OUTPUT DETERMINATION UNDER OLIGOPOLY:

There is no definite theory of price-output determination under oligopoly. Due to interdependence, an oligopolistic firm cannot assume that its competitors will keep their prices and quantity constant, when it changes its price or quantity. Therefore an oligopolistic firm cannot have sure and certain demand curve. When an oligopolistic is not sure about its demand curve, the price and output to be fixed cannot be ascertained by economic analysis.

Different economists have made different assumption about the oligopolistic firms and they assumed different behavior patterns of firms accordingly. Different behavior patterns may be as follows:

NOTES

1) Rivals may decide to co-operate in the pursuit of their objectives.

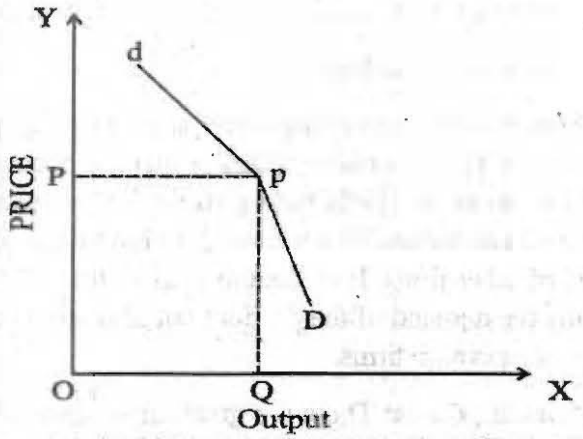
2) Rivals may fight with each other to increase the market share.

The different models of price determination in oligopoly are as follows:

i. Non-collusive oligopoly market of Sweezy. (Kinked demand curve)

ii. Collusive Oligopoly Model.

KINDED DEMAND CURVE:



Kinked Demand Curve Under Oligopoly

It has been observed that in many oligopolistic industries, prices remain sticky or inflexible for a long time. If any firm reduces the price of its product, its competitors will also reduce the price of their products. As a result, firm will not get any benefit of price reduction and ultimately the firm will suffer a loss of revenue. If the firm increases the price of its product, its competitors will leave their price constant, the firm will again suffer loss. In both the conditions, oligopolists will suffer losses.

The demand curve facing an oligopolist, according to the kinked demand curve hypothesis, has a 'kink' at the level of the existing price. This kink is formed at the existing price level, because the segment of the demand curve, above the existing price level is highly elastic and the segment of the demand curve below the existing price level is inelastic.

A kinked demand curve dD with a kink at point P is shown in figure. The existing price level is QP and the firm produces and sells output OQ. Now the upper segment dP of the demand curve dD is relatively elastic and lower segment PD is relatively inelastic. This is because, when an oligopolistic reduces the price of its product its competitions will feel that if they do not follow the same strategy of price-reduction, their customers will leave them and they will go to buy the product, where they will get better price. Thus the upper portion of the demand curve is price elastic. On the other hand, if the firm increases the price of the product, there will be the substantial reduction in its sales. Therefore, the oligopolistic that raises its price will lose many customers. This behaviour of the oligopolists defines the inelastic lower portion of the demand curve, so each oligopolistic will have to stick on the existing price because there is no gain in changing it.

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Criticism of kinked demand curve:

The kinked demand curve is criticized on the following grounds:

i. There is no proper explanation about how existing price is determined.

ii. According to kinked demand curve hypothesis, the price is more likely to remain stable. But the price does not remain stable during the time of increasing demand.

iii. It only explains price rigidity in oligopoly.

PRICING UNDER COLLUSION (Collusive Oligopoly):

The terms collusion refers to "play together" in economics. It means that the firms co-operate with each other. Collusion may be based on either oral or written agreements. When firms enter into collusive agreement, collusive oligopoly comes into existence. There are two types of collusion:

1. Perfect Collusion (Cartels)
2. Imperfect Collusion (Price Leadership)

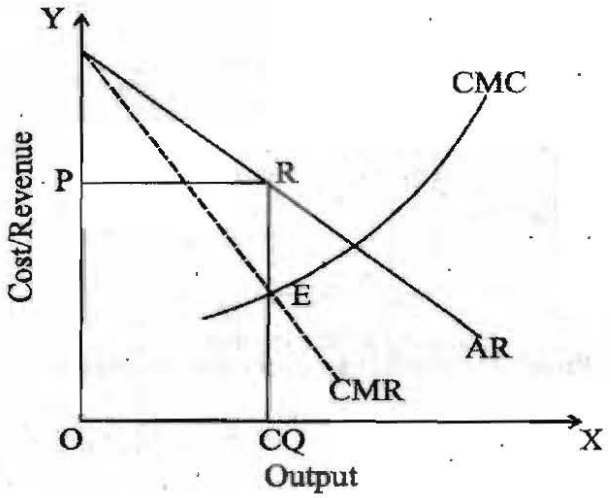
1. PERFECT COLLUSION (CARTELS):

Collusion based on written agreement is known as perfect collusion (cartels). A cartel is an explicit agreement among independent firms. This agreement is based on price, output, market-sharing etc. There are only two types of cartels:

i. Centralized Cartels, and

ii. Market Sharing Cartels

i. **Centralized Cartels:** Under centralized cartel system, the price and output decisions for the whole industry as well as every firm are taken by the central authority. A centralized or perfect cartel is an arrangement where the firms make an agreement which aims at maximizing the joint profits. The cartel board establishes the output quota of each member firm. The total profits are distributed among the various firms (which are under agreement) according to the prior agreement. Under this type of cartel price and output of the industry can be determined in such a way that the total cost of production remains minimum.



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The price-output determination is illustrated in the given figure:

In this figure, AR and CMR are the average revenue curve and combined marginal revenue curve, CMC is the combined marginal cost curve. At equilibrium point, where CMC curve intersects CMR curve, equilibrium quantity or output is CQ & the equilibrium price is OP.

Each firm should produce that much of output at which MC of each firm is equal to the MC of total output.

ii. **Market sharing Cartel:** There can be two methods of market sharing:

a. **Market sharing by Non-Price Competition:** In this method, firms agree to sell a product at an agreed uniform price. But all the member firms are free to produce and sell that quantity at which they get maximum profits. Firms are also free to renovate or change the design of their product and change in method of production to enhance the sales but price should remain constant.

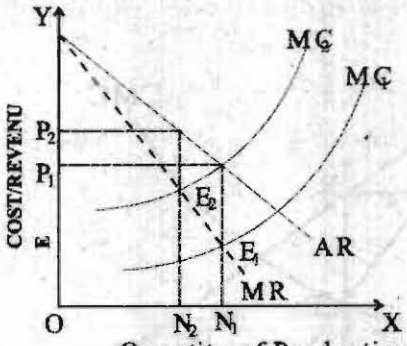
b. **Market sharing by Quota:** The oligopolistic firms may agree not only to sell at a uniform price but also about the output produced by each firm. The price and output quota of each firm is determined in such a way that the joint profits are maximum.

In case of the centralized cartel, price, output, sales and distribution of profit is determined by central authority but in market sharing cartel, firms forming cartel would agree on the market shares, with or without any common understanding on prices.

2. IMPERFECT COLLUSION (PRICE LEADERSHIP):

In this case, a particular strong firm which is enjoying the benefits of large scale production will dominate the small firms. The price is determined by the dominating firm. Hence, the dominating firm becomes the Price Leader. The other firms in the industry have to follow the price-leader and accept the price, which is established by him. Firms adjust their output according to this price.

Price Determination under price leadership can be illustrated with the help of following diagram:



Quantity of Production

Price - Determination under Price-Leadership

NOTES

In this diagram, quantity of production is presented on X axis and cost and revenue on Y axis. Suppose there are two firms A & B, all the firms face identical average revenue and marginal revenue curves but they have different marginal cost curves i.e. MC_1 and MC_2. MR curve intersects MC curve at E_1 and E_2. Firm A will produce ON_1 output and sell it at OP, price. Firm B will produce ON_2 quantity and sell it at OP_2 price. Since marginal cost curve of firm A is less than marginal cost curve of firm B. It is clear that firm A will be the price leader. Therefore firm A will determine the price of the product and firm B will have to follow that price. Both the firms will sell the product at uniform price (OP_1).

ADVANTAGES OF PRICE LEADERSHIP:

1. It helps the small firms in formulation of their price policy.
2. It is a simple and economical method of pricing because it does not involve any calculations and any expenses on market survey etc for the determination of price.
3. It ensures stability in the market by avoiding price-war.

DUOPOLY

Duopoly is a market structure where two sellers exercising control over the supply of products.

According to Cohen & Cyret, "When there are exactly two sellers in the market, there is a special case of oligopoly called Duopoly".

In duopoly, each firm knows about the price policy or any other policy of the rival firm. He knows that whatever he does, it will directly affect the policy of another firm. Generally, they control the supply of commodity through mutual understanding and agreement. There can be two types of duopoly:

i. Duopoly with homogeneous product, and

ii. Duopoly with product differentiation

Price Determination under Duopoly with Homogeneous Product:

Under this form of duopoly, both the producers produce identical products. Generally there is collusion between these two firms. This collusion may be to establish price of the product or to assign quotas. Therefore, it creates the condition of monopoly and price is determined as in case of monopoly.

Price Determination under Duopoly with Product Differentiation:

If there is product differentiation, firms are free to determine the price of its product. There is no price war between the firms. The firm with better product may earn more profits.

DIFFERENCE BETWEEN PERFECT AND IMPERFECT COMPETITION

Check Your Progress

4. What is monopoly?
5. Define Imperfect Competition?

NOTES

Basis of Difference	Perfect Competition	Imperfect Competition
1. Number of Buyers and sellers	There are large number of buyers and seller of a commodity.	There are large number of buyers and sellers of a commodity but comparatively lesser than perfect competition.
2. Entry or exit of firms	There is no restriction upon the entry or exit of firms.	Entry or exit of firms is difficult but not restricted.
3. Product	Product of all the sellers is homogeneous.	Product of all the sellers is different but sometimes it may be homogeneous.
5. Mobility	All the buyers and sellers are perfectly mobile.	There are many obstacles in the mobility of buyers.
5. Knowledge of market conditions	Both the buyers and sellers have perfect knowledge of market.	Buyers and sellers have imperfect knowledge of market conditions.

DIFFERENCE BETWEEN PERFECT COMPETITION & MONOPOLISTIC COMPETITION:

Basis of Difference	Perfect Competition	Monopolistic competition
1. Type of Product	Products are homogeneous	Products are differentiated.
2. Price of the product	All the sellers and producers sell their product at uniform price.	All the sellers and producers are free to sell their product at any price.
3. Knowledge of market	Buyers and sellers have perfect knowledge of market.	Buyers and sellers have imperfect knowledge of market.

DIFFERENCE BETWEEN MONOPOLY & OLIGOPOLY

Basis of Difference	Monopoly	Oligopoly
1. Number of sellers	There is a single seller or producer of a product.	There are few but more than two sellers or producers of a product.
2. Product Differentiation	There is no product differentiation.	There is possibility of product differentiation.
3. Advertisements and sales promotion activities	These activities do not play any role in monopoly market.	These activities are very important for enhaneing sales in oligopoly market.

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PETITION

Basis of Difference	Monopoly	Monopolistic Competition
1. Number of sellers	There is only a single seller or producer of a product.	There is large number of sellers or producers of a product.
2. Substitutes of Product	There is no close substitute of a product.	There are many close substitutes of a product.
3. Advertising Expenses	In monopoly, there is no need of advertising.	In monopolistic competition, aggressive advertising is required.
4. Entry and exit of firms	New firms cannot enter into the market.	There is free entry and exit of firms.

DIFFERENCE BETWEEN MONOPOLY & DUOPOLY

Basis of Difference	Monopoly	Duopoly
1. Number of sellers	There is only single provider of a product.	There are two sellers of a product.
2. Product Differentiation	There is no product-differentiation.	In duopoly, the product of both the sellers is same but in some cases, it may be different.
3. Price of the product	The monopolist may adopt single price or price discrimination for the product.	Both the sellers, adopt uniform price but sometime they may adopt different prices if the products are different.

CASE STUDY:

Market Structure

DHC worked with a client that is the leading competitor in a category that has a significant presence at retail checkout as well as in the center of the store. The category consists of products with limited shelf life and requires a great deal of planning, coordination and retail management to optimize category performance. The company goes to market through a DSD distribution system operated by a nationwide network of third-party specialty wholesalers. In addition to managing the flow of product to and through the wholesalers, the company also executes a traditional CPG-style selling effort directed at retailers at both the headquarters and retail store levels. As an overlay to the DSD coverage provided by the wholesalers,

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the company employs brokers to provide [illegible]
volume retail outlets.

The existing go-to-market approach was broken. Evidence of this included lack of alignment and coordination among the client and the wholesalers resulting in missed business opportunities and unstable profit margins for the wholesalers that could potentially destroy the category value chain as it existed, thereby severely limiting the client's go-to-market options.

The client decided to reinvent its go-to-market model, the objectives of which included:

- Reduce costs and increase category volume through better alignment among the client, wholesale and retail levels of the category value chain.
- Install improved processes (VMI and POS-based store replenishment) for managing store level inventory to drive sales while reducing the expense of out-of-date product at retail.
- how to Increase in-store merchandising activity on peak sale days.
- What are Roll out the new model with minimal business interruption.\

SUMMARY:

- The term "market" refers to a particulars place where the buyers and sellers come into contact with each other and goods and services are exchanged against the price consideration between the buyers and sellers.
- Market structure refers to the features of a market, which affect the behavior and working of firms.
- Perfect competition is a market structure in which the number of buyers and sellers and very large and all are engaged in buying and selling a homogeneous product.
- Pure competition is a part of perfect competition. In a purely competitive market, marketing research, product development, pricing, advertising, and sales promotion play little or no role.
- Imperfect competition is a state of market in which all the essentials of perfect competition are absent.
- Monopolistic competition is a market structure in which a large number of sellers sell differentiated products, which are close but not perfect substitutes one another, to many buyers.

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- Duopoly is a market with two sellers exercising control over the supply of commodities and they compete with each other.
- Oligopoly is a market in which few sellers compete with each other producing either a homogeneous product or differentiated product for many buyers.
- Monopoly is the market condition in which we have only one provider of a particular product. Its product is completely different i.e. it has no close substitutes.
- Perfect Monopoly is also called as absolute monopoly. In this case, there is only a single seller of product having no close substitute; not even remote one. There is absolutely zero level of competition.
- Imperfect Monopoly is also called as relative monopoly or simple or limited monopoly. It refers to a single seller market having no close substitute.
- Private Monopoly is the state of market when production is owned, controlled and managed by the individual, or private body or private organization, it is called private monopoly.
- Public Monopoly is the sate of market when production is owned, controlled and managed by government, it is called public monopoly.
- Price-discrimination exists when a producer charges different prices from different consumers for the same product.
- Product Differentiation may be defined as anything that causes a buyer to prefer one product to another.

ANSWERS TO 'CHECK YOUR PROGRESS'

1. **According to Prof. R. Chapman:** "The term market refers not necessarily to a place but always to a commodity and the buyers & sellers who are in direct competition with one another."
2. **According to Pappas & Hinchey:** "Market structure refers to the number and size distribution of buyers and sellers in the market for a goods or service."
3. **According to A. Koutsoyiannis:** "Perfect competition is a market structure characterized by a complete absence of rivalry among the individual firms."
4. Monopoly is the market situation in which there is only one seller of a product. The product has no close substitutes.
5. **According to Prof. A. P. Lerner,** "Imperfect competition obtains when the seller is confronted with a falling demand curve for his product."

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TEST YOURSELF :

Long Questions:

1) Explain the meaning and characteristics of market.
2) Describe the types and features of market structure.
3) What is perfect competition? Explain its characteristics.
4) What is meant by Pure Competition and differentiate it with Perfect competition.
5) Explain the determination of price under perfect competition.
6) Explain the meaning and characteristics of Monopoly. Explain various types of Monopoly.
7) How is the price determined under monopoly?
8) Explain the meaning and kinds of Price Discrimination.
9) Define Imperfect Competition. Explain its characteristics and different forms.
10) Define Monopolistic Competition and explain its characteristics.
11) Explain the short-run and long-run equilibrium of a firm under monopolistic competition.
12) Define Oligopoly and explain price determination under oligopoly.
13) What is Duopoly? How is the price determined under Duopoly?

Short Questions:

1) Define the term Market.
2) What do you mean by market structure?
3) What is Product Differentiation?
4) Differentiate between Monopoly and Oligopoly.

FURTHER READING

- Managerial Economics: P.L.Mehta
- Raj Kumar Gupta
- K.N. Devadi

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7 CONCEPT OF COST AND REVENUE

The Chapter Covers :

- Concept of COST:
- RELATION BETWEEN ATC, AFC & AVC:
- RELATION BETWEEN AVERAGE COST & MARGINAL COST:
- CONCEPT OF REVENUE

INTRODUCTION

Costs play a very important role in business decision making. Cost estimates are made in monetary terms. Cost calculations are indispensable for management decisions.

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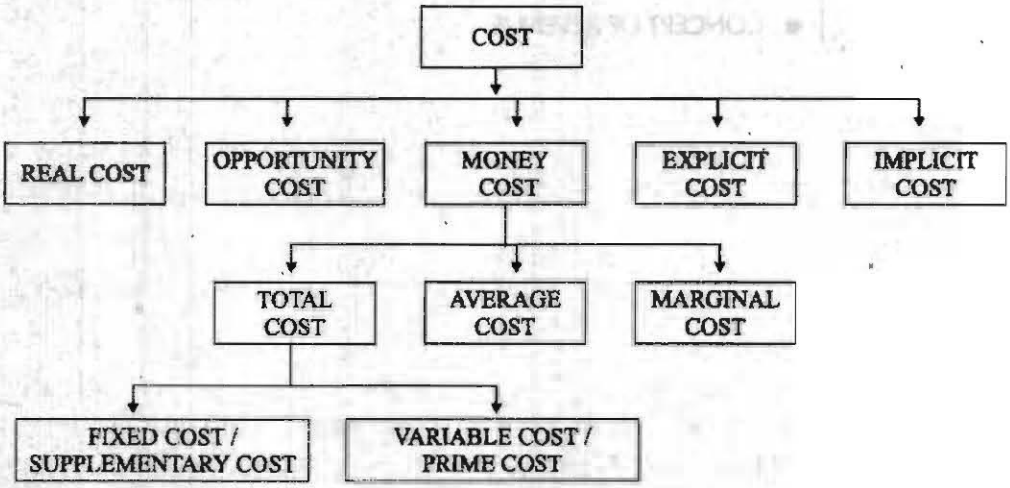
According to Institute of cost and work accounts (ICWA) India, Cost is 'measurement in monetary terms of the amount of resources used for the purpose of production of goods or rendering services.

In order to produce products, a firm requires raw-material, and other factors of production like land, labour etc. called 'Input'. The expenditure incurred on these inputs is called 'Cost of Production'. On the basis of 'Cost of production', the firm decides how much quantity of the product it has to produce or supply. In Economics, the terms 'Cost' is used in many ways such as, (i) Real Cost, (ii) Opportunity Cost (iii) Money Cost (iv) Explicit Cost, (v) Implicit Cost.



1. REAL COST:

The concept of real cost was introduced by classical economists. According to the classical economists, real cost refers to those payments which are made to compensate the efforts, pains, exertion and discomfort of the employees.

According of Prof. Marshall, "The exertion of all the different kinds of labour that are directly or indirectly involved in making a commodity together with the abstinence or rather the waiting required for saving the capital used in making it. All those efforts and sacrifices together will be called the real cost of production of commodity"

In other words, we can conclude it as follows :

Real Cost = Efforts, pains and exertions of labour + wait and distinence of entrepreneurs

2. OPPORTUNITY COST:

Opportunity Cost of a commodity is measured in terms of revenue that could have been earned by employing that commodity in some other alternative uses. In other words, opportunity cost is the loss of income due to rejected opportunities. Hence, opportunity cost of commodity is the costs of sacrificed alternatives. They are also called as **alternative costs**. For example, a firm has two alternatives to produce; it may produce product A or product B. If firm chooses to produce the product A, it has to sacrifice the production of product B. It

implies that opportunity cost of anything is the alternative earning that has been lost.

According to Mrs. John Robinson, "The cost of any unit of factor, from the point of view of one industry is therefore determined by the reward which that unit can earn in some other industry."

According to Benham, "The amount of money which any particular unit could earn in its best paid alternative use is sometimes called its transfer earning."

Thus, 'Opportunity cost is the opportunity lost or opportunity foregone in terms of the next best alternative use of a product. Opportunity cost of a product is also called **"Transfer earning"** of a product.

3. MONEY COST:

All the expenses which are incurred for the production of a commodity in monetary terms like wages, value of raw-material, rent, packing etc are called money costs.

Thus, when cost of production is expressed in terms of money we call it as money cost.

According to J. L. Hanson, "The money cost of producing certain output of a commodity the sum of all the payments to the factors of production engaged in the production of that commodity.

Following are three variants of the money cost:

Short-Run

i. **Total Cost:** The total cost refers to the aggregate money expenditure incurred by a firm to produce a given quantity of output.

According to Dooley, "Total cost of production is the sum of all expenditure incurred in producing a given volume of output."

In short, total cost is the sum of total fixed cost and total variable cost.

$$TC = FTC + TVC$$

a. **Fixed or Supplementary Cost :** Fixed cost refers to the total money expense which are incurred on fixed factors of production like plant, machinery, tools and equipments in the short run. Total fixed cost remains same at all the levels of output. In other words, total fixed cost does not change with the change in volume of output.

It indicates that, whether the quantity of output is zero or maximum, fixed cost remains constant. These costs are also known as "supplementary cost", "general costs."

According to Anatol Murad, "Fixed costs are the costs which do not change with the change in the quantity of output."

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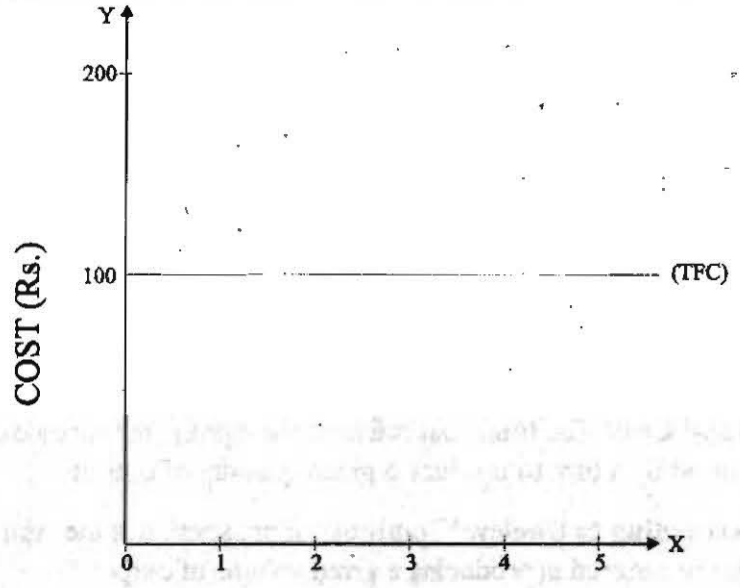
The concept of fixed costs can be explained as follows:

Unit of production	Total Fixed cost (Rs.)
0	100
1	100
2	100
3	100
4	100
5	100

Table indicates that F.C. remains fixed irrespective of the number of units of output. In the figure, units of production are shown on x-axis and fixed cost on Y-axis. TFC is the total fixed cost curve. This curve runs parallel to X-axis, it explains that fixed costs remain constant at all the level of production.



Units of Production

b. Variable Costs or Prime Costs: Total variable cost refers to the total money expenses which are incurred in the variable factors of production like cost of raw-material, wages of labors, cost of fuel etc. Variable factors of production are the factors that change with the change the level of in production. So, variable costs are the costs that change with the change in the level of production. When output changes these costs are also change. When output increases, these costs also increase and when output is zero these costs are also zero.

Variable costs are also knows as "Prime costs or direct costs".

According to Dooley, "Variable cost is one which varies as the level of output varies."

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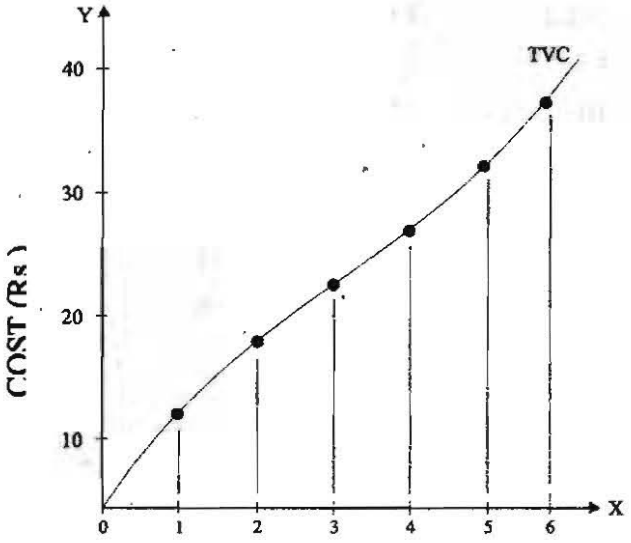
The concept of variable cost can be explained as follows:

Units of Production	Variable Cost
0	0
1	10
2	18
3	24
4	28
5	32
6	40



Units of production

The given table shows that as the output increases, variable cost also increases. When output is zero, variable cost is also zero. When output is one unit the variable cost is Rs. 10 and when it reaches 6th unit, the variable cost is Rs. 40.

In diagram units of production are shown on X - axis and variable cost on Y - axis. TVS is the total variable cost curve. TVC moves upwards to the right because variable cost increases as the output increases

Difference between fixed cost & variable cost

	Fixed Cost		Variable Cost
i.	Fixed cost does not vary with the variation in the output.	i.	Variable cost changes with the change in the level of output.
ii.	Fixed cost remains same, whether output is zero or maximum in the short-run.	ii.	Variable cost is zero when output is zero and when output increases variable cost also increases.
iii.	Examples are - (a) - cost of plant and machinery, salaries of	iii.	Examples are (a) - value of raw - materials, wages of

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employees, licence fee etc. | labours, expenses on electricity etc.

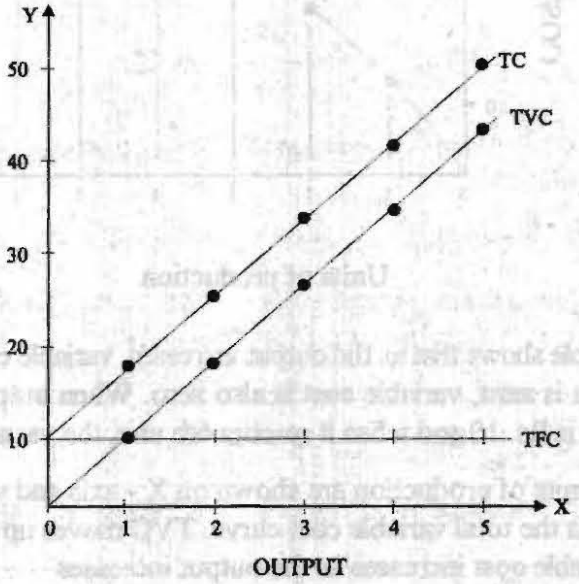
Relation between total, fixed & variable cost:

In short - run, aggregate of fixed cost and variable cost at different levels of output is called total costs.

According to Holland, "Short run total cost is equal to fixed costs plus variable costs.

These costs can be illustrated with the help of following table and diagram:

Output	Fixed Costs (Rs.)	Variable Costs (Rs.)	Total Costs (Rs.)
0	10	0	10
1	10	10	20
2	10	18	28
3	10	24	34
4	10	32	42
5	10	38	48



In the given table, total cost can be obtained by aggregating fixed cost and variable costs when output increases, total cost of a product also increases. When output is zero total cost is Rs. 10, due to fixed cost is Rs. 10.

In the given diagram, units of production are shown X - axis and cost on Y - axis. TFC represents total fixed cost curve. TVS is the total variable cost curve and TC is the total cost curve. TC curve starts from the starting point of FC curve. When output is zero, fixed cost is Rs. 10, so total cost is also Rs. 10. TC curve and VC curve increase with the increase in output but fixed cost curve remains constant. TC curve and TVC curve are parallel to each other because the difference between total cost and variable cost is uniform and it is equivalent to the fixed cost.

Average Cost: Average cost is obtained by dividing the total cost (TC) of the product by the total output (Q). Since total cost is the sum of total variable cost and total fixed cost, average total cost is also the sum of average variable cost and average fixed cost. Thus,

Average Total Cost = Average Fixed Cost + Average variable cost

$$\text{Or,} \qquad \text{Average Total Cost} = \frac{\text{Total Cost (F.C. + V.C.)}}{\text{Number of units produced}}$$

Suppose, fixed cost of producing 5 units of a commodity is Rs. 100 and variable cost 1000. Then average total cost of a commodity.

$$\text{Average Total Cost} = \frac{\text{Total Cost (F.C. + V.C.)}}{\text{Number of units produced}}$$

$$\text{ATC} = \frac{100 + 1000}{5}$$

$$\text{ATC} = \frac{1100}{5} = \text{Rs. } 220$$

According to Dooley, "The average total cost of production is the total cost per unit of output."

According to Ferguson, "Average total cost is total cost divided by output."

Average total cost is also known as the unit cost since it is the cost per unit of output produced. AC is the sum of AFC and AVC.

i. **Average Fixed Cost:** Average fixed cost is obtained by dividing the total fixed cost and number of units produced. Thus

Average Fixed Cost = Total Fixed Cost / Number of units produced

Concept of average fixed cost can be illustrated with the help of following table and diagram:

Unit Produced	Fixed Cost (Rs.)	Average Fixed Cost (Rs.)
1	10	10
2	10	5
3	10	3.333
4	10	2.5
5	10	2.0
6	10	1.666 = 1.7

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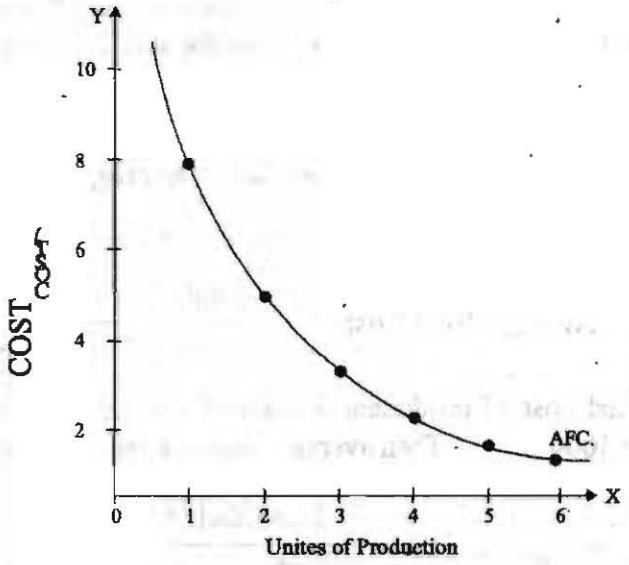

The table shows that when one unit is produced the average fixed cost is Rs. 10 and when 6 units are produced, then average fixed cost comes down to Rs. 1.7. AFC and output have inverse relationship. It is higher at lower level and lower at the higher level of output.

In the given diagram, AFC is the average fixed cost curve. Average fixed cost curve slopes downward to the right but never touches X - axis because average fixed cost can never be zero. Similarly, average fixed cost curve can never touch Y-axis because average fixed cost will always be a positive figure. AFC curve diminishes as the production increases.

Average variable Cost (AVC): Average variable cost is the total variable cost divided by the number of units produced. i.e.

$$AVC = \frac{TVC}{Q}$$

Where Q is the number of units produced. Thus average variable cost is variable cost per unit of output average variable cost can be explained with the help of following table and diagram:

Output	Variable-Cost	Average Variable Cost
1	10	10
2	18	9
3	24	8
4	28	7
5	32	6.4
6	36	6.0
7	49	7.0
8	56	8

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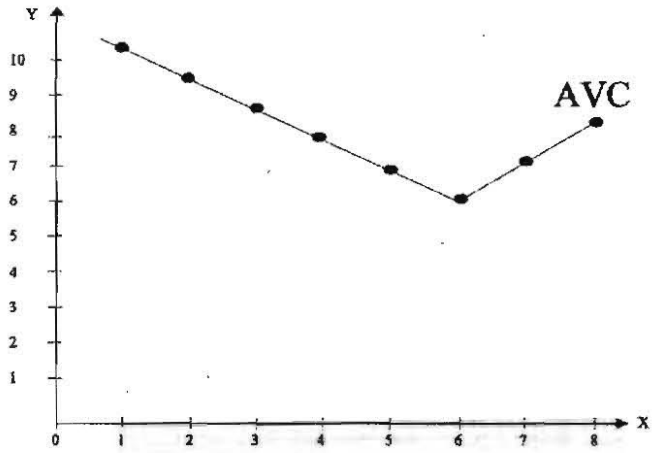

From the given table, it is clear that as the output increases, average variable cost decreases up to 6th unit, but from 7th unit average variable cost begins to rise. Average variable cost tends to decline at the initial stage of production because it follows the law of increasing returns. This law explains the situation where increase in production is more than the increase in inputs. It states that, average production shows an increasing trend and average cost of the product shows decreasing trend. Economics of division of labour and specialization, Improvement in the techniques of production, use of specialized machinery etc. are the causes for the operation of the law of increasing returns. When firm attains its full capacity, average variable cost begins to rise because law of diminishing returns is operated. (This law states that when the quantity of one factor of production is increased average and marginal production will decrease. Factors of production for one or more product is fixed, scarcity of productive resources etc are the causes of the operation of law of Diminishing returns).

RELATION BETWEEN ATC, AFC & AVC:

In short - period, ATC curve is a summation of AFC and AVC curves. The behaviour of average total cost curve depends upon the behaviour of average variable cost curve and average fixed cost curve.

Following graph shows that in the beginning, both AVC and AFC curves fall, therefore ATC curve will also fall in the beginning. Then AVC curve begins to rise, but AFC curve still falls & therefore ATC curve continues to fall. This is because during this stage, the fall in AFC curve is greater than the rise in the AVC curve but as output increases, the AVC also increases which is more than the fall in AFC. Therefore, ATC curve first falls, reaches it's minimum and then rises. Thus ATC curve is "U" shaped.

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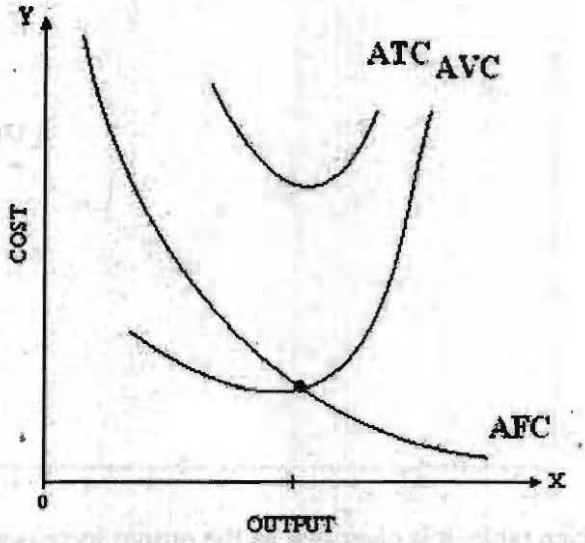


Marginal cost:

Marginal cost is the addition made to the total cost for production of an additional unit of output. In other words, marginal cost is the additional cost of producing an additional unit.

According to Ferguson, "Marginal cost is the addition to the total cost due to the addition of one unit of output."

$$\text{Marginal Cost} = \frac{\Delta TC}{\Delta Q}$$

Where, Δ TC = Change in total cost,

Δ Q = Change in output.

For example, if we are producing 5 units at a cost of Rs. 200 and suppose 6^{th} unit is produced then total cost would become Rs. 250, then marginal cost is

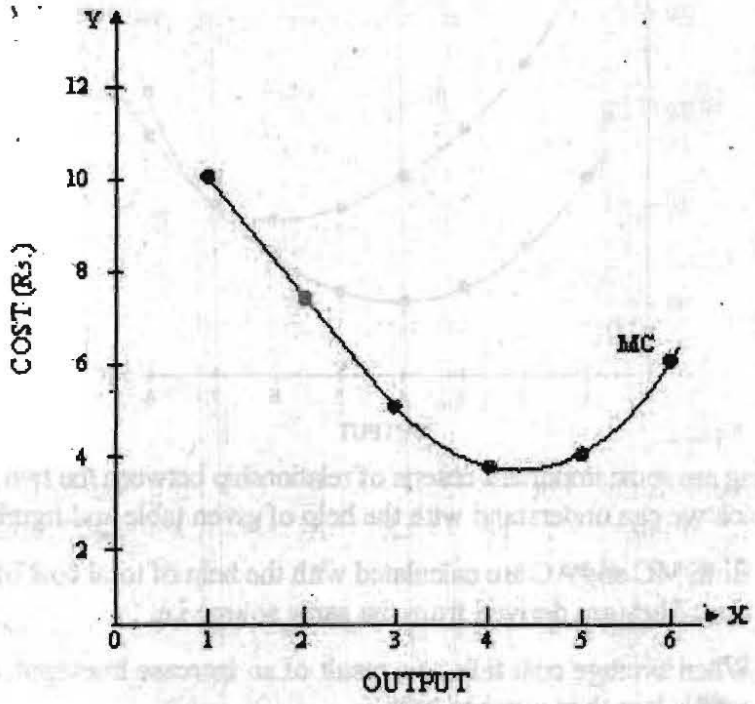
$$\text{Marginal Cost} = \frac{\Delta TC}{\Delta Q}$$

$$= \frac{250 - 200}{6-5} = \text{Rs.}50$$

Concept of Marginal cost during short period can be explained with the help of following table and diagram:

Output	Fixed Cost	Variable Cost	T.C.	M.C.
0	10	0	10	-
1	10	10	20	10
2	10	18	28	8
3	10	24	34	6

4	10	28	38	4
5	10	32	42	4
6	10	38	48	6



With the help of this table and graph, we may conclude that in the beginning marginal cost of every additional unit decreases but after a certain level of production, marginal cost of every additional unit increases.

In the figure, output is measured on X - axis and cost on Y - axis. MC is the marginal cost curve. At the initial stage MC curve is declining. After a certain point, it starts to rise. Thus MC curve is "U" shaped.

RELATION BETWEEN AVERAGE COST & MARGINAL COST:

Relationship between average cost and marginal cost can be illustrated as under:

Output	Total Cost (Rs.)	Average Cost (Rs.)	Marginal Cost (Rs.)
0	100	0	-
1	200	200	80
2	280	140	60
3	340	113.3	40
4	380	95	40
5	420	84	40
6	480	80	60
7	560	80	80
8	720	90	160

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Check Your Progress

1. Define Opportunity Cost?
2. What is explicit cost?
3. What is the concept of revenue?

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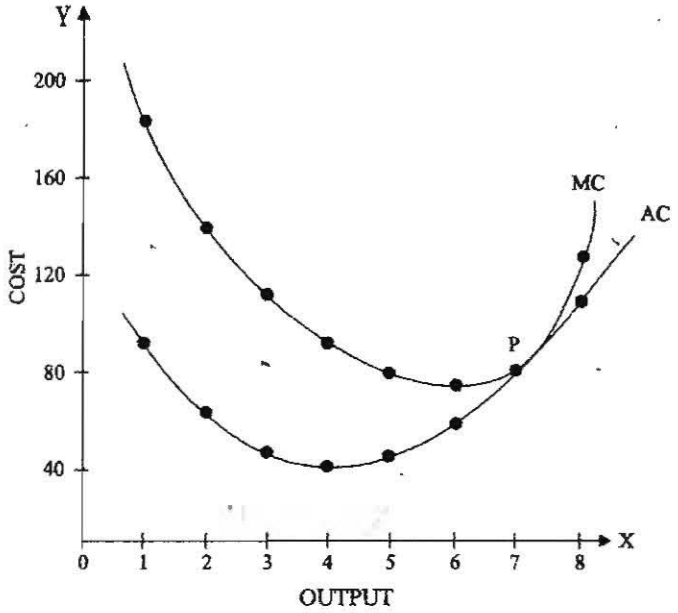


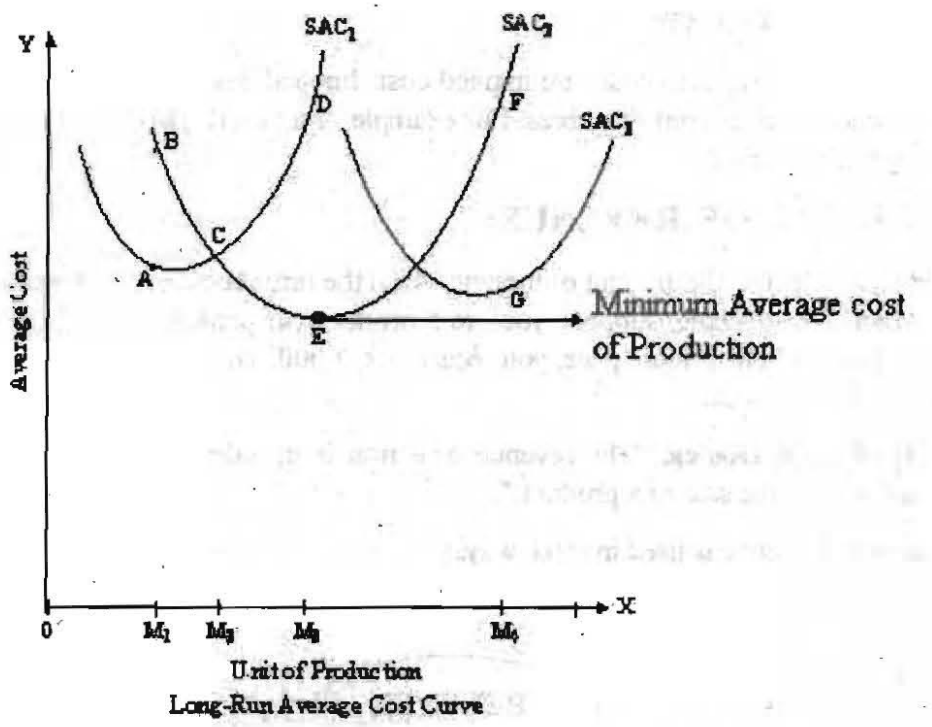
Following are some important criteria of relationship between the two phenomena, which we can understand with the help of given table and figure:

1. Both MC and AC are calculated with the help of total cost of production. They are derived from the same source i.e.
2. When average cost falls as a result of an increase in output, marginal cost is less than average cost.
3. When average cost rises as a result of an increase in output, marginal cost is more than average cost.
4. When average cost is minimum, marginal cost in equal to the average cost. In other words, marginal cost curve intersects average cost curve at its minimum point (i.e. optimum point.).

Long-run average cost curve:

Long-run is a period of time during which the firm can vary all of its inputs unlike short run in which some inputs are fixed and others are variable. Thus, all costs are variable in long-run.

Long-run average cost can be obtained by dividing the total cost by number of units produced. Long-run average cost curve illustrates minimum long-run average cost at different levels of production. It can be explained with the help of following diagram:



Long-Run Average Cost Curve

In the diagram, units of production are shown on X-axis and average cost on Y-axis. This diagram is based on the assumption, that there are three plants of production - large, medium, and small. SAC_1, SAC_2 and SAC_3 are the short run average cost curves of these plants. In long run, firm will have to choose any one of these three plants.

Suppose, the firm decides to produce OM_1 quantity of production, the firm should use SAC_1 because in SAC_1 the average cost of production is A M_1 which is less than B M_1, if firm uses SAC_2. Therefore, the firm will use SAC_1 to get OM_1 quantity of production. If firm decides to produce OM_2 quantity of production, firm can use any of SAC_1 and SAC_2, because in both the cases, average cost of production is same i.e. C M_2. If the firm decides to produce OM3 quantity of production, firm should choose SAC_2, because in SAC_2, average cost of production in EM3, which is much less than DH3 if firm chooses SAC_1. If firm decides OM4 quantity of production, firm should choose SAC3 because its average cost of production is GM4, which is less than FM4 if firm chooses SAC_2. Since EM3 is the minimum cost, therefore, the firm must produce OM3 quantity of production at SAC_2. It will be the optimum level of production.

4. EXPLICIT COST:

Explicit costs are those payments that must be paid by an entrepreneur to the factors of production in the monetary form. Wages paid to the workers, payments made for raw-material, interests paid on loans etc. are some examples of explicit costs.

According to Leftwitch, "Explicit costs are those cash payment, which firms make to outsiders for their services and goods."

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5. IMPLICIT COST:

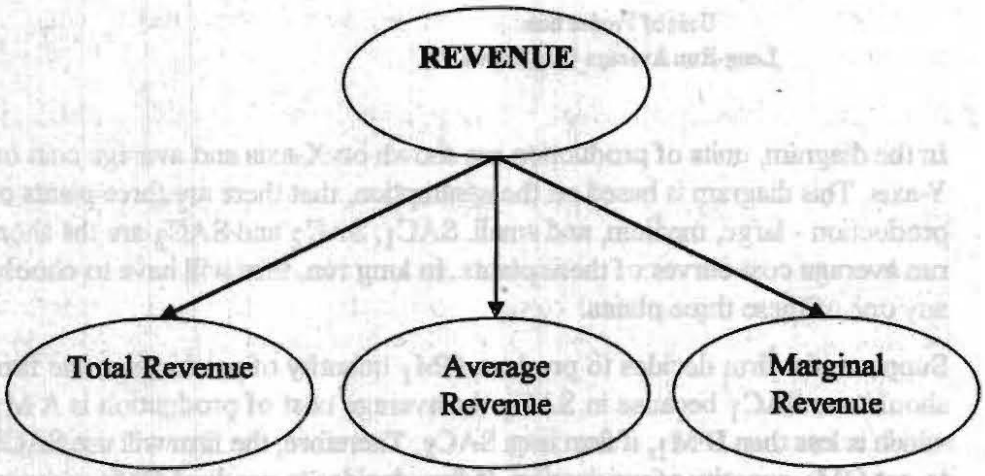
Implicit or imputed costs are implied cost. Implied costs are the earnings of owner's - employed resources. For example - rent on the land owned by the entrepreneur etc.

CONCEPT OF REVENUE:

Revenue refers to the amount of money, which the firm receives by the sale of its product. For example, suppose you are a producer of pens, you produce 1000 pens daily, by selling these pens, you receive Rs. 2,000. This amount of Rs. 2,000 is called as revenue.

According to Dooley, "The revenue of a firm is its sales, receipts or money receipts from the sale of a product."

The term Revenue is used in three ways:



1. **Total Revenue:** The terms total revenue refers to the total amount of money that the firm receives from the sale of its products, i.e. gross revenue.

According to Dooley, "Total Revenue is the sum of all sale receipts or income of a firm"

In other words, total revenue is the total sale receipts of the output produced over a given period of time. Total revenue is calculated multiplying the quantity sold with its price.

$$TR = P \times Q$$

Where TR = Total Revenue

P = Price of a Product

Q = Quantity of a Product

For Example: A firm sells 1000 units of cold drinks at the rate of Rs. 7 per unit. Then TR would be

$TR = P \times Q$

$= 7 \times 1000$

$= Rs.\ 7000$

2. **Average Revenue:** Average Revenue refers to the revenue per unit of commodity sold. Average Revenue can be obtained by dividing the total revenue with the number of units sold, i.e.

$$AR = \frac{TR}{Q}$$

For Example: Total Revenue of 5 units of a commodity is Rs. 1,000. Thus AR of a commodity is-

$$AR = \frac{TR}{Q} = \frac{1000}{5} = Rs.200$$

Therefore, average revenue is nothing but price of a commodity at which a particular product is sold.

According to Stonier and Hague, "The average revenue curve shows that the price of the firm's product is the same at each level of output."

Therefore, in economic AR and price are synonyms.

3. **Marginal Revenue:** Marginal Revenue refers to the additional revenue earned by selling additional unit of commodity. In other words, marginal revenue can be defined as the change in total revenue which results from the sale of one more unit of a commodity."

According to Ferguson, "Marginal Revenue is the change in total revenue which results from the sale of one more or one less unit of output."

For example : If a seller earns Rs. 10,000 by selling 100 units and Rs. 10,120 by selling 101 units, then marginal revenue will be Rs. 120.

Thus, marginal revenue can be obtained by deducting the total revenue of 'n' units and the total revenue of 'n-1' units or by dividing the change in total revenue and change in quantity sold i.e.

$$MR = TR_n - TR_{n-1}$$

Or,
$$MR = \frac{\Delta TR}{\Delta Q}$$

Where, MR = Marginal Revenue,

TR = Total Revenue

ΔTR = Change in total revenue

ΔQ = Change in Quantity sold.

NOTES

Comparative Study of Revenue Curves in Different Markets:

As we know markets are of three types.

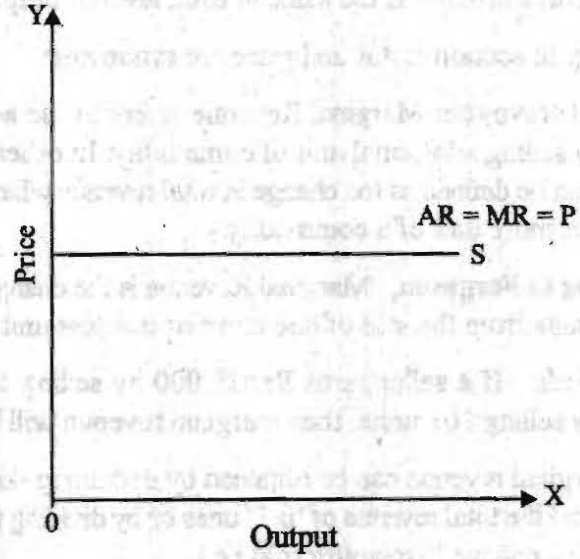
i. Perfect Competitive Market

ii. Monopoly Market

iii. Imperfect Competitive Market

Revenue curves are different in different markets:

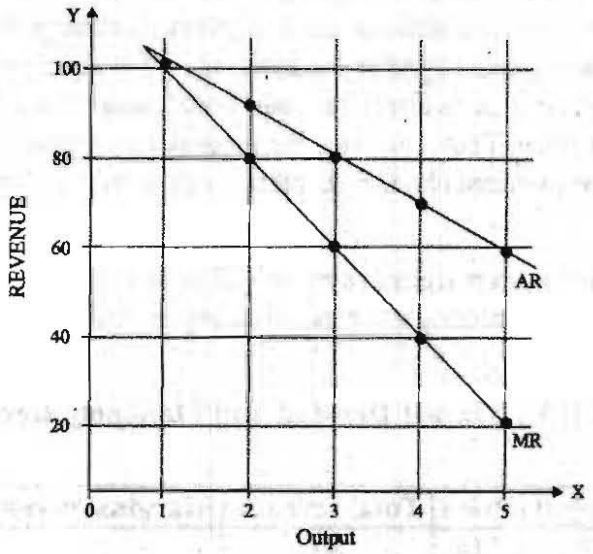
1. **Revenue curves under Perfect Competitive Market:** Under perfect competition, the market price is determined by the interaction between demand and supply of the product. A firm can sell any quantity at the existing market price. Hence, total revenue of the firm increases proportionately with the output offered for sale. If total revenue increases in direct proportion to the sale of output, the average revenue (AR) would remain constant. Since, the market price of a commodity is constant, without any variation due to changes in the unit sold by the individual firm; the extra output will give the proportionate revenue. Hence, MR & AR will be equal to each other and remain constant. In this diagram, horizontal line SS represents both MR and AR or price. Thus firm's AR and MR curve are perfectly elastic under perfect competition.



ii. **Revenue Curves under Monopoly & Imperfect Competition:** Under monopoly and imperfect competition, the average revenue and marginal revenue curves slope downward from left to right. It implies that if a firm wants to sell more units of output, it will have to reduce the price of the commodity. In other words, there is an inverse relationship between the demand for the product and its price. The average revenue and marginal revenue curves are shown in following diagram.

Output Average	Revenue	Total Revenue	Marginal Revenue
1	100	100	100
2	90	180	80
3	80	240	60

4	70	280	40
5	60	300	20



The average revenue and marginal revenue curves in the given diagram are downward sloping straight lines. The firm can sell 1 unit at Rs. 100, but if the firm increases its sales up to 5 units, it will have to reduce the price to Rs. 60. If the firm wants to maintain the price i.e. Rs. 100, then it will we able to sell less number of units. This diagram is based on the assumption that the firm does not practice price discrimination and charges uniform price from all the buyers.

Hence, this diagram makes it clear that under monopoly and imperfect competition, MR is less than AR at all the times. Thus, MR curve is below the AR curve.

CASE STUDY:

Concept of Cost and revenue

Declining marginal revenue and price. The monopolist's marginal revenue from each unit sold does not remain constant as in the case of the perfectly competitive firm. The monopolist faces the downward-sloping market demand curve, so the price that the monopolist can get for each additional unit of output must fall as the monopolist increases its output. Consequently, the monopolist's marginal revenuewill also be falling as the monopolist increases its output. If it is assumed that the monopolist cannot price discriminate, that is, charge a different price for each unit of output it produces, then the monopolist's marginal revenue from each additional unit produced will not equal the price that the monopolist charges. In fact, the marginal revenue that the monopolist receives from producing an additional unit of output will always be less than the price that the monopolist can charge for the additional unit.

To understand why, consider a monopolist that is currently supplying N units of output. Suppose the monopolist decides to supply 1 more unit. It therefore increases its supply to N + 1 units of output. The downward-sloping market demand curve indicates that the new market price will be lower than before. Because the

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Check Your Progress

4. Define marginal revenue?
5. What is total revenue?

NOTES

monopolist cannot price discriminate, it will have to sell all N + 1 units of output at the new lower price. This new lower price reduces the total revenuethat the monopolist receives from the first N units sold. At the same time, the monopolist will gain some revenue from the additional unit it supplies. The marginal revenue that the monopolist receives from supplying 1 additional unit is equal to the price that it receives for this unit minus its loss in revenue from having to sell Nunits of output at a lower market price. Thus, the price the monopolist receives from selling N + 1 units exceeds the marginal revenue that it receives from supplying the additional unit of output.

The relationship between marginal revenue and price in a monopolistic market is best understood by considering a numerical example, such as the one provided in Table 1 .

TABLE 1 : Market Demand and Monopoly Revenue

Output	Price	Total revenue	Marginal revenue
0	$14	$0	—
1	12	12	$12
2	10	20	8
3	8	24	4
4	6	24	0
5	4	20	4

The first two columns of Table 1 , labeled "Output" and "Price," represent themarket demand schedule that the monopolist faces. As the price falls, the market's demand for output increases, in keeping with the law of demand. The third column reports the total revenue that the monopolist receives from each different level of output. The fourth column reports the monopolist's marginal revenue that is just the change in total revenue per 1 unit change of output. Note that the monopolist's marginal revenue is declining as output increases.

Suppose the monopolist is currently producing 2 units of output for which it is receiving a price of $10 per unit and a total revenue of $20 (2 × $10). Now, consider what happens when the monopolist increases its output to 3 units. The price that the monopolist can expect to receive falls to $8 per unit. At this new lower price, the total revenue the monopolist receives for the first two units of output it supplies falls from $20 to $16 (2 × $8), a loss of $4. The monopolist's marginal revenue is equal to the $8 that it receives from the third unit sold minusthe loss in total revenue that it receives on the first two units due to the new lower price. Hence, the marginal revenue the monopolist receives from the third unit sold is $8 ? $4 = $4, which is below the market price of $8.

SUMMARY:

- Costs play a very important role in business decision making. Cost estimates are made in monetary terms. Cost calculations are indispensable for management decisions.

- Real cost refers to those payments which are made to compensate the efforts, pains, exertion and discomfort of the employees.
- Opportunity Cost of a commodity is measured in terms of revenue that could have been earned by employing that commodity in some other alternative uses.
- All the expenses which are incurred for the production of a commodity in monetary terms like wages, value of raw-material, rent, packing etc are called money costs.
- Marginal cost is the addition made to the total cost for production of an additional unit of output.
- Explicit costs are those payments that must be paid by an entrepreneur to the factors of production in the monetary form.
- Implicit or imputed costs are implied cost. Implied costs are the earnings of owner's - employed resources.
- Revenue refers to the amount of money, which the firm receives by the sale of its product.
- Marginal Revenue refers to the additional revenue earned by selling additional unit of commodity.

ANSWERS TO 'CHECK YOUR PROGRESS'

1. Opportunity cost is the loss of income due to rejected opportunities. opportunity cost of commodity is the costs of sacrificed alternatives.
2. **According to Leftwitch,** "Explicit costs are those cash payment, which firms make to outsiders for their services and goods."
3. **According to Dooley,** "The revenue of a firm is its sales, receipts or money receipts from the sale of a product."
4. **According to Ferguson,** "Marginal Revenue is the change in total revenue which results from the sale of one more or one less unit of output."
5. **According to Dooley,** "Total Revenue is the sum of all sale receipts or income of a firm"

TEST YOURSELF :

Long Question:

1) Write a Short note on:

   i) Real Cost ii) Opportunity Cost iii) Money Cost

2) Explain average fixed cost, average variable cost and average cost with the help of diagram.

3) Explain the concept of marginal cost with help of suitable diagram.

4) Explain the relationship between average cost and marginal cost. Use diagram.

5) Explain the meaning of long Run Average Cost Curve.

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6) Explain the concepts of revenue, total revenue, average revenue and marginal revenue.

7) Explain the relationship between average and marginal revenue under:

i) Perfect Competition ii) Imperfect Competition

Short Questions:

1) What is Real Cost?

2) Explain the term Variable cost.

3) What is explicit and implicit cost?

4) What is Total Revenue?

FURTHER READING

- Managerial Economics: P.L.Mehta
- Raj Kumar Gupta
- K.N. Devadi

8 NATIONAL INCOME

NOTES

The Chapter Covers :

- MEANING & DEFINITIONS OF NATIONAL INCOME:
- CIRCULAR FLOW OF INCOME:
- CONCEPT OF NATIONAL INCOME:
- MEASUREMENT OF NATIONAL INCOME
- INCOME METHOD or FACTOR INCOME IN THE PRODUCTION PROCESS
- VALUE ADDED METHOD:
- EXPENDITURE METHOD:
- IMPORTANCE OF NATIONAL INCOME ESTIMATES:
- DIFFICULTIES IN THE MEASUREMENT OF NATIONAL INCOME
- STANDARD OF LIVING

Meaning & Definitions of National Income:

National Income is the money value of all final goods and services produced by a country during a period of one year. National Income includes different types of goods and services, since these goods are measured in different physical units i.e. food grains and pulses are measured in kilograms, milk in liters and cloth in meters etc. and services may also be of different types like services of doctors, teachers, engineering etc. Therefore, it is not possible to add them together so we should

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measure them in common parlance. This common measure is money. The value of all goods and services produced is measured in terms of money. For example if the value of a meter cloth is Rs. 20 and the total cloth produced is 500 meters, then money value of cloth is Rs. 10,000. Similarly, we can find the value of other goods and services and the total value of all goods and services produced during one year. Thus, this single measure of the final goods and services produced by the country in a particular year is known as national - income or national product.

National Income = National Product

According to Dr. Alfred Marshall, "The labour and capital of the country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterial, including services of all kinds. This is the true net annual income or revenue of the country or the national dividend.

According to A.C. Pigou, "The national dividend is that part of the objective income of the community including of course, income derived from abroad which can be measured in money."

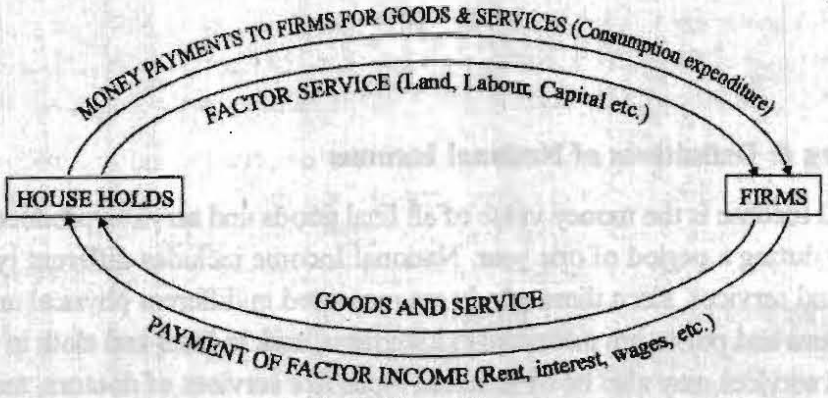
Thus, national income refers to the sum total of value of all the final goods and services produced in an economy during one year. In other words, there are three measures of national income of a country:

1. The sum of values of all final goods and services produced.
2. The sum of all incomes in cash.
3. The sum of consumer's expenditure.

Circular Flow of Income:

The business sector employs the factors of production and produces the final product for sale. The household sector, supplies the factor services (factors of production) and consumers consume the output which is produced by the business sector. Thus, national income is the flow of goods, services and money which can be best described with the following simple circular flow chart:

It is assumed that, production should be equal to sales and income should be equal to expenditure.



Circular Flow of Income

CONCEPT OF NATIONAL INCOME:

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1. Gross Domestic Production (GDP):

GDP is the aggregate money value of all final goods and services produced in the domestic territory of a country during an accounting year. Domestic territory is defined as follows:

i. Territory lying within political frontiers, including its territorial waters.

ii. Ships and aircrafts operated by the residents of the country between two or more countries.

iii. Embassies and military establishments of the country located abroad.

iv. Fishing vessels, and floating platforms operated by the residents of the country in the international waters.

2. Net Domestic Product (NDP):

For calculating GDP, no provision is made for depreciation allowance (Capital consumption allowance). In such a situation GDP will not reveal complete flow of goods and services through various sections.

It is a fact that capital goods like machines, equipments, tools, building etc get depreciated during the process of production. After some time these capital goods need replacement. So, some part of capital is retained in the form of depreciation allowance. When depreciation allowance is subtracted from GDP, we will get net domestic product i.e.

NDP = GDP-Depreciation

3. Gross National Product (GNP):

Gross National Product is defined as the sum of the gross domestic product and net factor incomes from abroad.

As explained earlier, whatever is produced within the domestic territory of a country in a year is its gross domestic product. It includes, the contribution made by non-resident producers working in that country but does not include the income generated by the citizens of that country working abroad.

Fox example: Many foreign citizens are working in India, sum total of wages, rents, interest and profit earned by them in India is the income of their respective countries and themselves. Similarly, many Indian citizens are working abroad, income earned by these people is the factor income earned from abroad.

Net factor income from abroad is the difference between the income received from abroad for rendering factor services and the income paid for the factor services rendered by the non-residents in the domestic territory of a country. Thus, Gross National Product is obtained by adding Gross domestic product and net factor income from abroad.

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GNP = GDP +NFIA

Where, NFIA is the net factor income from abroad.

4. Net National Product (NNP):

Net National Product means the total value of all the final goods and services produced in an economy during a certain period after allowing for depreciation. In other words, it can be derived by subtracting depreciation allowance from Gross National Product.

Net National Product = Gross National Product – Depreciation

5. GDP at Factor Cost:

GDP at factor cost is the sum of net value added by all producers in the country and the consumption of fixed capital. Net value added is the contribution of each producing unit to the current flow of goods and services.

GDP at Factor Cost = Net Value Added + Depreciation

6. GDP at Market Price:

GDP at market price includes indirect taxes and excludes the subsidies given by the government. Therefore, in order to arrive GDP at market price, we must add indirect taxes and subtract subsidies from GDP at factor cost :

In brief,

$$GDP_{MP} = GDP_{FC} + IT - S$$

Where, IT = Indirect Taxes

S = Subsidies

7. Net Domestic Product at Market Price:

Net domestic product at market price is the market value of final goods and services produced within the domestic territory of a country exclusive of depreciation. GDP at market price and NDP at market price differ from each other because GDP_{MP} includes depreciation and NDP_{MP} does not include depreciation. Thus

$$GDP_{MP} - \text{Depreciation} = NDP_{MP}$$

8. Net Domestic Product / NDP at factor Cost:

Net domestic product at factor cost is the sum of earning received by all the factors of production in terms of wages and salaries, rent, interest and profit. It is known as domestic factor income also NDP_{FC} differs from NDP_{MP} as in the following equation:

$$NDP_{FC} = NDP_{MP} - \text{Indirect Taxes} +$$

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9. Net National Product at factor Cost or National Income:

National income is the net national product at factor cost. In other words, national income is the sum of net domestic product at factor cost plus net factor income from abroad. Thus,

National = Net Domestic Product at factor Cost + Net Factor Income from abroad

10. Personal Income:

Personal Income refers to the income actually received by individuals or households in a country during one accounting year. In practice, we find that the firms have to pay a part of their income as taxes. Similarly, part of their profit is retained by enterprises. These two sums should be deducted from private income because these are not distributed among factor of production. Thus:

Personal Income = Private Income – Undistributed Profits of enterprises (Corporate savings) – Corporate Taxes

1. **Private Income:** Private income is income obtained by private individuals or firms from any source and the retained income of the corporations. In order to estimate it we have to make certain additions and deduction from the national Income or NNP at factor cost. Thus,

Private Income = National Income + Transfer payments + Interest on Public Debt – Social Securities - Profits and Surpluses of Public Undertaking

Transfer Payments: Money that a government gives to individuals, usually through a social welfare program. For example, elderly people in the United States who have paid FICA taxes for a certain number of years receive a Social Security check from the government every month. This is a transfer payment. Another type of transfer payment is money given to a state or province with the proviso that it will fund the state or province's social welfare programs. For example, under the Personal Responsibility and Work Opportunity Reconciliation Act in the United States, each state receives a certain amount of money from the federal government to fund welfare and similar programs for the poor.

12. Per Capital Income:

The average income of the people of a country in a particular year in called per capita Income for that year. It can be obtained by dividing national income of a country to the population of the country.

NOTES

$$\text{Per Capita Income} = \frac{\text{National Income}}{\text{Population}}$$

13. Disposable Income:

Disposable Income is that part of personal income which is available to individuals and households for actual consumption. In other words, it indicates the purchasing power of the people. They cannot spend the entire personal income because they have to pay a part of it to government as taxes. Therefore, in order to find out disposable income, the amount o these taxes should be deducted from personal income. Thus,

Disposable Income = Personal Income – Personal Taxes

The following statement mathematically summarizes various concepts which are discussed above and the relationship among them:

GNP at market price – net income from abroad	=	GDP at market price
GDP at market price – net indirect taxes	=	GDP at factor cost
GDP at factor cost – depreciation	=	NDP at factor cost
NNP at market price – net income from abroad	=	NDP at market price
NNP at market price – net indirect taxes	=	NNP at factor cost
GNP at market price – depreciation	=	NNP at market price
GNP at market price – net indirect taxes	=	GNP at factor cost
NDP at market price – net indirect taxes	=	NDP at factor cost
GNP at factor cost – depreciation	=	NNP at factor cost

MEASUREMENT OF NATIONAL INCOME

National income of a country can be measured in three alternative ways (i) as a flow of income (ii) as a flow of goods and services, and (iii) as a flow of expenditure. The three methods of measurement give us three measures of national income, viz., gross national income, gross national product; and gross national expenditure. The three measures will be identical in value, i.e., in an economy.

There are three methods of measuring national income. They are as follows:

1. Income Method
2. Value Added Method, (alternatively known as Product Method), and
3. Expenditure Method

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METHOD OF FACTOR INCOME IN THE PRODUCTION PROCESS

Income Method is also called Distributed share method or Factor Payment Method. This method approaches national income from the distribution side. Production of goods and services is an outcome of combined efforts of various factors of production, like land, labour, capital and enterprise. They get reward for their service. Total income received by all the factors of production in an economy during a certain period is called factor income. Total payment made by producers for factor services is called factor payment.

Thus, National income can be obtained either on the basis of total income received by all factor of production or total payment made by all producers to these factors of production. Therefore, National Income is calculated by adding up the rent of land, wages and salaries of employees, interest on capital, profits of entrepreneur (including undistributed profits of joint-stock companies) and income of self - employed people.

National Income (Income Method) = Wages + Rent + Interest + Profit + Income of self employed + Net factor income from abroad

Only incomes earned by owners of primary factors of production are included in national income. Transfer incomes are excluded from national income.

As we have already discussed that the production process is a continuous one in which goods and services are produced with the help of various factors of production like labor, land, capital, enterprise and so on. These factors co-operate in the production process because they receive earnings in cash or in kind which will satisfy wants. The producers engage these factors because they have the capacity to produce tangible goods and services. The producers are, therefore, under an obligation to make payment for factor services. The earnings which the different factors of production get in the production process are called factor incomes.

From the producer's point of view it is termed as 'income paid', and from the factor's point of view as 'income received'

National income of a country could be computed either by taking the sum of income paid by the producing units to the factors of production, or by taking the sum of income received by the factors. The former is known as 'income-paid-out variant' and the latter as 'income received variant'. National income, whether measured. by income-paid out variant or by income-received variant must give us identical results. Different countries use either of the two variants to measure national income as sum of factor income, depending upon the availability of essential data.. At times, income paid and income received measures are used simultaneously, as in France, to compute the national income. In most of the countries, the income-paid-out approach is extensively used because of the easy availability of data relating to it.

Classification of Factor Income

The income which the factors receive from enterprises, government, or other institutions could be classified into different categories accounting to economic division in which economic activities are placed. The most comprehensive classification consists of the following five types of income:

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(i) Compensation of employees,

(ii) Interest,

(iii) Rent,

(iv) Profits and Dividends, and

(v) Mixed income of self-employed.

We may adopt a less comprehensive but still effective classification of factor income into three broad categories, viz.,

(i) Wage Income,

(ii) Non-wage Income, and

(iii) Other incomes.

(i) Wage Income.

Wage income refers to the income received by the employees in cash and in kind. These employees must be the normal residents of the country. Wage income must be computed before payment of taxes and deductions of social security contributions. Factors of production work for private enterprises, government and sometimes they work for themselves (self. employed). The sum of the wages and salaries received by factors in a year's time gives us national income of the country.

Normally, wage income estimates are available through industrial reports, annual surveys, budgetary reports of the government, payroll tax data, and so on. Wages and salaries paid to the factors are compiled from the information received from the different sectors-public and private-employing them.

However, at times, aggregate wage income statistics are inadequate or available for certain years only. In such cases, it is necessary to conduct special surveys to collect wage income data. All the units of factors are not taken into consideration for the collection of data. Suppose that we have to estimate the earnings of the workers employed in the cotton textile industry in India. We will pick up a few workers at random basis representing all categories in an industrial unit. Then we will find out the average income of these representative workers by dividing their gross income by their number. This average income, then, will be multiplied by the total number of - workers engaged in this industrial unit to arrive at the total income of all the workers in this unit. Similarly, the wage income of workers employed in other cotton textile units is computed. The sum of the wage income of workers in all the units will provide us data relating to income paid to workers in cotton textile industry. Similar method may be employed to find out the wage income of workers working in other sectors.

'We have to follow a different method to estimate the compensation paid in kind to domestic and farm workers, restaurant, and industrial employees. The value of board or lodging is computed at their cost to the employers or at the prices at which these facilities would be available to the employees elsewhere.

There is yet another form of wage income, known as 'supplementary labour

income. This income is paid in the form of provident fund, pension, gratuity, and other social security benefits. Income arising out of supplementary earnings is ascertained from the sample accounts of the enterprises administrating welfare programmes. Annual surveys and other reports also furnish information relating to supplementary earnings

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(ii) Non-Wage Income:

Non-wage income refers to the income paid to the factors in the form of interest, rent, distributed profits and dividends. We would like to discuss in brief the different sources of non-wages income which are as follows:

a) Interest:

Interest is the income received 'by individuals and non-profit' institutions as a reward for the capital supplied to the enterprises, It also includes interest on life insurance policies, bank deposits and interest on government bonds. Normally, the interest accruing to households is not -shown in the national' income because no relevant information is available on this count. In such cases, the interest payments to households appear in business profit as a factor share. Income from interest may be estimated from income tax data, as in the United States, or may be obtained by conducting surveys of the production activities of business enterprises.

b) Rent:

Income from rent may be defined as' a capital share derived solely from the ownership of land and building. Rental income includes net rent accruing to households and private non-profit making institutions. It does not include rent on the ownership of farm and owner-occupied business buildings. It is so, because it is reflected in the profits of the firms and business enterprises. Data relating to the share of rent in the national income is collected through special surveys or tax returns.

c) Profits and Dividends:

Corporate profits include dividends and undistributed profits. Dividends are the income paid by the enterprises to households and non-profit making organizations as a share of profits. Data relating to the share of dividends in the national income may be computed from the reports of corporate income taxes or reports of special taxes on income from stock and other securities. Undistributed profits are the sums set aside by .firms for future tax payments. It is obtained after payment of dividends, interest, transfers and direct taxes. Figures relating to undistributed profits may be obtained from the corporate income tax returns or through special sample surveys.

d) Mixed Incomes of the Self-employed:

Mixed incomes of the self-employed are considered as income from work. It is true that the entire income a self-employed person receives cannot be attributed to his effort alone. Any production activity requires the services of other factors in addition to human effort to produce goods and services.

Check Your Progress

1. What is private income?
2. Define wage income?
3. Define standard of living?

NOTES

In. most cases, the producer supplies his own land and capital instead of borrowing their services from the market. His income, therefore, includes interest for the capital and rent for the land he has supplied. If he were to provide these factors to others he would receive interest and rent. But in practice, it is difficult to draw a dividing line between his labour, land and capital. They are lumped together. The entire: income of the self-employed is regarded as the income from work.

(iii) Other incomes:

In the category of 'other incomes' we include operating surplus of the public enterprises, taxes, and net flow of income from abroad. Public enterprises are productive units owned by the government. The surplus earned by these enterprises is, not to be distributed among the shareholders, since the government: .itself is the sole owner. Such surplus is included in the national income of the economy. Similarly, the government does not earn taxes, but collects them. These taxes are the incomes of factor inputs which the government has collected. If the same tax money is used to produce various goods and services by paying wages and salaries, the government sector does not appear to generate any income. This is because the incomes of non-government employees were already counted and taxes are a part of their income. If the same money is paid to government employees, it would appear that it dhould <not be called as income. This is not correct. The non-government employees' gross income, before payment of taxes, measures the value of their contribution to the flow of goods and services. Similarly, the government employees' income measures their contribution. Therefore, both should be included in national income. Lastly, net flow of income from abroad is to be included in national income. Net flow of income from abroad is computed as the difference between the total value of exports that a country earns and the total value of imports that a country has to pay out.

To sum up, national income as a sum of factor incomes or factor costs can be calculated by estimating the values of wage-income, non-wage income and other incomes by the various methods and sources.

Difficulties

Factors of production which assist in the production process to produce goods and services receive income for their factor services. But difficulties arise in the allocation of factor income both from the payable and on the receivable side. We would like to discuss some of the more important difficulties, which are as follows:

1) **Classification of income:**

The first difficulty arises in classifying the type of payment or receipts. There is not much of confusion or disagreement regarding the classification of factor income into two broad categories, viz., wage and non-wage income. But, what constitutes wage and non-wage income is a matter of dispute.

2) **Income of the members of armed forces:**

While the pay and allowance of members of the armed forces are generally

not included in the labour income, compensation in kind to the member of the armed forces is included in the national income estimate. Another difficulty in assessing the value of compensation is whether the value of boarding and lodging should be computed at their cost to the employer or at the prices the members of the armed forces would pay elsewhere.

3) **Allocation of mixed income:**

Difficulties arise in the allocation of mixed income. While the income from farms and other agricultural enterprises is included in factor income, income from the ownership of farms, buildings and financial assets is not included in the factor income. Income from the ownership of farms buildings, and financial assets is generally recorded separately in the rent and interest shares of income

4) **Allocation of dividend:**

Allocation of dividends also creates difficulties. Dividends paid to households, government, and non-profit making organizations by corporations, limited companies, etc are included in the factor shares. But, inter-corporate dividends are not considered as a part of national income.

5) **Computation of undistributed profits:**

Computation of undistributed profits is again a difficult task. The shareholders collectively own the corporations in which they hold shares. Therefore, allocation of the factor income accrual in respect of undistributed corporate profits to corporations as such virtually amounts to allocating this factor income accrual to shareholders collectively. It means that the share holders can claim the whole of the residual income of corporations and not only the part disbursed as dividends.

6) **Income of Self-employed:**

There is some amount of uncertainty as to when exactly the income of self-employed becomes payable. The choice rests with the person. He may consider it payable as and when income is earned, or he may defer it till the time of actual withdrawal.

7) **Income-expenditure surplus:**

At times consumers as suppliers of factor services have to over-spend their incomes. In fact to the extent that their borrowing exceeds their lending, consumers, unlike producers have nothing to show for the surplus of borrowed funds. This dis-saving reduces their 'net worth' and thereby their claim to a share in total factor income.

8) **Change ill inventories:**

Changes in inventories also create problem in national income computation. When the inventories are valued on 'first in first out' basis, their book prices may be higher or lower than the actual cost entering into the value of

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production.

To sum, up, it sounds very simple to calculate national income with the help of income method, in which we have to estimate the factor income generated in the production process. But, in practice, the method has to face a number of difficulties, some of which may simply prove insurmountable. Therefore, economists have expressed serious doubts about the usefulness of this method in application.

Precautions: While calculating national income, the following precautions must be taken:

i. Transfer payments such as pensions, scholarship, etc. should not be included in national income.

ii. Windfall profits like lotteries should not be included in national income.

iii. Sometimes a part of the profits of business enterprises are kept in reserve and not distributed as dividend to shareholders. Such undistributed profits must be included in national income because they represent income of the enterprise earned during the period under consideration.

iv. Payment due to the employer's own factors (e.g. this own land) must be included in national income on the basis of the market price.

v. Sale of shares, debentures and bonds etc should not be included in national income.

VALUE ADDED METHOD:

In the process of production, enterprises, public and private, produce certain goods and services with the help of the various factors of production. These goods may be consumer goods like cloth, footwear; sugar, milk, grains, etc., or capital goods like cloth, footwear, sugar, milk, grains, etc., capital good like factory buildings, machinery, tools, equipments, rail-roads, etc. Similarly, services include the services of doctors, teachers, musicians, advocates, government servants, banking and insurance, etc. The sum of all the goods and services produced in a country in a year's time gives us gross domestic product. It is, however, not possible to take up the total of all the goods and services, as different units of measurement like grams, liters, quintals, meters, etc., are available to measure their quantities. The utility or satisfaction derived from services is still more difficult to ascertain because it is a subjective thing. It is for this reason that economists have introduced money as the measuring rod to measure the quantity of goods and services. The money value of all the goods and services produced in year's time gives us gross domestic product at market prices.

The three stages through which national accounting process has to move are: (i) estimating the gross value of domestic output in the various sectors of the economy, ii) determining the cost of materials used and services rendered by other sectors and the depreciation of plant and machinery, and (iii) deducting these cost and depreciation from gross value to derive net value of the domestic product. It is also known as 'census of output method' or 'value added method' of estimating national income.

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Classification of Producing Sectors

In the estimation of national income according to -census of output method or value-added method, the economy is classified into various sectors where the income originates. Economists have different opinions about the number of sectors or divisions among which the industries should be classified. However, the most common classification divides the producing units into the following fourteen categories:

(i) Agriculture, ii) Mining, (iii) Fishing, (iv) Construction, (v) Manufacturing, (vi) Trade, (vii) Transportation, communications, and other public utilities, (viii) Finance, (ix) Ownership of dwellings and other real estate, (x) Service industries, trade and arts, (xi) Professions, (xii) Domestics, (xiii) Public Administration and (xiv) Private non-profit making organizations.

The output of goods and services flowing from each branch of production is the sum of the outputs of all the separate producing units in that branch. The total output is evaluated at the market, prices. The value so computed is called 'gross value of domestic product'.

Valuation of Gross Product

The gross value of the output in a particular sector is estimated either by computing data relating to output in that sector and then multiplying it by an appropriate price, or by collecting information about the gross receipts of enterprises from the sale of their produce and changes in the values of their inventories in a year's time. Product data may be collected by conducting sample surveys. Difficulties of valuation appear specially in case of transport, communications, services of dwellings, public administration, etc. It is because they do not produce any tangible things. It is for this reason that census of income method is employed to evaluate the contribution of services to the national income.

Intermediate Consumption and Value Added

Computation of national income on the basis of the valuation of gross output in the different sectors does not give us a correct picture, In the, compilation of output data certain items appear more than once and thus over-value the national product. For example, if Industry A producing pulp sells it to the Industry B producing paper for Rs. 1,000, Industry **B** sells paper to the Publishing Industry **C** for **Rs. 1,200** and Industry C sells books made of this paper for **Rs. 1,500** to book-sellers. In such a case the gross value of output will be **Rs.1,000 + Rs. 1,200 + Rs. 1,500 = Rs.3,700**. But careful analysis of the production process will reveal that this much income has not been generated in the economy. Pulp, which is the original raw material, in this case; has been added three times to the national product. We should not include a material or product at all the stages of manufacturing; if we want to have correct estimates of national income.

In order to avoid duplicity in counting, we must make allowance for intermediate consumption. The cost of materials, services and taxes must be excluded from the gross value of the product. For example, if we are estimating the value of food grains, we must deduct from the gross value the cost incurred on seeds, fertilizers, irrigation, etc. Similarly, if we are calculating the value of industrial output, we must

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deduct from the gross value of output the cost for raw material, fuel, electricity, power, etc. Likewise, in estimating the value of buildings, we must deduct from the gross value the cost of building materials. In all other cases where it is not feasible to ascertain the real cost of the intermediate materials, a certain proportion or percentage of cost should be deducted from the gross value of the produce.

Difficulties of various kinds appear in making allowance for the intermediate consumption. Sufficient data is not available regarding the value of intermediate materials. Difficulties arise, especially, in case of small manufacturers who do not keep proper account of the inputs, used by them. The most difficult problem in the estimation of gross value of produce arises when the producers themselves retain a part of the total produce for their self-consumption. For example, suppose a cultivator produces 10, quintals of wheat. He retains 2 quintals of wheat for meeting the food requirements of his family and sells the rest for Rs. 800 (price being Rs. 100 quintal). It means that the national income has been underestimated by Rs. 200 because of intermediate consumption. We may find a number of such cases relating to small producers, who retain a sizable proportion of the total produce for self-consumption and thus create conditions for the underestimation of national income.

Net Value Added

For the correct estimation of the national income according to output method, the concept of 'net value added' has proved very useful.

In this method of valuation of product, duplication of counting can be avoided. The term 'value added' implies that only the value added by each industry to the -raw materials or other goods and services that it bought from other industries ,before passing 0n the products to the next stage be included for the purpose of national income—estimation. In this method, the intermediate inputs are not ignored, but since only the value added embodied at each stage is included in the final total, double counting is automatically overruled. We may explain the value added technique as follows:

Table: Estimation National Income by Value Added

Stage	Industry	Selling price	Cost price	Value Added (Rs.)
First	A	60	0	60
Second	B	90	60	30
Third	C	100	90	10
Total		250	150	100

In Table, Industry A sells wood to industry for Rs. 60. In the second stage of production Industry B which is a manufacturer of chairs sells chairs to Industry C for Rs. 90. In the third stage, Industry C which is a dealer in furniture sells chairs to consumers for Rs. 100. Now if we go by gross value, then the total value of chairs would be Rs. 250. But, in reality, the economy is getting chairs worth Rs. 100 (the final value of product). The mystery could be resolved with the help of the

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value-added method Industry A did not use any intermediate input and sold wood for. Rs. 60. Hence, the value added by Industry A is Rs. 60. Industry B purchased raw material in the form of wood for Rs. 60 and sold it for Rs.90 after transforming it into chairs. So the value added by industry B is Rs. 30. Finally, Industry C purchased chairs for, Rs. 90 and sold them to consumers for Rs. 100. It means that the value added by Industry C is only Rs. 10. Therefore the value added at the three stages of production is Rs. 100.

When national income is computed from the viewpoint of goods and services produced in an economy, it is called product method, output method or value added method. This method approaches national income from the output side. According to this method, the economy is divided into different sectors like Agriculture, mining, manufacturing, Commerce, Transport and so on. Then gross domestic product at market price is obtained by adding up money values of all the production that has taken place in these sectors during a given year.

If we deduct depreciation from the value of gross domestic product, we get net domestic product at market prices.

If we add net factor income from abroad to net domestic product at market prices, we get net national product at market price. Net factor income from abroad may be positive as well as negative.

If we deduct indirect taxes from the value of net national product at market price and add subsidies to it, we get national product at factor cost. Value of net national product at factor cost will be value of national income. Thus,

National Income (Output - Method) = Money value of all the final goods and services produced in an economy during a certain period –Depreciation + Net factor income from abroad + Government subsidies – Indirect Taxes

Precautions: While calculating National income according to this method, some precautions must be taken into consideration. These are as follows:

i. Value of all final goods and services are added together.

ii. Value of intermediate goods and services are not added.

iii. Depreciation or replacement cost must be excluded.

iv. All the legal activities are added but illegal activities are not added.

EXPENDITURE METHOD:

The third method of measuring National Income is expenditure method. This is also called 'Income Disposal Method' or Consumption and Investment method.

Final expenditure method is also known as 'consumption and investment method' of measuring national income. In order to use this method we have to collect data relating to the consumption and investment or expenditure on final consumption by the community. Disposition of national income can take two forms. It can either be

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consumed by households, firms and government or may be used to create assets, i.e., investment; in brief, Y=C+I, where Y is national income, C is consumption expenditure, and I is investment expenditure.

a) Private consumption expenditure:

It consists of: (a) durable consumer goods like furniture, clothes, shoes, washing machines, TV sets. etc., (b) non-durables like food, drinks, tobacco, tooth paste, etc., and (c) services like hotels, restaurants, educational instituti9ns, hospitals, postal services, transport services, etc. While computing private consumption expenditure for the purposes of measuring national income, we have to exclude the expenditure of foreign visitors and include in it the expenditures of nationals abroad. Consumption expenditure is calculated by taking the sum of money income, spent by different consumers on goods and services. Figures relating to consumption expenditure may be collected from retail trade activities taking place in a year's time. However, many commodities and services do not enter into the monetary sector and, therefore, remain excluded, from the national income.

b) Government consumption expenditure:

It consists of compensation of employees and net purchase from business enterprises and rest of the world. It should be noted that 'transfer payments' to residents and, foreigner; should never be included in the government expenditure. It is so, because transfer payments do not fall in the purview of production process, they are simply transfers of purchasing power from one hand to another. Government consumption expenditure also includes expenditure on services. These services include public hospitals, parks, transportation and communication, educational institutions, etc. Figures relating to government consumption expenditure may be collected from the State budgets. In case of smaller government units, it may be collected by conducting sample surveys.

c) Investment expenditure:

Disposition of income may also take the form of investment expenditure. The use of the term 'investment' in the national income accounts has a different meaning to that of its generalized meaning. For example, you may consider your purchase of a share of D.C. M. Company as an investment. However, from the nation's point of view it is not an investment but simply a transfer of purchasing power or ownership of money title. Investment refers to that part of current output which takes the form of additions to or replacement of real productive assets. Suppose in 1997 the total value of assets in the Indian economy was Rs. 3,000 crores, and in 1998 the net assets are valued at Rs. 3,200 crores. It means that the net value of investment during 1997-98 is Rs. 200 crores. In brief:

Investment = Present Value of Assets - Value of Assets in the previous year.

In order to attain the net value of investment we have to deduct the cost of depreciation from the, gross investment. There are three major categories of investment in the GNP accounts:

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i. **Business fixed investment:**

It consists of business purchase of durable capital assets like machinery, factory buildings, stores, etc.

ii. **Residential construction:**

It consists of both single family dwellings for occupancy or for rental purposes.

iii. **Change in business inventories:**

It is that part of output that is absorbed. by business firms as an increase in their stocks of finished goods, goods in process, and raw materials.

Expenditure on investment may be calculated by 'commodity flow method' and 'capital expenditure method'. In the commodity flow method the net value added in private construction of residential and other building, new transportation and communication structures, net increase in livestock and other non-manufacturing stocks are added to the value of manufactured goods. On the other hand, in the capital expenditure method data are collected from questionnaires on the purchases of capital goods; tax data, etc.

Income generated in an economy through the production of goods and services can be disposed either on the consumption of goods and services or investment. Thus, we can get national income by adding all consumption expenditure and investment expenditure made by all individuals as well as government of a country during a year. Thus,

National Income (Expenditure Method) = Individual Consumption + Private investment + Government Consumption + Government Investment

Hence, National Income can be obtained by adding:

i. Whatever individual spends on consumer goods and services is called individual consumption expenditure.

ii. Whatever business spends on replacement, renewals and new investment is called private investment.

iii. Whatever government spends on purchase of goods and services is called government consumption expenditure.

iv. What foreign countries spend on the goods and services of the national economy and what this economy spends on the output of the foreign countries i.e. exports minus imports, is called net foreign investment or government investment.

Precautions: While Computing National Income from expenditure method, we should take following precaution:

i. Expenditure on second - hand goods should not be included in national income.

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ii. Expenditure on intermediate goods and services should also not be included in national income.

IMPORTANCE OF NATIONAL INCOME ESTIMATES:

1. National Income estimates reveal the overall production performance of the economy.
2. National Income estimates help to know whether the economy of the country is growing, stagnant or declining.
3. It shows the contribution made by various sectors of the economy such as agriculture, industry, etc. to the national income of the country. Thus, it provides information regarding the structure of the economy.
4. Trends in the growth of National Income provide an important tool for economic planning.
5. National Income estimates of various countries help to compare the help to compare the standards of living and the levels of economic welfare of the people living in those countries.

DIFFICULTIES IN THE MEASUREMENT OF NATIONAL INCOME

The correct estimation of national income is by no means an easy task. Difficulties of various kinds are generally faced in the measurement of national income. These difficulties may be classified into two categories: (i) Conceptual difficulties or Theoretical difficulties, and (ii) Practical difficulties.

Conceptual difficulties: These difficulties relate to the various concepts of national income. Some of the important conceptual difficulties are as follows:

1) **Determination of intermediate and final goods:**

The national income of a country consists of only final goods and services. Final goods refer to those goods which are readily available for consumption. Final goods are required for their own sake. While estimating the national income, it is always not possible to make a clear distinction between intermediate goods and final goods. For example, cotton used at a surgical Clinic is the final product for a doctor, but if the same cotton is used by the cotton milt to manufacture cloth, it will be treated as intermediate product. To stretch this example further, if this cloth manufactured by Delhi Cloth Mills is used by Wings or Liberty Company to manufacture ready-made garments, this cloth will be regarded as an inter-mediate product.

2) **Services without remuneration:**

In our daily life we observe a father teaching his son, a mother taking care of her child, a housewife looking after the household affairs, and so on. No factor payment is made for these services, and therefore, they do not form part of the national income. But if the same services are provided by a tutor, a baby-keeper and a house-maid, respectively, factor payments shall have to be made. So, in the changed circumstance the same services will be included in the national income.

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3) Transfer payments:

Transfer payments refer to those payments for which e receive has not to perform any economic' activity. Pocket allowance given to a son, by his father, or the pension paid by the government to the retired employees, are a few examples of transfer payments Transfer payments are the sources of income for the households and the business firms, but these do not form part of the national income.

4) Pricing of products:

Valuation of the final products for the purposes of national income estimation is a difficult task. We know that the prices change every month, every week, and in certain cases from day to day; therefore, which price should be chosen to ascertain the money value of the products, is really a tough choice. Besides, we find different typed of prices existing in the market, e.g., wholesale price, retail price, etc. Which of these prices should be used to evaluate the money value of products is a, difficult task.

5) Income of the foreign companies:

It is again a matter of controversy, whether the income of the foreign firms should be included in the national income or not. It is suggested that the income which the foreign firms retain in the country must form part the national income while the income which they send abroad should not be included in the national income.

Practical difficulties:

Different types of practical difficulties arise in the estimation of national, income. More important difficulties are as follows:

1) Non-monetized sector:

A large part of the underdeveloped countries consists of non-monetized sector, Non-monetized sector refers to that part of the economy where the exchange transactions are not performed in money or in order words, and barter system of exchange prevails in the non-monetized sector. Goods which do not enter into the monetary sector are thus excluded from the national income.

2) Lack of occupational specialization:

It means that a person performs a number of economic activities at one and the same time. Consequently, an individual has different sources of earnings at one and the same time. Far example, a teacher teaches in the school and also takes private tuitions in extra time or a farm-labourer works on the farm and also works in a factory in the off season, and so on. It becomes impossible to trace out, the main source of earning of an individual in such cases. In the absence of adequate, information about the source of income, a large part of income remains excluded from the national income.

3) Non-availability of reliabie data:

This difficulty arises mainly in the underdeveloped countries where majority of people are living in the world of dark letters. Illiterate people neither

Check Your Progress

4. How national income can be computed by income method?
5. What is the formula for calculating NDP?

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understand the importance of the income-data, nor can they maintain proper records in this respect. Sometimes, the producers, in order to evade income tax, deliberately distort information relating to their incomes. Sometimes, the enumerators do not possess requisite knowledge of collecting, classifying and analysing the data. Enumerators and investigators vitiate investigations by suing their personal bias and prejudices. National income estimation based upon inadequate and inaccurate statistics need not be dependable.

4) **Goods for self-consumption:**

Producers of final goods retain a part of their produce for self-consumption. For example, a farmer retains a part of the total crap far personal consumption, or a weaver retains a part of the produced cloth far self-consumption, and the like. Goods which, are retained by the producer for personal consumption do not fetch, money price, and are therefore excluded from the national income.

5) **Double counting:**

Many goods and services appear more than once in the national income estimation. It is not always possible to make a clear distinction between intermediate goods and final goads. Likewise, whether the durable goods like building, furniture, machines, etc., should form part of a year's national income or should be continuously included in the national income till these are finally consumed. We 'can further take the example of goods and services which satisfy communal wants The government constructs roads, parks, hospitals, bridges, etc., far the welfare of the masses, but different people derive different utilities from these services. How to make allowance for such services in the national income is again a difficult problem.

Thus we find that almost all the countries of the world, irrespective of then economic and social structure, face innumerable difficulties in the estimation of national income. Though it, is impossible to remove all these difficulties completely, countries, however, mal work hard to develop a well-knit system of income-expenditure data to make the national income estimates more dependable.

STANDARD OF LIVING

Measurement of the Standard of Living

The value of this year's national income is a useful measure of how well-off a country is in material terms. However, inflation increases the *money* value of national income but does not provide us with any more goods to consume. *Real national income* is found by applying the equation:

Real national income = Money national income/Retail price index x 100.

The *standard of living* refers to the amount of goods and services consumed by households in one year. It can be found by applying the equation:

Standard of living = Real national income/Population

A high standard of living means households consume a large number of goods and services.

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A second method of calculating living standards is to count the percentage of people owning consumer durables such as cars, televisions, etc. An increase in ownership indicates an improved standard of living.

A third method of calculating living standards is by noting how long an average person has to work to earn enough money to buy certain goods. If people have to work less time to buy goods, then there has been an increase in the standard of living.

Interpretation of the Standard of Living

An increase in the standard of living may not mean a better life-style for the majority if

- Only a small minority of wealthy people consume the extra goods.
- Increased output of certain goods results in more noise, congestion and pollution.
- Leisure time is reduced to achieve the production increase.
- There is an increase in the amount of stress and anxiety in society.

CASE STUDY:

National income

National income is the total value a country's final output of all new goods and services produced in one year. Understanding how national income is created is the starting point for macroeconomics. The national income identity This relationship is expressed in the national income identity, where the amount received as national income is identical to the amount spent as national expenditure, which is also identical to what is produced as national output. Throughout macroeconomics the terms income, output and expenditure are interchangeable.

National income accounts

Since the 1940s, the UK government has gathered detailed records of national income, though the collection of basic data goes back to the 17th Century. The published national income accounts for the UK, called the 'Blue Book', measure all the economic activities that 'add value' to the economy.

Adding value

National output, income and expenditure, are generated when there is an exchange involving a monetary transaction. However, for an individual economic transaction to be included in aggregate national income it must involve the purchase of newly produced goods or services. In other words, it must create a genuine addition to the 'value' of the scarce resources. For example, a transaction that involves selling a second-hand good, and which was new two years ago does not add to national income, though the original production and purchase does. Transactions which do not add value are called transfers, and include second-hand sales, gifts and welfare transfers paid by the government, such as disability allowance and state pensions.

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The creation of national income

The simplest way to think about national income is to consider what happens when one product is manufactured and sold. Typically, goods are produced in a number of 'stages', where raw materials are converted by firms at one stage, then sold to firms at the next stage. Value is added at each, intermediate, stage, and, at the final stage, the product is given a retail selling price. The retail price reflects the value added in terms of all the resources used in all the previous stages of production.

Final output

In accounting terms, only the value of final output is recorded. To avoid the problem of double counting, only the value of the final stage, the retail price, is included, and not the value added in all the intermediate stages - the costs of production, plus profits. In short, national income is the value of all the final output of goods and services produced in one year.

Example

For example, consider the production of a motor car which has a retail price of £25,000. This price includes £21,000 for all the costs of production (£6,000 for components, £10,000 for assembly and £5,000 for marketing) plus £4,000 for profit. To avoid double-counting, the national income accounts only record the value of the final stage, which in this case is the selling price of £25,000.

SUMMARY:

- National Income is the money value of all final goods and services produced by a country during a period of one year.
- National Income includes different types of goods and services, since these goods are measured in different physical units i.e. food grains and pulses are measured in kilograms, milk in liters and cloth in meters etc. and services may also be of different types like services of doctors, teachers, engineering etc.
- GDP is the aggregate money value of all final goods and services produced in the domestic territory of a country during an accounting year.
- Gross National Product is defined as the sum of the gross domestic product and net factor incomes from abroad.
- Net National Product means the total value of all the final goods and services produced in an economy during a certain period after allowing for depreciation.
- Personal Income refers to the income actually received by individuals or households in a country during one accounting year.
- Private income is income obtained by private individuals or firms from any source and the retained income of the corporations.
- Disposable Income is that part of personal income which is available to individuals and households for actual consumption.

- The standard of living refers to the amount of goods and services consumed by households in one year.

ANSWERS TO 'CHECK YOUR PROGRESS'

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1. Private income is income obtained by private individuals or firms from any source and the retained income of the corporations.
2. Wage income refers to the income received by the employees in cash and in kind. These employees must be the normal residents of the country.
3. The standard of living refers to the amount of goods and services consumed by households in one year.
4. **National Income (Income Method) = Wages + Rent + Interest + Profit + Income of self employed + Net factor income from abroad**
5. **NDP = GDP-Depreciation**

TEST YOURSELF :

Long Question:

1) What is meant by 'National Income'? How would you measure the national income of a country?
2) Discuss the methods of measuring national income.
3) What are the problems in estimation of national income?
4) Write a short note on:
   i) Gross Domestic Product
   ii) Gross National Product
   iii) Personal Income
   iv) Private Income
   v) Disposable Income
5) What do you mean by Factor Income? Classify factor income.
6) Explain the term Standard of Living.

Short Questions:

1) Define National Income.
2) What do you mean by Circular flow of Income?
3) What is Gross Domestic Product?

4) Explain GDP at factor cost.

5) Define Personal Income.

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FURTHER READING

- Managerial Economics: P.L.Mehta
- Raj Kumar Gupta
- K.N. Devadi

9 INDIAN ECONOMY

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The Chapter Covers :

- ECONOMICS OFDEVELOPMENT
- OBSTACLES TO ECONOMIC DEVELOPMENT
- INDIAN ECONOMY
- MEANING OF POPULATION
- THEORIES OF POPULATION
- CRITICISM
- OPTIMUM THEORY OF POPULATION
- COMPARISON BETWEEN MALTHUSIAN & OPTIMUM THEORIES
- DEFECTS OF OPTIMUM THEORY:
- POPULATION OF INDIA
- CAUSES OF RAPID GROWTH OF POPULATION IN INDIA:
- TYPES OF UNEMPLOYMENT
- BUDGET
- FISCAL DEFICIT:

ECONOMICS OFDEVELOPMENT

An economy is a system in which productive units use scarce resources to produce a variety of marketable products (goods and services) that satisfy human needs. The term 'scarcity' means that resources are limited, have a cost and are capable of being put to alternative uses.

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Economic development is a complex process. It is influenced by natural resources and both economic and non-economic factors. Role of natural resources has always been recognized in economic development. As a matter of fact, natural resources often decide the limits of development. Among the economic factors, which determine the development process in any country, the most prominent ones are the available capital stock and the rate of its accumulation, capital-output ratio in various sectors, agricultural surplus, conditions in foreign trade and economic- system. In addition, some non-economic factors such as size and quality of human resources, political freedom, social organization, technical know-how and general education, absence of corruption and above all, will to develop on the part of the people, play an important role in determining the pace and direction of development.

Evolution of Concept of Economic Development

Till the 1960s the"term 'economic development' was often used as a synonym of 'economic growth' in economic literature. Now economic development is no longer considered identical with economic growth. It Is taken to mean growth plus progressive changes in certain crucial variables which determine the well-oeing of the people. There are qualitative dimensions in the development process which may be missing in che growth of an economy expressed in terms of an increase in the national product or the product per capita. Development economists are no longer impressed by the growth performance of a country which gets reflected in the rise in its GDP (or GNP); they now concentrate more directly on the development process.

Traditional Approach

In the present day development economics, one finds broadly two main approaches to the concept of economic development. The first one often known to be the traditional approach defines development strictly in economic terms. For the exponents of traditional approach economic development implies a sustained annual increase in GNP (or GDP) at rates varying from 5 to 7 per cent or more together with such alteration in the structure of production and employment that the share of agriculture declines in both, whereas that of the manufacturing and tertiary sectors increases. The policy measures thus suggested are the ones which induce industrialization at the expense of agricultures development.

New Economic View of Development

Having realized that about 40 per cent ofthe developing world's population had not benefited at all from economic growth during the 1950s and 1960s an increasing number of economists called for the rejection ofthe narrow definition of economic development. During the i 970s they re-defmed the concept of economic deveiopment in terms of the reduction or elimination of poverty, inequality and unemployment in the context of a growing economy.

Economic development is thus a process with noble ideals and backward countries without exception are endeavoring to make it successful. This characterization of development with lofty goals is certainly very attractive; at the same time realization of these objectives has been found to be a really difficult task.

Determinants of Economic Development

There are mainly two types of determinants (factors) which influence the economic development of a country. These factors are:

1) Economic Factors
2) Non-Economic Factors

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Economic Factors in Economic Development

In a country's economic development the role of economic factors is decisive. The stock of capital and the rate of capital accumulation in most cases settle the question whether at a given point of time a country will grow or not. There are a few other economic factors which also have some bearing on development but their importance is hardly comparable to that of capital formation. The surplus of foodgrains output available to support urban population, foreign trade conditions and the nature of economic system are some such factors whose role in economic development has to be analyzed:

1) **Capital Formation:** The strategic role of capital in raising the level of production has traditionally been acknowledge in economics. It is now universally admitted that a country which wants to accelerate the pace of growth, has no choice but to save a high ratio of its income, with the objective of raising the level of investment. Great reliance on foreign aid is highly risky, and thus has to be avoided. Economists rightly assert that lack of capital is the principal obstacle to growth and no developmental plan will succeed unless adequate supply of capital is forthcoming.

   Whatever be the economic system, a country cannot hope to achieve economic progress unless a cenain minimum rate of capital accumulation is realized. However, if some country wishes to make spectacular strides, it will have to raise its rate of capital formation still higher.

2) **Natural Resources:** The principal factor affecting the development of an economy is the natural resources. Among the natural resources, the land **area** and the quality of the soil, forest wealth, good river system, minerals and oil-resources, good and bracing climate, etc., are included. For economic growth, the existence of natural resources in abundance is essential. A country deficient in natural resources may not be in a position to develop rapidly. In fact, natural resources are a necessary condition for economic growth but not a sufficient one. Japan and India are the two contradictory examples.

   According **to Lewis,** "Other things being equal man can make better use of rich resources than they can of poor". In less developed countries, natural resources are unutilized, under-utilized or mis-utilized. This is one of the reasons of their backwardness. This is due to economic backwardness and lack of technological factors.

   According to Professor Lewis, "A country which is considered to be poor in resources may be considered very rich in resources some later time, not merely because unknown resources are discovered, but equally because new

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methods are discovered for the known resources". Japan is one such country which is deficient in natural resources but it is one of the advanced countries of the world because it has been able to discover new use for limited resources.

3) **Marketable Surplus of Agriculture:** Increase in agricultural production accompanied by a rise in productivity is important from the point of view of the development of a country. But what is more important is that the marketable surplus of agriculture increases. The term 'marketable surplus' refers to the excess of output in the agricultural sector over and above what is required to allow the rural population to subsist. The importance of the marketable surplus in a developing economy emanates from the fact that the urban industrial population subsists on it. With the development of an economy, the ratio of the urban population increases and increasing demands are made on agriculture for foodgrains. These demands must be met adequately; otherwise the consequent scarcity of food in urban areas will arrest growth.

   In case a country fails to produce a sufficient marketable surplus, it will be left with no choice except to import foodgrains which may cause a balance of payments problem. Until 1976-77, India was faced with this problem precisely. In most of the years during the earlier planning period, market arrivals of foodgrains were not adequate to support the urban population.

   If some country wants to step-up the tempo of industrialization, it must not allow its agriculture to iag behind. The supply of the farm products particularly foodgrains, must increase, as the setting-up of industries in cities attracts a steady flow of population from the countryside.

4) **Conditions in Foreign Trade**: The classical theory of trade has been used by economists for a long time to argue that trade between nations is always beneficial to them. In the existing context, the theory suggests that the presently less developed countries should specialize in production of primary products as they have comparative cost advantage in their production. The developed countries, on the contrary, have a comparative cost advantage in manufactures including machines and equipment and should accordingly specialize in them.

   In the recent years, a powerful school has emerged under the leadership of Raul Prebisch which questions the merits of unrestricted trade between developed and under-developed countries on both theoretical and empirical grounds.

   Foreign trade has proved to be beneficial to countries which have been able to set-up industries in a relatively short period. These countries sooner or later captured international markets for their industrial products. Therefore, a developing country should not only try to become self-reliant in capital equipment as well as other industrial products as early as possible, but it should also attempt to push the development of its industries to such a high level that in course of time manufactured goods replace the primary products as the country's principal exports.

   In countries like India the macro-economic interconnections are crucial and the solutions of the problems of these economies cannot be found merely through the foreign trade sector or simple recipes associated with it.

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5) Economic System: The economic system and the historical setting of a country also decide the development prospects to a great extent. There was a time when a country could have a laissez faire economy and yet face no difficulty in making economic progress. In today's entirely different world situation, a country would find it difficult to grow along the England's path of development.

The Third World countries of the present times will have to find their own path of development. They cannot hope to make much progress by adopting a *laissez faire* economy. Further, these countries cannot raise necessary resources required for development either through colonial exploitation or by foreign trade. They now have only two choices before them:

i) They can follow a capitalist path of development which will require an efficient market system supported by a rational interventionist role of the State.

ii) The other course open to them is that of economic planning.

The latest experiments in economic planning in China have shown impressive results. Therefore, from the failure of economic planning in the former Soviet Union and the erstwhile East European socialist countries it would be wrong to conclude that a planned economy has built-in inefficiencies which are bound to arrest economic growth.

Non-Economic Factors in Economic Development

From the available historical evidence, it is now obvious that non-economic factors are as much important in development as economic factors. Here we attempt to explain how they exercise influence on the process of economic development:

1) **Human Resources:** Human resources are an important factor in economic development. Man provides labor power for production and if in a country labor is efficient and skilled, its capacity to contribute to growth will decidedly be high. The productivity of illiterate, unskilled, disease ridden and superstitious people is generally low and they do not provide any hope to developmental work in a country. But in case human resources remain either unutilized or the manpower management remains defective, the same people who could have made a positive contribution to growth activity prove to be a burden on the economy.

2) **Technical Know-How and General** Education: It has never been doubted that the level of technical know-how has a direct bearing on the pace of development. As the scientific and technological knowledge advances, man discovers more and more sophisticated techniques of production which steadily raise the productivity levels. **Schumpeter** was deeply impressed by the innovations done by the entrepreneurs, and the attributed much of the capitalist development to this role of the entrepreneurial class. Since technology has now become highly sophisticated, still greater attention has to be given to Research and Development for further advancement. Under assumptions of a linear homogeneous production function and a neutral technical change which does not affect the rate of substitution between capital and labor, Robert M. Solow has observed that

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the contribution of education to the increase in output per man hour in the United States between 1909 and 1949 was more than that of any other factor.

3) **Political Freedom:** Looking to the world history of modern times one learns that the processes of development and under-development are interlinked and it is wrong to view them in isolation. We all know

that the under-development of India, Pakistan, Bangladesh, Sri Lanka, Malaysia, Kenya and a few other countries, which were in the past British colonies, was linked with the development of England. England recklessly exploited them and appropriated a large portion of their economic surplus.

Dadabhai Naoroji has also candidly explained in his classic work 'Poverty and Un-British Rule in India' that the drain ofwealth from hidia under the British was the major cause of the increase in poverty in India during that period, which in turn arrested the economic development of thc country.

4) **Social Organization:** Mass participation in development programs is a precondition for accelerating the growth process. However, people show interest in the development activity only when they feel that the fruits of growth will be fairly distributed. Experiences from a number of countries suggest that whenever the defective social organization allows some elite groups to appropriate the benefits of growth, the general mass of people develop apathy towards State's development programs. Under the circumstances, it is futile to hope that masses will participate in the development projects undertaken by the State.

India's experience during the whole period of development planning is a case in point. Growth of monopolies in industries and concentration of economic power in the modern sector is now an undisputed fact. Furthermore, the new agricultural strategy has given rise to a class of rich peasantry creating widespread disparities in the countryside.

5) **Corruption:** Corruption is rampant in developing countries at various levels and it operates as a negative factor in their growth process. Until and unless these countries root-out corruption in their administrative system, it is most natural that the capitalists, traders and other powerful economic classes will continue to exploit national resources in their personal interests. The regulatory system is also often misused and the licenses are not always granted on merit. The art of tax evasion has been perfected in the less developed countries by certain sections of the society and often taxes are evaded with the connivance of the government officials.

6) **Desire to Develop:** Development activity is not a mechanical process. The pace of economic growth in any country depends to a great extent onpeople's desire to develop. If in some country level of consciousness is low and the general mass of people has accepted poverty as its fate, ,then there will be little hope for development. According to Richard T. Gill, "The point is that economic development is not a mechanical process; it is not a simple adding-up of assorted factors. Ultimately, it is a human enterprise. And like all human enterprises, its outcome will depend finally on the skill, quality and attitudes of the men who undertake".

Significance of Economic Development

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The various benefits which accrue to the less developed countries through economic development are:

1) **Capital Formation:** There can be no two opinions about the fact that economic development depends upon capital formation. But it is also true that economic development helps in the formation of capital. Economic development helps in raising the productivity of agriculture, industry and thereby creating economic surplus. The economic surplus can be used for productive and development activities which in turn raises income, saving and capital formation. Thus, development and capital formation are mutually reinforcing.

2) **Exploitation of Natural Resources:** Economic development promotes scientific knowledge and technology, which in turn helps in the invention of new instruments, new apparatuses and techniques for the exploitation and preservation of natural resources.

3) **Development of Agriculture:** The study of economic development throws light on the new techniques and new methods. Actually, these are the boons of economic development. In India, the green revolution has been accomplished through the instrument of economic development. It would suffice to say that economic development revolutionizes agriculture.

4) **Development of Industries**: Development of industries is another gift of economic development. It is an admitted fact that agriculture and industry are complementary to each other. The development of these two sectors is interdependent. The developed agricultural sector helps in rapid industrialization.

5) Increase in National Output: Economic development helps in raising the agricultural and industrial productivity of a country. The expansion of these two sectors contributes in raising the level of national output.

   Economic development can serve as a generator of national income and harbinger of economic prosperity if price stability is ensured, otherwise, economic development will be a bitter pill for the masses of underdeveloped countries.

6) **Expansion of Social Services:** Another important gift of economic development is the expansion of social services (i.e., education, health services, roads, means of communications, electricity, etc.). As development proceeds, the demand for social services and the expansion of existing services arises. To cope with the rising demand for the expansion of social services, state governments attempt to make larger investment allocation for the purpose. This way the expansion of social services becomes a corollary of development.

7) **International Status**: As development proceeds, the public aspirations grow high. The demand for higher wages arises and that can be met by raising the levels of development tempo. This is possible through technological development. Countries grow richer with technological development and economic growth and thereby acquire esteem and recognition in the comity of nations.

8) **Take-Off:** The under-developed countries are more interested in achieving the stage of "take-off" as early as possible. This task can be accomplished through

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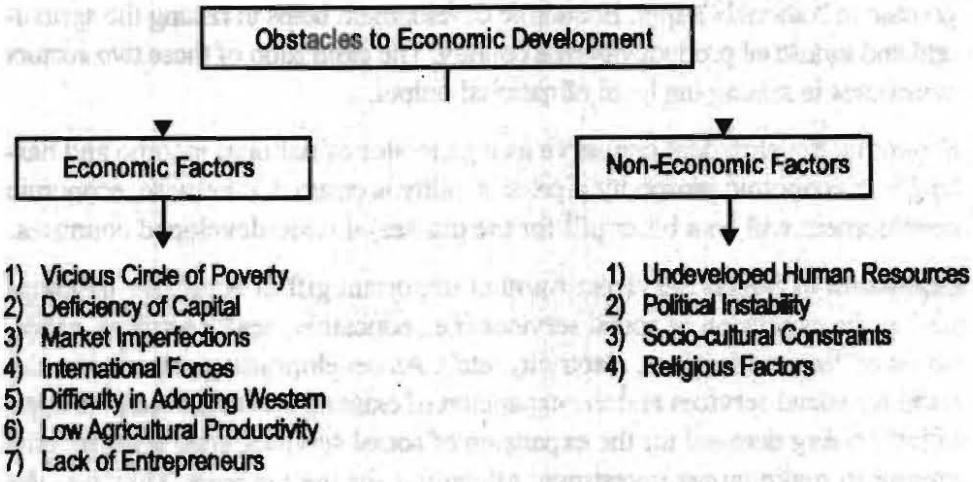
the instrument of economic development. AU the essential conditions of the "Take-off' can be met by the accelerated pace of economic development.

9) **Increase in Public Revenue:** Economic development raises the level of national output and the per capita income of the masses. Higher per capita income enhances the taxable capacity of the people. The government can collect larger revenues by exploiting higher taxable capacity of the people. This way, government can achieve the objective of fiscal reliance and can carry-on various development activities to promote national welfare. Another bright feature of fiscal self-reliance is that country will not be required to depend upon external aid or foreign assistance. Foreign capital import can be dispensed with when large development endeavor is made at home. Thus, economic development provides fiscal self-reliance to the government.

10) **Social Significance**: Economic development exerts a greater control over the environment, and thus increases the range of human choice. Though it may not necessarily result in greater human happiness, it increases freedom as the effort in relation to output is reduced. Less work would be required to satisfy human wants and greater leisure would be available for fostering higher values of life.

OBSTACLES TO ECONOMIC DEVELOPMENT

Broadly speaking, the features of an under-developed economy create obstacles inthe way of economic development, and hamper economic progress. These features emerge out of economic, social, political, religious and institutional factors. The factors discouraging economic development may be classified into economic and non-economic factors which are as below:



Economic Factors

The important economic factors which obstacles to economic development are:

1) **Vicious Circle of Poverty:** Most important feature of under-developed countries is their dependence on vicious circle of poverty which may be considered as the highest bottleneck in the process of their economic development. Poverty is not only distressing but it is also demoralizing.

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2) **Capital Deficiency:** Another basic obstacle to economic development in poor countries is the existence of capital deficiency which is reflected in two ways;

   i) The amount of capital per head available is low, and

   ii) The current rate of capital formation is aiso low.

3) **Market Imperfections:** Another important obstacle to economic development in under-developed countries is their dependence on market imperfections.

4) **International Forces:** Certain international forces have also been operating against development of under developed countries and are responsible for keeping them backward. Some of the critics maintain that international forces have operated in the past to limit the development of poor countries while the others of socialistic bent of mind have raised the issues of imperialism and colonialism.

5) **Difficulty in Adopting Western Technology:** Another serious obstacle to economic development in poor countries arises out of their difficulty in adopting modern western technology. Most hopes of progress in these countries are pinned with the adoption of modem technology developed in advanced countries.

6) **Low Agricultural Productivity**: The agriculture contributes a very large share to their exports and national income. But there is low productivity in agriculture because it is controlled and governed by the old custom and traditions.

Non-Economic Factors

Non-economic factors imply social, cultural, religious and political factors that cause retardation in the process of development.

1) **Undeveloped Human Resources:** The constraint of undeveloped human resources has also played an important role in making such economies backward or under-developed for So long a time. It is an important obstacle to economic growth in less developed countries.

2) **Socio-Cultural Obstacles:** Socio-cultural rigidities are anotner type of obstacles to economic development of under-developed countries. Rapid economic growth requires a particular attitude of mind and highly elastic institutional pattern.

3) Political Instability: Frequent changes of government and threats of external aggression or internal subversion have created a situation of political instability in several under-developed countries.

4) Religious Factors: Too much of religion makes people indifferent towards economic activities. They spend most of their time in meditation and prayers and devote little time to fruitful and productive work.

INDIAN ECONOMY

Introduction to Indian Economy

India is the fifth largest economy in the world and has the second largest GDP among emerging economies, based on purchasing power parity.

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Inl994-95, the GDP was estimated at Rs. 8,541 billion (US$ 272 billion) at current prices. About 31% of the GDP originated in the primary sector, around 28% in the manufacturing sector and 41% in the services sector. More than two-thirds of the working population is employed in the primaiy sector (mainly agriculture),while the secondary sector (mainly manufacturing) and the tertiary sector (mainly services, trade and commerce) employ around 14.5% and 20.5%, respectively, of the workforce.

The Indian economy moved to a high growth path in the 1980s, with economic growth averaging 5.5% per annum through the decade. This was possible because of a high investment rate of over 22% of the GDP, financed mainly (over 90%) by domestic savings. Annual increase in employment was estimated at 4.3 million in the 1980s. Industrial growth averaged over 7% annually. Population growth, which is continually decelerating had come-down to 2.1% per annum.

India's major achievements are:

1) Advances in agriculture, making India one of the largest foodgrain producers in the world,
2) A broad-based and diversified industrial sector,
3) A modern financial sector spread across the country,
4) A well developed market infrastructure, and
5) An educational system that produces a large pool of high quality human resources.

While the state played an active role in guiding industrial activity, private enterprise and market mechanisms developed well in agriculture, manufacturing, trading and in the services sector. The economy was, however, largely shielded from foreign competition, both in production and trade.

India as a Developing Economy

India is a low income developing economy. There is no doubt that nearly one-fourth of its population lives in conditions of misery. Poverty is not only acute but is also a chronic malady in India. At the same time, there exist unutilized natural resources. It is, therefore, quite important to understand the basic characteristics of the Indian economy, treating it as one of the poor but developing economies of the world.

The main characteristics are as follows:

1) **Low per capita Income:** Per capita income level is much low in India as compared with other developed countries. According to World Development Report (2006) India's per capita income was $ 620 in 2004. The per capita income in India is about 1/71 ofUS level of per capita income. At present a new modified system of comparing and calculating per capita income has been adopted at international level in which the per capita income ofa country is calculated on the basis of purchasing power of currency of that particular country; while old traditional method was based on exchange rate of currencies.

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2) **Disparities in Income Distribution:** High degree of disparity in income/wealth distribution is found in India. Through the objective of establishing a socialistic society was adopted in Second Five Year Plan but truly speaking it has not yet achieved. According to the data shown by NSS, 39% of rural population possesses **only** 5% of all **the** rural **assets** while, on the other hand, 8% top households possess 46% of total rural **assets.** Income disparities are somewhat more intensive in urban areas as compared with those of rural areas.

3) **Dominance of Agriculture and Heavy Population Pressure on Agriculture:** Land-labor ratio **is not** favorable in **India. Per** capital and availability is very lowand, on the contrary, labor use per hectare is very high in India. Apiculture sector today provides livelihood to about 64% of the total population contributes nearly 21% of Gross Domestic Product (GDP) and accounts for about 18% share of total value of country's exports.

1) 4) Over-Population: India is over-populated. In every decade Lidian population gets increased by about 24%. During 1991-2001, population increased by 21.5%. The compound annual growth rate of population during 1991-2001 was 1.95% against the level of2.16% during the preceding decade (1981-91). With this high growth rate of population about 1.7 crore new persons are added to Indian population every year. According to 2001 census, the total Indian population stands at a high level of 102.87 crore which isl6.7% of the world's total population. To maintain this 16.7% of world population India holds only 2.42% of total land area of the world.

5) Unbalanced Economic **Development:** India has not yet achieved the goal of balanced economic development. According to latest World Development Report about 64% of total labor force is dependent on agriculture. 16% on industries and the rest about 20% on trade, transport and other services.

6) Lack of Capital: Savings are low in India due to low national income and high consumption expenditure. Gross domestic savings which were 231% of GDP in 1990-91, increased upto a level of29.1% in 2004-05 Similarly gross domestic capital formation, which was 23.3% in 1993-94, increased upto the level of27.2% in 2003-04 and further increased to 30-1% in 2004-05.

7) Lack of industrialization: India lacks in large industrialization based on modern and advanced technology, which fails to accelerate the pace of development in the economy. Average annual growth rate of industrial sector (including mining, manufacturing and power generation) was 8.5% in the Seventh Plan against the target of 8.7% p.a. This rate was only 3.5% p.a. during the Sixth Plan. During 8th Plan, the annual average growth rate of industrial sector was 8.1% against the target of 7.6% p.a. During 9th plan, the annual industrial growth has been recorded tobe 4-5% which is much below the target. For 2002-03 and 2003-04, industrial growth rate was recorded at 7.0% and 7.6% respectively which improved to 8.4% in 2004-05 but slowed down to 8% during 2005-06.

8) Operation **of Economic Vicious Circles:** Economic vicious circles are still in operation in Indian economy and as a result poverty has become both cause and effect in the country. The intensity of poverty has made these vicious circles unbreakable in the country.

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9) **Market** Imperfections: Indian economy faces a number of market imperfections like lack of mobility among production factors from one place to the other **and** lack **of** specializations which hinder the optimum utilization of available resources. **AU** these market imperfections **and their** results are important reasons for undeveloped state ofIndian economy.

10) **Limited Availability of Transport and Communication Facilities:** Transport and communications facilities do play a vital role in economic development of **a** country like **India,** but these facilities are not yet extended to the required level. Transport facilities are not **available** in remote areas of the country due tc which industrial development is not equally distributed **among** various **parts of** the economy. It also hinders the process of exploiting available resources in **the** country.

11) **Existence of Traditional Society:** The **Indian** traditional society **is** still **facing a** number of social problems like traditions and customs, malpractices, superstitious **etc. Which** adversely affect the process of economic development, because these social obligations **do** increase **the** unproductive expenditure of the masses and hardly spare any saving for capital formation process?

Contribution of Different Sectors to Indian Economy

National income through industrial origin **refers** to studying national **income as** generated in different sectors of the economy. Proportionate contribution **of** different sectors **tends to change** with the process of growth. In the backward countries, the bulk of income **is** generated **in the** primary sector **of the** economy.

Central Statistical Organization has divided the economy into three basic sectors:

1) **Primary Sector:** The primary sector of the economy extracts **or** harvests products from the earth. The primary sector includes the production **of raw** material **and basic foods.** Activities associated with the primary sector include agriculture (both subsistence and commercial), **mining,** forestry, farming, grazing, hunting and gathering, fishing, and quarrying. The packaging and processing of the raw material associated with this sector is also considered to be **part** of this sector.

2) **Secondary Sector**: Secondary sector comprising of manufacturing, power generation, gas and water supply. The secondary sector of the economy manufactures finished good. All of manufacturing, processing, and construction lies within the secondary sector.

3) **Tertiary Sector/Service Sector:** The tertiary sector of the economy is the service industry. This sector provides services to the general population and to businesses. Activities associated with this sector includes retail and wholesale sales, transportation and distribution, entertainment (movies, television, radio, music, theater, etc.), restaurants, clerical services media, tourism, insurance, **banking,** healthcare, and law.

Composition of national income tends to change with the process of growth. This implies change in the proportionate contribution of different sectors of the economy.

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As development proceeds, the proportionate contribution of primary sector tends to decrease while that of the secondary and tertiary sectors tends to increase. Thus, the level of productive activity tends to improve in the secondary and tertiary sectors of the economy in relation to the primary sector. Table below shows the relative contribution of different sectors in developed and multi-developed countries of the world:

Table : Percentage Share of Different Sectors in CDP of Different Nations in Year 2006

Country	Primary Sector (Agriculture	Secondary Sector (Industry)	Tertiary Sector
Germany	1	30	69
U.S.A	1	22	77
UK	1	26	73
Japan	2	30	68
China	12	47	41
India	18	28	55
Pakistan	20	27	53

Table above shows that the contribution of primary sector to GDP is far less in developed countries than the under-developed ones. On the other hand the contribution of secondary and tertiary sectors, ¾ much more in developed nations than in the less developed ones.

In India, the composition of national income by industrial origin has tended to change over time, as summed-up in table below:

Table : Contribution of Different Sectors in National Income

Year	Primary Sector (Percentage)	Secondary Sector (Percentage)	Tertiary Sector (Percentage)
1950-51	61	14.5	24.5
1960-61	56.6	17	26.4
1970-71	48.5	20.6	30.9
1980-81	41.8	21.6	36.6
1990-91	33	27	40
2000-01	28.1	24.8	47.1
2006-07	18.5	26.4	55.1
2007-08	17.2	26.8	56

The table above shows that the relative contribution of different sectors in the country's National Income has tended to change over time in conformity with the level of economic development. The contribution of primary sector is gradually reducing. The contribution of territory sector is increasing at the faster rate. This change is a favorable change in the economy.

Check Your Progress

1) What do you mean by the Population?
2) Define the term Budget.
3) What is Fiscal deficit?

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Sectoral Growth Rates of Different Sectors in India

Sectoral growth rates, i.e., growth rates of agriculture, industry and services are shown in table below:

Item	Percentage Change over the Previous Year			
	2000-01	2005-06	2006-07	2007-08
1) Agriculture and allied activities	-0.2	6.0	2.7	2.6
2) Industry	6.4	9.6	10.0	9.4
i) Mining and quarrying	2.4	3.6	4.5	3.4
ii) Manufacturing	7.7	9.1	11.3	9.4
iii) Electricity, gas and water supply	2.1	5.3	7.7	7.8
iv) Construction	6.2	14.2	9.4	9.6
3) Services	5.7	9.8	11.2	10.7
i) Trade, hotels, transport and communication	7.3	10.4	13.0	12.1
ii) Financial, real estate and business services	4.1	10.9	11.1	11.7
iii) Community, social and personal services	4.8	7.7	7.8	7.0
4) Total GDP at factor cost	4.4	9.4	9.6	8.7

Table above makes it clear that agriculture sector is not performing well in Indian economy. Growth rate in industry and service sectors is higher than the overall GDP growth rate in India. Growth rate of industry and service sectors has entered in double digit. Low growth rate in agriculture sector is a serious concern.

Interdependence of Various Sectors

Different sectors of Indian economy, *viz.*, primary sector, secondary sector and tertiary sectors are interdependent. Interdependence of different sectors means that either one sector is selling its output to other sectors or it is purchasing inputs in the form of goods and services from other sectors. Output of primary sector becomes the input of secondary sector. In other words, primary sector gets market for its products by selling it to secondary sector and at the same time secondary sector gets inputs from primary sector for further

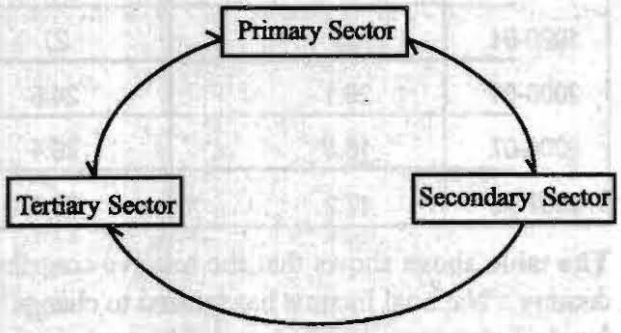

Figure : Interdependence of Various Sectors in the Economy

processing in industries. Similarly, service sector is helpful to both primary and secondary sector as it provides services to both these sectors. In other words, primary and secondary sectors are dependent on service sector for essential services like transportation, banking, insurance, communication, storage, trade, etc. Development of primary and secondary sectors is just not possible without these services. In the same way, primary and secondary , sectors create demand for service sector, i.e., because of demand by primary and secondary sector, the service-providers (like banks and insurance companies) are able to sell their services.

Interdependence of various sectors_ becomes clear from the following examples:

1) Farmers sell their produce to industries. Here, primary sector is supplying material to secondary sector. So farmers are getting market for their products while industrialists are getting essential inputs for their industry.

2) Industrialists sell agricultural equipments, fertilizers, and pesticides to farmers. Here secondary sector is supplying material to primary sector. So, industrialists are getting market for their products while farmers are getting inputs and equipments to enhance their productivity.

3) Transporters carry the products of primary and secondary sectors to the marketplace and bring the input from the market to the manufacturing place. Thus, service sector is selling its services to primary and secondary sectors while primary and secondary sectors get necessary facilities from service sector for marketing of goods and procuring inputs. For perishable products like milk, vegetables, fruits, bread, eggs, etc., the role of fast means of transportation (Service-sector) is very significant. For example, apples of Kashmir and oranges of Nagpur are sold throughout India because of good transportation facilities.

Primary Sector in India

Primary sector basically comprises of agriculture, forestry, fishing, mining and quarrying. Among all these agriculture sector is the major contributor of the primary sector.

Agricultural Sector

More than 65% of the country's population depends on the agricultural sector, which ironically produces only 23% of the GDP. In India, around 45 per cent of the total land is cultivated. Rice, wheat, pulses, and oilseeds dominate the agricultural production in India. Besides, crops like millet, corn (maize) and sorghum are also grown in large quantities. India is the largest producer of tea, jute and fibers like jute. Among livestock, cattle and buffalo are found maximum in India. Indian total milk production is the highest in the world. In terms of area, India tops the list of total irrigated land in the world. Among cereal production, India is placed third, being second largest producer of wheat and rice and the largest producer of pulses. Dairy framing, fishing and forestry are important parts of agricultural sector.

However, full potential of the Indian agriculture as a profitable activity has not been realized as yet. There are many issues plaguing the country's agricultural sector and they have been discussed subsequently.

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Trends in the Agricultural Sector

1) **Food Grain Production:** According to the Economic Survey report 2004-2005, the food grain production in India was estimated at 206.4 million tonnes for the fiscal year 2004-05. Rice contributes to the largest share of food grain production at around 42 per cent with wheat at 35 per cent. Rice is grown throughout the country with highest concentration in the eastern and the southern regions, while wheat is primarily grown in the northern region. The food grain production in India depends largely on monsoons.

   India is the world's fourth largest vegetable oil producer with an annual turnover of about $15billion, but the country imports nearly 40% of its annual need of 11 million tonnes of edible oil. This is because India imports items like palm oil and exports items like coconut oil, sunflower oil and soya oil.

2) Plantation Crops: India is the largest producer and consumer of tea in the world and accounts for about 27 per cent of the world production and 13% of the world trade. Among other plantation crops, coffee has contributed significantly to the Indian economy since independence. Indian coffee has created a niche in the market particularly famous of its good blending quality. Rubber is primarily produced in the states of Kerala and adjoining districts of Tamil Nadu.

3) Live Stock, Poultry and Fisheries: Livestock sector, which contributes milk and eggs, plays a significant role in meeting the animal protein requirement of the country. This sector has contributed about 6-6.5 per cent of the country's GDP in the recent years. The livestock sector also plays an important role in the utilization of the non edible agricultural by-products, besides being an important earner of foreign exchange.

4) Agricultural Credit: There has been a steady rise in the flow of agricultural credit in the Indian context. The agency-wise share of the credit flow to agriculture shows that commercial banks have accounted for the major share followed by regional banks and the rural banks. Realizing the need to enhance credit flow to agriculture, the government in consultation with the RBI, NABARD and other rural banks has announced a credit package for the agricultural sector, which aims at doubling the agricultural credit.

5} Irrigation: As efforts continue to increase the irrigation potential in the country, the last 40 years saw the gross irrigated area reach 85 million hectares. Flood forecasting has become an important activity over the years. Over 500 hydro-logical stations collect and transmit data through 400 wireless stations for issuing forecasts for 157 sites. About 5,000 forecasts are issued in a year with 94 per cent accuracy. India receives international support, with the World Bank as a primary source, for developing its water resources.

Main Areas of Weakness:

India's agriculture is highly sensitive to the variability in rainfall. Eighty per cent of the total rainfall over the Indian sub-continent occurs only during three moths (June-/August), as a result of the south West monsoon. While drought is a recurring problem in some areas of India, floods cause serious damages to the livelihood and agriculture in other areas. Climate variability has considerable social and economic

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consequences in India, where almost three quarters of the population relies directly or indirectly on agriculture for livelihood.

Irrigation is another major issue of concern for the Indian agricultural sector. More than 60 per cent of the country's agriculture is rain-fed. Apart from the states of Punjab, Haryana and Uttar Pradesh, most of the other states do not have high level of irrigation and depends more or less on the rainfall.

Apart from weak credit and insurance facilities, low land productivity and low level of mechanization are some of the weaknesses plaguing the Indian agricultural sector today.

Secondary Sector in India

Activities associated with the secondary sector include metal working and smelting, automobile production, textile production, chemical and engineering industries, aerospace manufacturing, energy utilities, engineering, breweries and bottlers, construction, and ship-building.

Industrial Sector

Industrial sector in India contributes a meager 27 per cent of the country's GDP. This is mainly because of the fact that India's competency lies in the services sector. In 2003-04 and 2004-05, the Index of Industrial Production (IIP) grew by 6.9 and 8.4 per cent respectively with the manufacturing sector being the driving force behind this growth with a contribution of almost 80 per cent. In the last 10 years, the highest growth rate of the IIP was achieved in 1995-96 with 13 per cent and the lowest being 2.7 per cent in 2001-02. The percentage of increase of the IIP during 1994-2005 is given below (See table below):

Table : Industrial Growth Rates

Annual Growth Rate of Industrial Production in Major Sectors of Industry (Based on the Index of Industrial Production) Base: 1993-1994 = 100

Period	Mining and Quarrying	Manufacturing	Electricity	Overall
Weight	10.47	179.36	10.17	100.00
1994-95	9.8	9.1	8.5	9.1
1995-96	9.7	14.1	8.1	13.0
1996-97	-1.9	7.3	4.0	6.1
1997-98	6.9	6.7	6.6	6.7
1998-99	-0.8	4.4	6.5	4.1
1999-00	1.0	7.1	7.3	6.7
2000-01	2.8	5.3	4.0	5.0
2001-02	1.2	2.9	3.1	2.7
2002-03	5.8	6.0	3.2	5.7
2003-04	5.1	7.2	5.0	6.9
2004-05	4.8	8.9	6.4	8.4

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1) **Automobile Industry:** During the period 2003-06, the automobile industry witnessed a growth rate of 15 to 20per cent. The improved quality and performance of the Indian automobiles has driven the export and acceptance in the global market. The export has increased to 4.8 lac units registering a growth rate as high as 55%. Globalization, foreign collaboration and tie-ups are the main reason for this surge in the export of automobiles. The reduction of the excise duties on passenger cars from 32 to 24 per cent, improvements in retail credits and reduction of tariffs has greatly fueled the growth of this industry.

2) **Gems and Jewelry:** India is the largest consumer of gold in the world followed by China. Indian Jewelry industry imports the raw materials, adds value and exports them. During the last three years, the export in this industry has increased by 15 to 22 per cent. India's gems and jewelry Promotion Council (IGJPC) aims at transforming India into a global diamond trading center. Before the pie-liberalization era, gold prices were kept artificially high and there were huge restrictions on the import of gold. The result of these policies led to the smuggling of gold in bulk quantities which were to be sold at higher price in the country. But since liberalization, this smuggling as been curbed. The main export destinations of Indian Jewelry are U.K. and Switzerland.

3) **Textile Industry:** The textiles sector has been one of major sources for foreign exchange earnings for India. The textile industry registered an export value of U.S. $10.1 billion in 2003-04 as compared to U.S. $9.6 billion in the previous year. One of the key strengths of the Indian textile industry is the abundance of raw materials with India being one of the major producers of fabrics in the world. The presence of low cost skilled labor and the growing domestic market can be considered as some of the other strengths of this industry. However, drawbacks for the country can be the fragmented nature of the industry which may be detrimental in India emerging as a world-class player, historical governmental regulations like the absence of exit options, lack of adequate economies of scale, low productivity of workers when compared to countries like China, and obsolete technology. India has a huge opportunity as far as the textile industry is concerned because of the implementation of the WTO agreement. The opportunities could be through concentration in R&D, introduction of new products and so on. The government has set-up an autonomous body called Confederation of Indian Textiles Industry (CITI) in order to help the industry to achieve global competitiveness and leverage the benefits through exports.

4) **Steel Industry:** The steel industry has been strong due to the strong growth of demand for steel in both China and in the domestic market, m 2003-04, the total finished steel production was 36.19 tonnes with a record growth rate of 7.5 per cent. The export of finished steel witnessed a growth of 17.6 per cent to 5.3 million tones in 2003-04. Some of the reasons for the successful steel production include improved technology and the thrust given for exporting steel from India. Automation of the routine blue collar jobs also helped in the transition of the Indian steel industry.

Tertiary Sector in India

Services include all economic activities whose output is not a physical product. A service is generally consumed at the time it is produced, and provides value in forms

such as convenience, amusement, timeliness, comfort, etc. From the above, following inferences can be drawn:

1) Service is not a physical product. It is intangible in nature.

2) In case of service, there is no time gap between its production and consumption, i.e., services cannot be stored.'

3) It provides some utility to the consumer. This utility can be in the form of comfort, convenience, entertainment, saving of time, improvement in knowledge, health, etc.

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Importance of Service Sector in India

The service sector has emerged as the largest and fastest growing sector of Indian economy. Today, the service sector is the largest contributor to our Gross Domestic Product (GDP). The share of service sector to GDP, was about55.1 per cent in year 2006-07. Highlighting the importance of service sector, Honorable Ex-President of India Dr. A.P.J. Abdul Kalam in his book, India 2020 - A Vision for the New Millennium' says that the service sector provides essential inputs to agriculture and manufacturing sector; and employment in service sector covers a large number of occupations, requiring very less initial investment.

Importance of service sector in Indian economy is discussed below:

1) Aid to primary and Secondary Sector: service sector is important for rapid development of primary and secondary sector. Primary and secondary sectors needs various kinds of services like transportation, storage, banking, insurance, trade, etc. All these services are provided by service sector.

2) Creates Employment Avenues: Many people earns livelihood in service sector. The majority of new employment in the organized sector has come in the service sector like software entertainment, brokerages, tourism, retail, hospitality, BPOs.

3) Contribution to National Income: In the recent past, one contribution of service sector to national income has increased manifold. At present, more than half i.e. more than 55.1 percent of national income is contributed by the service sector. This sector is the fastest growing sector of Indian economy and this trend is likely to continue in future.

4) Provision for Basic Services: Certain basic services are very essential for the economy. It includes hospitals, educational institutions, post offices, police stations, courts, public transport, tele communication, banks, insurance companies, etc. In India most of these services are mainly provided by the government. Now private sector has also started providing some of these services.

5) Adds to Comforts and Leisure: Many services like hotels; tourism, entertainment, travel add to comfort and leisure of people. Now many people in India enjoy services such as eating in restaurants, going to movies, traveling to places of tourist interest, etc.

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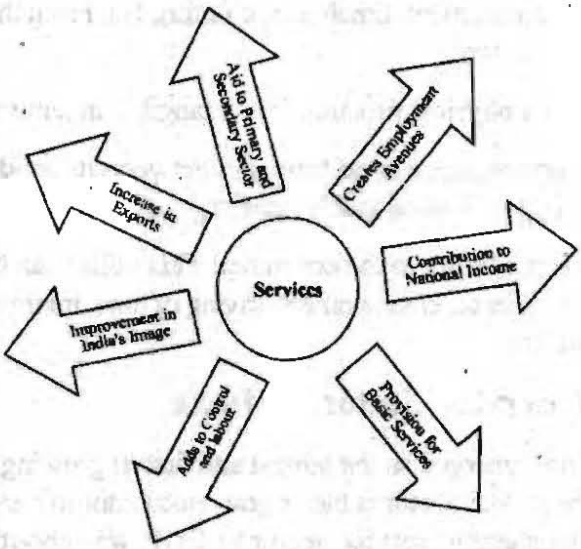

Figure : Role of Service Sector

6) Improvement in India's Image: Certain services like software development, business Process Outsourcing (BPO), Information Technology enabled Services (ITES) have improved India's image in the world economy. Now India accounts for 65 per cent of global market in offshore IT service and 46 per cent of global BPO market. All this has improved the image of Indian economy.

7) Increase in Exports: Because of good performance of service sector, India's export, have increased substantially. As per World Trade Organization, India has become the tenth largest service exporting country in the year 2006.

Reasons for the Growth of Service Sector:

Following are the main reasons for the growth of service sector:

1) **Increase in Income Level:** Certain sections of people have become rich. They have started demanding services like hotels, resorts, entertainment, interior designing, personal security private hospitals, private schools, coaching centers, etc.

2) **Increase in Leisure Time:** Certain sections of people have leisure time and they demand services of travel agencies, tour operators, restaurants, resorts, etc.

3) **Increase in Number of Working Women:** Now more women are in job, running their business, profession. So, they need services of crèches, domestic servants, house maintenance services etc.

4) **Product Complexity:** Many products like water purifier, computer, microwave oven, washing machine, dish cleaner, etc., are used by households. These complex products can be serviced by specialized persons. So need of service providers has increased.

5) **Growth in Information Technology:** Growth in IT has led to an increase in various types *of* services like call centers, internet cafe, ATM booths, software development, etc.

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6) **Health Awareness:** Now people have become more health conscious. It has led to increase in demand for doctors, nurses, nursing homes, private hospitals health clubs, yoga centers, gymnasiums, slimming centers, etc

7) **Increase in Mobility:** Increase m mobility of people has led to increase in demand tor transportation and communication

8) **Increase in Complexities:** Now life has become more complex. So now, people need more services of lawyers, tax-consultants, chartered accountants, architects, property advisors, etc.

India as a Major Service Provider to the World

IT-enabled services are one of the major areas witnessing tremendous growth in India. Software industry has emerged as one of the major area where India has comparative advantage over other nations because of availability of talented software engineers in India. Following facts indicate that India is a major service provider to the world:

1) India accounts for **65** per cent of global market in off-shore IT services.

2) India accounts for 1 percent of global Business Process Outsourcing (BPO)market.

3) India's consultancy professionals provide expertise in information technology, advanced financial and banking services to many countries of the world.

4) India is ranked as 10th among the largest exporting countries in services.

5) In recent years, India has emerged as one of the preferred countries for outsourcing.

Growth of Service Sector in India

Service sector has emerged as the largest and the fastest growing sector of India. The growth in output of service sector has been higher than that of agriculture and industry. Growth of service sector is clear from the following points:

1) **Increasing Share in GDP:**

The contribution of service sector in GDP is continuously increasing in India. In 1950-51, contribution of service sector to GDP was 29 per cent. In the year 2006-07, this contribution increased to 55.1per cent of GDP.

2) **Increasing Share in Employment:**

The contribution of service sector in employment has been increasing. Ln year 1970-71,the contribution of service sector to employment was 16 per cent. In year 2004-05, it increased to 27 per cent. Although this increase is not significant, yet we find that the majority of new employment in the organized sector has come in the service sector.

3) **Increasing Share in Exports:**

The contribution of service sector in exports is increasing rapidly. In year 2006, India became 10th largest service exporter in the world. India is exporting Software, IT-enabled services to many countries of the world.

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4) **Growth of New Types of Services:**

Service sector has expanded in new directions also. Now many types of services have developed, like business process outsourcing, IT-enabled services,, medical tourism, consultancy, courier services, interior designing, etc.

5) **Increase in Number of Service Providers:**

Apart from several indigenous agencies, foreign service providers have been allowed to enter in India in certain services. It has increased competition. For example, in case of telecommunication sector, earlier only public sector was providing telecommunication services. But now with privatization and globalization, many companies like Reliance, Tata, Airtel, Vodafone, etc., have entered in the Indian telecom market. As a result, competition in telecommunication services has increased, mereby benefiting the consumers. Similarly in case of air travel, many private airlines like Sahara Airlines, Jet Airways, Deccan Airways, Kingfisher Airlines, etc., have been permitted to provide air services. As a result, competition in airlines has increased. It has benefited the consumers as now airfares have come-down.

Comparison of Primary, Secondary and Tertiary Sector

All the three sectors of economy are very important tor the rapid development of the nation. But it is not necessary that all these sectors will grow at the same pace. It is possible that the growth rate of these sectors is different; their contribution to national income may also be varied with the change in level of development, the share of different sectors in the national income change. Generally, with increase in level of development, the percentage contribution of secondary and tertiary sector increases.

As the nature of products of these three sectors is not the same, so for comparing production of these sectors, we have to convert their production units in monetary values. It is done by multiplying their output with the market price. For example, if a fanner has grown 100 quintals of wheat and the rate of wheat is Rs. 1,000 per quintal then the market value of his produce will be Rs. 1, 00,000. Similarly, if an industrialist has produced 20 machines and the price of one machine is Rs. 10,000 then value of his output will be Rs. 2, 00,000.

In the initial stages of development, primary sector dominates other sectors of the economy i.e., the share of primary sector in the national unemployment in primary sector.

Major Issues of Development of Indian Economy

India is an underdeveloped though a developing economy. Bulks of the population are living in conditions of misery. Poverty is not only acute but also chronic. At the same time, there exist unutilized natural resources. **The co-existence** of the vicious circle of poverty with the vicious circle of affluence perpetuates misery and foils all attempts at removal of poverty. It is in this context that an understanding of the major issues of development should be made.

The following are the major development issues in India.

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1) **Low per capita Income and Low Rate of Economic Growth:**

Barring a few countries in the world, the per capita income of the Indian people is the lowest in the world. In the years since 1950 the developed countries have improved their per capita income at a much faster rate but India has been limping along so badly. A major issue of development is to catch up with the developed countries - this indeed is a Herculean task.

2) **High Proportion of People below the Poverty Line:**

A major development issue is the removal of mass poverty. Indian economy indicates a very high proportion of people below the poverty line. Dan-dekar and Rath showed that 40 percent of rural population and 50 percent of the urban population lived below the poverty line in 1967-68. Taken together 215 million persons constituted the poor, accounting for 41 percent ofthe total population in 1967-68. Defining poverty line on the basis of norms of nutritional requirements, i.e., 2,400 calories per person per day for the rural areas and 2,100 calories for the urban areas, the Sixth Plan (1980-85) estimated the total number of persons living below the poverty line as 317 million for 197980, that is, 48 percent of the total population. According to the Planning Commission, in 1999-2000 nearly 260 million people (26.0 percent of total population) were living below, the poverty line ^ 193 million in rural areas and 67 million in urban areas. The burden of poverty is very massive. Rapid reduction and eventually the elimination of poverty is, therefore, the most important issue of development.

3) **Low Level of Productive Efficiency due to Inadequate Nutrition and Malnutrition:**

Nutrition influences economic development via raising the level of productivity, efficiency and intelligence of the community. The National Sample Survey has estimated that about 56 percent of the urban population and about 49 percent of the rural population suffer from inadequate nutrition as they do not get a calorie intake of 2,400 per day considered as a reasonable level of nutrition. The level of malnutrition in all expenditure groups was higher in the urban areas than in the rural areas. This is partly due to the relatively bwer prices offood products and their relatively easy availability in the rural areas.

Amitabh Kundu has highlighted the deterioration in basic food availability: "It is important thatthe per capita consumption of cereals has gone down from 15.4 kgs to 14.4 kgs per month during 1970-89 in rural areas, as per the NSS data. The corresponding figures for urban areas are 11.4 and 11.0 respectively. The average calorie intake per consumer unit in rural areas has also declined from 2,858 to 2,784 during 197383. The information from the National Nutrition Monitoring Bureau QWMB) also confirms this trend."

A relatively more detailed examination of food requirement and actual consumption reveals that (i) in India; a high proportion of calorie intake is derived from cereals which indicate a low level of living. As against the requirements of 400 calories per day per adult, actual consumption of cereals is of the order of 470 calories, (ii) As against this, actual consumption of non-cereal such as veg-

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etables, fruits, milk and milk products, sugar, fish, meat and eggs and vegetable oils is far short of their requirements. This only underlines the unbalanced nature of the diet of an average mdian.

The foregoing analysis brings out the clear need for an integrated policy with regard to prices, production and distribution of various food grains, coupled with a program for raising the output ofsuch non-cereals as milk products, poultry, fish, meat, pulses, vegetables and fruits. The highest priority has, however, to be given to raising the output of pulses without necessarily diverting the land from cereal production.

4) **Imbalance between Population Size, Resources and Capital:**

A very important problem which affects economic development is the rapid growth of population. As mentioned already the rate of growth of population L93 percent per annum by during 1991-2001 decade which is quite high. A rising population imposes greater economic burdens and, consequently, society has to make a much greater effort to initiate the process of growth. Moreover, with a rising population, per capita availability of land and such other resources fixed in supply, declines. Consequently, society has to make greater efforts to eke out more

output per unit of land. Similarly, a significant proportion of the capital formation is utilized to provide basic facilities to the additional population at the present level of living. Obviously, checking the fast growth of population has a close relationship with economic development.

5) **Problem of Unemployment:**

A major development issue in India is to eliminate unemployment and provide gainful employment to millions of people without work. In 2001-02, India had an incidence of unemployment underemployment of the order of 9.2 percent, Li other words, the development plans in India failed to absorb even the normal increase in labor force during this period, not to speak of reducing the backlog of unemployment.

6) **Inequitable Distribution of Income:**

The distribution of income and wealth in India is inequitable. Income inequalities result from the concentration of wealth and capital.

7) **Predominance of Agriculture:**

Occupational distribution of population in India is not at all satisfactory and clearly reflects the economic backwardness of the economy.

A second indicator of the predominance of agriculture in the Indian economy is the proportion of national income originating in this sector.

8) **Rapid Population Growth and High Dependency Ratio:**

Over the years population in India has been growing at a fast rate. The country until the last census has passed through the second stage of demographic transition which is characterized by a falling death rate without a corresponding

decline in birth rate. This has resulted in population explosion partly off-setting the gains of development which this country **had** made during the planning period.

9) Low Level of Human Development:

Human development is usually measured in terms of Human Development Index (HDI) constructed by the **United** Nations Development Program (UNDP). The HDI is **a** composite of three basic indicators of human development - longevity, knowledge and standard of living. India with a HDI value of 0.619 ranks a lowly 128 in terms of HDI.

10) Scarcity of Capital:

Of all factors of economic development, capital is considered to be the most **important.** In tact, it is the accumulation of capital that alone can help a country in its attempt to overcome its economic backwardness.

As against India, some of the East-Asian countries have been able to maintain much higher rates of saving and investment consistently for a number of years (more than 35 per cent of GDP) and this has enabled them to achieve much higher rates of economic growth.

11) Technological Backwardness:

While technological progress is at the heart of development process, over a wide range of productive activity, techniques of production are backward in India. Agriculture which provides subsistence to more than half of the population is even now characterized by highly backward techniques.

12) Lack of Entrepreneurs:

Joseph A. Schumpeter has assigned a vital role to entrepreneurs in his theory of growth. Obviously, these activities require aptitudes that are present only in a small fraction of population. Therefore, if some society possesses people who are gifted with entrepreneurial skill, it is bound to grow rapidly.

MEANING OF POPULATION

Population means the number of people in a country or place, or the inhabitants of a place. Thus, population refers to the total number of people residing in a place. In earlier period, growth in population was desirable. There are still certain countries (example Australia), which gives incentives to people who have large families. For them, more number of persons is desirable, due to following reasons:

- It may provide work force to produce.
- It may promote innovative ideas.
- It may promote division of labour and specialization.

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THEORIES OF POPULATION

MALTHUSIAN THEORY OF POPULATION-

According to Malthusian theory of population, population increases in a geometrical ratio, whereas food supply increases in an arithmetic ratio.

Malthus presents his ideas in his famous treatise 'An Essay on the Principle of Population'. His thinking took shape under the influence of the optimistic ideas of his father and his friends mainly Rousseau, about future improvement of the society. In the first edition of his treatise, Malthus presents his views that oppose the belief of scholars like Marquis de Condorcet and William Godwin who were optimistic about population growth in England. In his book The Enquirer, William Godwin promoted population growth as a means for human beings to attain equality. According to him, an increased population would create more wealth that would provide food for the whole humanity. In contrast to this viewpoint, Malthus interpreted overpopulation as an evil that would reduce the amount of food per person.

Malthus theory was based on the assumption that the power of population is much greater than the power of the earth to provide subsistence for man. According to Malthus, disease, food shortage and death due to starvation, were nature's way to control population. He proposed that human beings adopt measures like infanticide, abortion, delay in marriage and strict following of celibacy to control population growth.

According to him, human society could never be perfected. He believed that man is a lazy animal, who would lead a satisfied life and procreate as long as his family was well fed. However, as human population increases, it may become great obstacle in food supply; he would again work hard to provide enough for his family. This might lead to an increase in agricultural production to provide for all, but at the same time man would be back to his complacent stage, where all his needs would be fulfilled. This would start the cycle of overpopulation and food shortage, all over again.

CRITICISM

Some critics of Malthus, like Karl Marx, argued that Malthus failed to recognize the potential of human population to increase food supply. Malthus failed to realize man's ability to use science and technology to increase food supply for meeting the needs of an increasing population. Thinkers from the field of social science have criticized Malthus for his belief that the human society could never be made perfect. Malthus opposed all political, social and economic reforms that did not aim at controlling birth rate. Some say him as a rigid and pessimistic individual.

OPTIMUM THEORY OF POPULATION

Modern economists rejected the Malthusian theory of population. We are concerned with the size of population in relation to the total wealth of a country and not merely with the food supply alone. If the productive system is efficient, a country can definitely support a large population. A country should develop its natural and economic resources. Thus, the problem of population may be solved. As Seligman,

observed the problem of population is not only size but of efficient production and equitable distribution.

Meaning of Optimum:

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The problem of population should be studied in relation to the total of country. In this connection, 'Cannan' introduced the idea of optimum population. Optimum population means the total population that a country should have considering its resources. A country should have certain size of population to utilize the resources. Optimum population is that population which secures the maximum real income per head.

Optimum size is not fixed size:

The optimum size of the population is not a fixed size. It depends upon the natural and economic resources and the sate of technical knowledge. If new resources are developed, a county can support larger population. On the other hand, if some of the resources are exhausted, the existing population may become overpopulation.

Formula:

Dalton framed the following formula for judging the character of a country's population. 'A' stands for the actual number of people. 'O' for the optimum number of people and 'M' for the degree of maladjustment,

$M = (A - O)$

When M is positive, we have over population, if it is negative we have under population and if it is equal to zero, the population is said to be optimum size.

COMPARISON BETWEEN MALTHUSIAN & OPTIMUM THEORIES

Let us make a comparison between Optimum theory and Malthusian theory of population. We may try to find out the reasons as to how optimum theory is better than Malthusian theory.

1. **Optimum theory is optimistic and Malthusian theory was pessimistic:**

   He gave the prediction that all are bound to die whenever population increases. The optimum theory is highly optimistic. Growth of population is not always a curse. An increase in population is desirable if the actual number is less than the optimum size. Further, Malthus is always concerned with securing food. The objective of optimum theory is to secure maximum income per head.

2. **It holds correct ratio:**

   Malthus established the ratio between population and food supply. The optimum theory establishes the relation between population and total wealth. This theory considers the problem of population in a new and right perspective.

3. **Test of overpopulation:**

   According to Malthus, a country is said to be over populated when positive checks like famine, disease, war etc, take place. But, according to the new

theory, if the real income per head is decreased by increasing the population, country is said lo be overpopulated.

DEFECTS OF OPTIMUM THEORY:

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1. It is not a population theory:

The optimum theory is not a population theory. It merely discusses the relationship between population and productive resources. It does not state as to how population grows.

2. Difficult to know Optimum population:

It is very difficult to know the population that gives maximum per capita income. If optimum size is not clear, then one may not be able to say whether a country is overpopulated or under-populated.

POPULATION OF INDIA

India is the second overpopulated country in the world which reached 110 crores (110,000,000,0) and accounts for one sixth of the population of the world. India is next to China and covers 2.4 per cent of the total population of the world land area.

In 1991, its population was 84.4 crores. According to the 2001 census, its population is 102.7 crores. The growth of population per year is more than 17 million which is equal to the total population of Australia and little more than population of Japan. So it is rightly said that India creates one Australia and little more than Japan in a year. The density of population is 324 per square kilometer in 2001.The life expectancy is 63.9 years, literacy rate 65.4 per cent and the sex ratio is 933 females per 1000 males. The annual growth rate of population was 2.14 in 1991 which decreased to 1.95 to 2001 census.

CAUSES OF RAPID GROWTH OF POPULATION IN INDIA:

There are various causes responsible for the rapid growth of population in India. Generally all the causes can be divided into three categories like - (I) High birth rate, (II) Low death rate (III) Migration.

(I) High Birth Rate (Fertility):

Birth rate refers to the number of children taking birth per thousand people. In 1991, the birth rate was 29.9 per thousand. In 2000, the birth rate was 25.8 per thousand which is very compound to other counties of the world. Birth rate is high due to the following reasons.

Early Marriage System:

Early marriage system is very common in our country. Maximum numbers of girls get married between 16 to 18 years. This may lead to increase in the birth rate of our country.

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Poverty:

Poverty is another factor which is mostly responsible for the rapid growth of population. According to 2001 census, nearly 37 per cent of people live below the poverty line. Small children in poor families are put to work and this helps to increase the family income. Children in poor families are considered as assets.

Illiteracy, ignorance and superstitions:

A majority of population in our country is illiterate. When illiteracy is combined with poverty, it leads to superstition. Children are considered as the gift of God.

Attitude towards male child:

Every Indian wants to have a male child. A male child is considered as an asset for the poor, a dowry earner for the greedy, and liberator for the God fearing, a life insurance for the middle man and a matter of pride for the mother.

(II) Low Death Rate: (Mortality rate is low in India):

Death rate refers to the number of deaths taking place per thousand of people. According to the 1991 census, the death rate was 10 per thousand. It decreased to 8.5 per thousand in 2001. Following are the causes responsible for the low death rate in India.

Control of epidemics and other deadly diseases:

Epidemics like cholera, smallpox, plague, malaria etc. take lives of many people. But now persons are more aware about health which helps to control these epidemics successfully.

Development of medical science:

Due to the development of medical science and invention of life saving drugs, the death rate has sharply declined. The drinking water, food and other hygienic measures have helped the people to get away from incidence of death. This reduces the death rate to a marked extent in India.

Decline in infant mortality rate:

The infant mortality rate has declined due to proper medical treatment of the children. In 1994, the infant mortality rate was 74 per thousand which declined to 70 per thousand in 2006.

(III) Migration:

Migration is another important factor which is responsible for the higher growth rate of population. It is generally seen that large number of people migrate from foreign countries to India and permanently stay here.

POVERTY

Poverty in India is a major issue. Rural Indians depend on unpredictable agriculture incomes, while urban Indians rely on jobs that are, at best, scarce.

Since its independence, the issue of poverty within India has remained a prevalent concern. As of 2010, more than 37% of India's population of 1.35 billion still lives

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below the poverty line. More than 22% of the entire rural population and 15% of the urban population of India exists in this difficult physical and financial predicament.

Poverty Situation

The division of resources, as well as wealth, is uneven in India - this disparity creates different poverty ratios for different states. For instance, states such as Delhi and Punjab have low poverty ratios. On the other hand, almost half the population in states like Bihar and Orissa live below the poverty line.

A number of factors are responsible for poverty in the rural areas of India. Rural populations primarily depend on agriculture, which is highly dependant on rain patterns and the monsoon season. Inadequate rain and improper irrigation facilities can obviously cause low, or in some cases, zero production of crops.

Additionally, the Indian family unit is often large, which can amplify the effects of poverty. Also, the caste system still prevails in India, and this is a major reason for rural poverty - people from the lower casts are often deprived of the most basic facilities and opportunities. The government has planned and implemented poverty eradication programs, but the benefits of these programs are yet to bear fruits.

Increasing Poverty in India

The phenomenal increase in population in the cities is one of the main reasons for poverty in the urban areas of India. A major portion of this additional population is due to the large scale migration of rural families from villages to cities. This migration is mainly attributed to poor employment opportunities in villages.

Since 1970, the Indian government has implemented a number of programs designed to eradicate poverty, and has had some success with these programs. The government has sought to increase the GDP through different processes, including changes in industrial policies. There is a Public Distribution System, which has been effective to some extent. Other programs include the Integrated Rural Development Program, Jawahar Rozgar Yojana and the Training Rural Youth for Self Employment (TRYSEM), and other on-going initiatives.

UNEMPLOYMENT

Unemployment and poverty are the two major challenges that are facing the world economy at present. Unemployment leads to financial crisis and reduces the overall purchasing capacity of a nation. This in turn results in poverty followed by increasing burden of debt. Now, poverty can be described in several ways. As per the World Bank definition, poverty implies a financial condition where people are unable to maintain the minimum standard of living.

Poverty can be of different types like absolute poverty and relative poverty. There may be many other classifications like urban poverty, rural poverty, primary poverty, secondary poverty and many more. Whatever be the type of poverty, the basic reason has always been lack of adequate income. Here comes the role of unemployment behind poverty. Lack of employment opportunities and the consequential income disparity bring about mass poverty in most of the developing and under developed economies of the world.

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Sources of Unemployment

Lack of effective aggregate demand of labor is one of the principal reasons for unemployment. In the less developed economies a substantial portion of the total workforce works as surplus labor. This problem is particularly prevalent in the agricultural sector. Due to excess labor, the marginal productivity of the workforce may be zero or even negative. This excess pool of labor is the first to become unemployed during the period of economic or social crisis.

When a capitalist economy undergoes some dynamic changes in its organizational structure, it results in structural unemployment. This type of unemployment may also emerge if the lack of aggregate demand continues for a substantially long period of time. In case of frictional unemployment, workers are temporarily unemployed. There may be cases of hidden unemployment where workers restrain themselves from working due to absence of appropriate facilities.

Unemployment and Poverty: the Latest Trends

It is true that unemployment and poverty are mostly common in the less developed economies. However, due to the global economic recessions, the developed economies are also facing these challenges in the recent times. The US subprime crisis and its wide spread impacts have played a major role in worsening the situation.

In India, the problems of unemployment and poverty have always been major obstacles to economic development. Underemployment and unemployment have crippled the Indian economy from time to time. Even during the period of good harvest, the Indian farmers are not employed for the entire year. Excessive population is another major problem as far as Indian economy is concerned. Regional disparity is also crucial in this context. A part of the urban workforce in India is subjected to sub-employment. Mass migration from rural to urban regions is adding to the problems of unemployment and poverty in India.

Measures to Prevent Unemployment and Poverty

Economic reforms, changes in the industrial policy and better utilization of available resources are expected to reduce the problem of unemployment and poverty that results from it. The economic reform measures need to have major impacts on the employment generating potential of the economy. The governmental bodies are also required to initiate long term measures for poverty alleviation. Generation of employment opportunities and equality in income distribution are the two key factors that are of utmost importance to deal with the dual problem of unemployment and poverty.

The unemployment scenario in India has always been quite acute. With a huge population and slow growth of job opportunities, unemployment has been widespread in India. Large scale unemployment has led to several socio-economic problems like poverty, malnutrition, antisocial and criminal activities, drug and substance abuse, etc. The lack of proper unemployment insurance schemes has further aggravated this problem.

In the early 1990s, major economic reforms were undertaken in India. One of the major objectives of these economic reforms was to boost employment in the Indian

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economy. However, though the economic reforms were successful in raising productivity and attracting FDI (Foreign Direct Investment), the growth in job opportunities was not as high as had been expected.

Some of the important aspects related to the unemployment scenario in India are –

The growth in labor force in India is much higher than the growth of jobs. Actual employment figures in India have mostly fallen short of estimated figures, as per the five year plans. The unorganized sector in India accounts for 90% of the employment.

The unorganized sector consists of agricultural workers in the rural areas and contract and sub-contract labourers in the urban areas.

Self employment accounts for more than 60% of the employed population of India. Casual workers, who get jobs only at times and remain unpaid when they don't have work, constitute 30% of the workforce, while only 10% are regular employees. Merely two-fifth of this 10% is employed in the government sector.

Around 70% of the labour force in India has education below primary level or is illiterate.

Another important factor in the unemployment scenario in India is underemployment. There exists very high underemployment in various sectors of the labour force in India. Disguised unemployment also exists in various sectors of the Indian economy. Regional imbalances in the unemployment scenario in India are another important factor. While some areas have higher employment opportunities, some areas have very low opportunities of employment. This has led to inter-state labour migration in the Indian economy.

Recent studies have revealed the fact that growth of unemployment in India at current rates can lead to devastating results. At this rate, India is expected to have a 30% unemployment rate by 2020. This would mean that there would be 21 crore jobless people in India. The decline in job creation in agriculture has been identified as one of the important reasons behind the increasing unemployment in India.

Various government schemes have been undertaken in India to tackle the problem of unemployment. Swarozgar Yojnas (self-employment schemes) have been launched by the government to help young educated Indians earn a living. Specific programs have been adopted for rural areas. Many people have migrated from rural areas to urban areas in search of employment in the last few decades. Schemes have been undertaken to provide proper training, guidance and financial assistance to needy people under self employment schemes. Focus on education and training has also been increased to increase employability of the people.

TYPES OF UNEMPLOYMENT

Cyclical Unemployment: This type of unemployment is consistent with the trade cycle. When the economy is in its boom phase, there is a reduction in the unemployment. Conversely, when it passes through the recessionary phase, unemployment rate rises.

Seasonal unemployment:

This type of unemployment is most common in hotel, catering or fruit picking business.

Frictional unemployment:

Frictional unemployment occurs when an individual is between two jobs, i.e. he has lost one job and is searching for the other.

Structural Unemployment:

Structural employment occurs due to a change in the composition of some industries. Technological progress may make an industry capital intensive from a purely labor intensive one. The release in labor from such an industry gives rise to the problem of unemployment.

Different procedures are adopted to measure unemployment. One is the number of unemployed individuals who have registered themselves in the employment agencies or have claimed unemployment benefits. This measure suffers from the problem of double counting. Again there may be individuals who have neither registered themselves in the employment agencies nor claimed unemployment benefits and still is unemployed.

The second measure of unemployment is taking a sample of households. This measure, although suffers from sampling errors, is the most widely used one.

Causes of unemployment

In the set up of a modern market economy, there are many factors, which contribute to unemployment. Causes of unemployment are varied and it may be due to the following factors:

- Rapid changes in technology
- Recessions
- Inflation
- Disability
- Undulating business cycles
- Changes in tastes as well as alterations in the climatic conditions. This may in turn lead to decline in demand for certain services as well as products.
- Attitude towards employers
- Willingness to work
- Perception of employees
- Employee values
- Discriminating factors in the place of work (may include discrimination on the basis of age, class, ethnicity, colour and race).
- Ability to look for employment

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INFLATION

Inflation means a persistent rise in the price levels of commodities and services, leading to a fall in the currency's purchasing power. The problem of inflation used to be confined to national boundaries, and was caused by domestic money supply and price rises. In this era of globalization, the effect of economic inflation crosses borders and percolates to both developing and developed nations.

- Central bankers believe that mild inflation, in the 1 to 2 per cent range, is the most benign for a country's economy. High inflation, stagflation or deflations are all considered to be serious economic threats.

The following factors can lead to inflation:

- Printing too much money. This is called a loose or expansionary monetary policy. If there is a lot of money going around, then supply is plentiful compared to the products you can buy with that money. The law of supply and demand therefore dictatesthat prices will rise.
- Increases in production costs.
- Tax rises.
- Declines in exchange rates.
- Decreases in the availability of limited resources such as food or oil.
- War or other events causing instability.

Economists generally believe that money supply is the key cause of inflation; in 2008, however, skyrocketing prices of oil, food and steel caused runaway levels of inflation in the world economy that collapsed only because of the global Financial Crisis.

Effects of Inflation

One of the economic effects of inflation is the change in the marginal cost of producing money. This involves the appropriate 'price' of money which, in this case, is the nominal rate of interest. This 'price' indicates the return which has to be predetermined to hold back the printing presses, in place of some other assets which offer the market interest rate.

In addition, if a country has a higher rate of inflation than other countries, its balance of trade is likely to move in an unfavourable direction. This is because there is a decline in its price competitiveness in the global market.

A high rate of inflation can cause the following economic impediments:

The value of investments is destroyed over time.

- It is economically disastrous for lenders.
- Arbitrary governmental control of the economy to control inflation can restrain economic development of the country.

- Non-uniform inflation can lead to heavy competition in the global market and threaten the existence of small economies.
- High levels of inflation tend to lead to economic stagnation.

Measures to Control Inflation

The central banks, monetary authorities or finance ministries of most nations have the authority to take economic measures to control rising inflation by regulating the following factors:

Reducing the central bank interest rates and increasing bank interest rates.

- Regulating fixed exchange rates of the domestic currency.
- Controlling prices and wages.
- Providing cost of living allowance to citizens in order to create demand in the market.

Different schools of thought emphasize different factors as the root cause of inflation. However, there is a consensus on the view that economic inflation is caused either by an increase in the money supply or a decrease in the quantity of goods being supplied, and that the effects of either high inflation or deflation are extremely damaging to the economy.

BUDGET

A budget is a detailed plan of personal or business spending over a period of time. Budgets are quantitative or financial statements prepared for the purpose of attaining a particular financial goal such as reduce expenditure, increase savings or make the most of your resources for investments.

Budgeting Process

Budgeting is the formal procedure of preparing budgets. It involves the following basic steps:

1. Identifying expenses
2. Determining different sources of income
3. Preparing the budget
4. Establishing the budget period
5. Laying down the budget procedure
6. Allocating income for expenses
7. Monitoring the efficiency of the budget
8. Reassessing the budget

Personal Budget

A personal budget is prepared by individuals and families to allocate income for various expenses, savings, investments and other financial obligations, such as debts. A personal budget is prepared by:

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- **Organizing expenses:** Personal expenses include expenditure on present consumption or future savings and investments. This includes incorporation of travel and leisure expenses and savings for the education fund of children.
- **Revenue summation:** An individual earns an income from a number of sources, including salary, social security, worker's compensation and rent collection.
- **Budget preparation:** This is generally prepared on a weekly or monthly basis. The idea of a personal budget is to allocate income for various expenses, while setting aside a portion for savings.

The budgeting process of governments, companies and individuals involves re-evaluation and revision of the budget. The budget is periodically monitored with respect to established targets and results obtained. Shortcomings in the outcome are evaluated and necessary modifications are made in the future budget to avoid unnecessary expenses.

National Budget

National budgets are legal documents, which are provided by legislatures before being passed by the executive head of the nation, such as the president, prime minister or other chief official of a nation. The budgeting process of a nation involves:

- **Classifying expenses:** The expenses allocated in a government budget include consumption and investment expenditure on infrastructure development and research and development. It also includes transfer payments, such as social security and unemployment benefits.
- **Revenue determination:** The primary source of revenue generation for a government budget is taxes.
- **Preparing budgets:** A government budget may be for a quarter, a year, five years or ten years. The period of the budget and the procedure of revenue allocation are exclusively mentioned by the government.

Examples of specific country budgeting processes, such as those in US, Canada, UK, Germany, Australia, New Zealand, Japan, India and Brazil, are detailed at the end of this article.

Company Budget

A company budget is prepared by the owner and shareholders of the company. It may also be prepared with the inputs of other stakeholders, such as employees and creditors. The budgeting process of a company involves:

- **Categorizing Expenses:** Business expenses include capital expenditure on acquisition and modification of assets and revenue expenditure on routine activities such as payment of electricity and rent.
- **Revenue calculation:** Sources of business revenue include capital, borrowed funds and sale of goods.

- **Budget preparation:** This is generally prepared for a financial year. The purpose of the budget is to allocate funds for various business activities, such as production and distribution.

FISCAL DEFICIT:

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The fiscal deficit is the difference between the government's total expenditure and its total receipts (excluding borrowing). The elements of the fiscal deficit are (a) the revenue deficit, which is the difference between the government's current (or revenue) expenditure and total current receipts (that is, excluding borrowing) and (b) capital expenditure. The fiscal deficit can be financed by borrowing from the Reserve Bank of India (which is also called deficit financing or money creation) and market borrowing (from the money market that is mainly from banks).

Fiscal deficit is an economic phenomenon, where the Government's total expenditure surpasses the revenue generated. It is the difference between the government's total receipts (excluding borrowing) and total expenditure. Fiscal deficit gives the signal to the government about the total borrowing requirements from all sources.

Components of fiscal deficit

The primary component of fiscal deficit includes revenue deficit and capital expenditure.

Revenue deficit: It is an economic phenomenon, where the net amount received fails to meet the predicted net amount to be received.

Capital expenditure: It is the fund used by an establishment to produce physical assets like property, equipments or industrial buildings. Capital expenditure is made by the establishment to consistently maintain the operational activities.

In India, the fiscal deficit is financed by obtaining funds from Reserve Bank of India, called deficit financing. The fiscal deficit is also financed by obtaining funds from the money market (primarily from banks).

Arguments:

Fiscal deficit lead to inflation

According to the view of renowned economist John Maynard Keynes, fiscal deficits facilitate nations to escape from economic recession. From another point of view, it is believed that government need to avoid deficits to maintain a balanced budget policy.

In order to relate high fiscal deficit to inflation, some economists believe that the portion of fiscal deficit, which is financed by obtaining funds from the Reserve Bank of India, directs to rise in the money stock and a higher money stock eventually heads towards inflation.

Expert recommendation

Financial advisors recommend that the Government should not promote disinvestment to reduce fiscal deficits. Fiscal deficit can be reduced by bringing up revenues or by lowering expenditure.

Check Your Progress

4) What are National Budgets?
5) What do you mean by Inflation?

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Impact

Fiscal deficit reduction has an impact over the agricultural sector and social sector. Government's investments in these sectors will be reduced.

CASE STUDY:

Indian Economy

Economic Development and Indian Economy

Ford Foundation - a Case Study of the Aims of Foreign Funding

"Someday someone must give the American people a full report of the work of the Ford Foundation in India. The several million dollars in total Ford expenditures in the country do not tell one-tenth of the story." - Chester Bowles (former US ambassador to India).

In the light of the steady flow of funds from Ford Foundation to the World Social Forum, it is worth exploring the background of this institution - its operations internationally, and in India. This is significant both in itself and as a case study of such agencies. Ford Foundation (FF) was set up in 1936 with a slender tax-exempt slice of the Ford Empire's profits, but its activities remained local to the state of Michigan. In 1950, as the US government focused its attention on battling the 'communist threat', FF was converted into a national and international foundation.

Ford and the CIA

The fact is that the US Central Intelligence Agency has long operated through a number of philanthropic foundations; most prominently Ford Foundation. In James Petras' words, the Ford-CIA connection "was a deliberate, conscious joint effort to strengthen US imperial cultural hegemony and to undermine left-wing political and cultural influence." Frances Stonor Saunders, in a recent work on the period, states that "At times it seemed as if the Ford Foundation was simply an extension of government in the area of international cultural propaganda. The Foundation had a record of close involvement in covert actions in Europe, working closely with Marshall Plan and CIA officials on specific projects.

Richard Bissell, head of the Foundation during 1952-54, consulted frequently with Allen Dulles, the head of the CIA; he left the Foundation to become special assistant to Dulles at the CIA. Bissell was replaced by John McCloy as head of FF. His distinguished career before that included posts as the Assistant Secretary of War, president of the World Bank, High Commissioner of occupied Germany, chairman of Rockefeller's Chase Manhattan Bank, and Wall Street attorney for the big seven oil corporations. McCloy intensified CIA-Ford collaboration, creating an administrative unit within the Foundation specifically to liaise with the CIA, and personally heading a consultation committee with the CIA to facilitate the use of FF for a cover and conduit of funds. In 1966, McGeorge Bundy, till then special assistant to the US president in charge of national security, became head of FF.

It was a busy collaboration between the CIA and the Foundation. "Numerous CIA 'fronts' received major FF grants. Numerous supposedly 'independent' CIA sponsored cultural organizations, human rights groups, artists and intellectuals received

CIA/FF grants. One of the biggest donations of the FF was to the CIA-organized Congress for Cultural Freedom which received $ seven million by the early 1960s. Numerous CIA operatives secured employment in the FF and continued close collaboration with the Agency."

The FF objective, according to Bissell, was "not so much to defeat the leftist intellectuals in dialectical combat [sic] as to lure them away from their positions. Thus FF funneled CIA funds to the Congress for Cultural Freedom (CCF) in the 1950s; one of the CCF's most celebrated activities was the stellar intellectual journalEncounter. A large number of intellectuals were ready to be so lured. CIA-FF went so far as to encourage specific artistic trends such as Abstract Expressionism as a counter to art reflecting social concerns.

The CIA's infiltration of US foundations in general was massive. A 1976 Select Committee of the US Senate discovered that during 1963-66, of 700 grants each of over $10,000 given by 164 foundations, at least 108 were partially or wholly CIA-funded. According to Petras, "The ties between the top officials of the FF and the U.S. government are explicit and continuing. A review of recently funded projects reveals that the FF has never funded any major project that contravenes U.S. policy."

Such experiences ought to have alerted intellectuals and various political forces to the dangers of being bankrolled by such sources.

FF states (on the webpage of its New Delhi office) that from its inception to the year 2000 it had provided $7.5 billion in grants, and in 1999 its total endowment was in the region of $13 billion. It also claims that it "receives no funding from governments or any other outside sources", but the reality, as we have seen, is otherwise.

Ford in India

The FF New Delhi office webpage claims that "At the invitation of Prime Minister Jawaharlal Nehru, the Foundation established an office in India in 1952." In fact Chester Bowles, US ambassador to India from 1951, initiated the process. Like the rest of the US foreign policy establishment, Bowles was profoundly shocked at the "loss" of China (ie the nationwide coming to power of the communists in 1949). Linked to this was his acute worry at the inability of the Indian army to suppress the communist-led peasant armed struggle in Telangana (1946-51) "until the communists themselves changed their programme of violence". Indian peasants expected that now, with the British Raj gone, their long-standing demand for land to the tiller would be implemented, and that pressure continued everywhere in India even after the withdrawal of the Telangana struggle.

Bowles wrote to Paul Hoffman, then president of FF: "the conditions may improve in China while the Indian situation remains stagnant.... If such a contrast developed during the next four or five years, and if the Chinese continued their moderate and plausible approach without threatening the northern Indian boundary.... the growth of communism in India might be very great. The death or retirement of Nehru might then be followed by a chaotic situation out of which another potentially strong communist nation might be born." Hoffman shared these concerns, and stressed the

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need for a powerful Indian State: "A strong central government must be established.... The hardcore of communists must be kept under control.... The prime minister Pandit Nehru greatly needs understanding, sympathy and help from the people and governments of other free [sic] nations.

The New Delhi office was soon set up, and, says FF, "was the Foundation's first program outside the United States, and the New Delhi office remains the largest of its field office operations". It also covers Nepal and Sri Lanka.

"The fields of activity suggested [by the US State Department] for the Ford Foundation", writes George Rosen, "were felt to be too sensitive for a foreign (American) government agency to work in.... South Asia rapidly came to the fore as an area for possible foundation activity... Both India and Pakistan were on the rim of China and seemed threatened by communism. They appeared to be important in terms of American policy....FF acquired extraordinary power over the Indian Plans. Rosen says that "From the 1950s to the early 1960s the foreign expert often had greater authority than the Indian", and FF and the (FF/CIA-funded) MIT Center for International Studies operated as "quasi-official advisers to the Planning Commission". Bowles writes that "Under the leadership of Douglas Ensminger, the Ford staff in India became closely associated with the Planning Commission which administers the Five Year Plan. Wherever there was a gap, they filled it, whether it was agricultural, health education or administration. They took over, financed and administered the crucial village-level worker training schools.

Ford Foundation intervention in Indian agriculture

Given the background of the Chinese revolution and the Telangana struggle, the US priority in India was to find ways to head off agrarian unrest. Thus the first phase of FF's work was in 'rural development'. FF was intimately involved in the Indian government's Community Development Programme (CDP), which Nehru hailed "as a model for meeting the revolutionary threats from left-wing and communist peasant movements demanding basic social reforms in agriculture." The scheme was to carry out agricultural development with some funds from the Programme and voluntary village labour, thus bringing about what Nehru described as a "peaceful revolution". At the Indian government's invitation, FF helped train 35,000 village workers for the CDP. By 1960 the Ford and Rockefeller Foundations had between them extended over $50 million on the CDP alone. And by 1971, India, with grants totaling $104 million, was by far the largest recipient of grant aid from the Ford Foundation's Overseas Development Programme. However, such cosmetic efforts neither brought about development nor solved the problem of simmering peasant discontent.

In 1959, a team led by a US department of agriculture economist produced the Ford Foundation's Report on India's Food Crisis and Steps to Meet It. In place of institutional change (ie redistribution of land and other rural assets) as the key-stone to agricultural development, this report stressed technological change (improved seeds, chemical fertilizers, and pesticides) in small, already irrigated, pockets. This was the 'Green Revolution' strategy. Ford even funded the Intensive Agricultural Development Programme (IADP) as a test case of the strategy, providing rich

farmers in irrigated areas with subsidized inputs, generous credit, price incentives, and so on. The World Bank too put its weight behind this strategy.

Soon it was adopted by the Indian government, with far-reaching effects. Agricultural production of rice and wheat in the selected pockets grew immediately. Talk of land reform, tenancy reform, abolition of usury, and so on were more or less dropped from official agenda (never to return). But the initial spectacular growth rates eventually slowed. On the average agricultural production all-India has grown more slowly after the Green Revolution than before, and in much of the country per capita agricultural output has stagnated or fallen. Today even the Green Revolution pockets are facing stagnation in yields.

However, the Green Revolution was successful in another sense: it yielded a large market for foreign firms selling either inputs or the technology to manufacture those inputs.

Shift to funding NGO 'activism'

since 1972 there has been a shift in FF's activities in India. Earlier FF had a large staff, focusing on agriculture and rural development, providing technical assistance in these fields and directly implementing its projects. Now FF's developmental activities continue under the heading "asset-building and community development" (Ford claims that it is responsible for introducing the concept of "micro-lending" in India, now eagerly embraced by the Reserve Bank), but it has added two other heads: "peace and social justice" and "education, media, arts and culture". This is in line with changes in foundation/funding agency policy worldwide, whereby, since the late 1970s, a new breed of 'activist' NGOs, engaging in social and political activity, have been systematically promoted. Among Ford's "peace and social justice" goals are the promotion of human rights, especially those of women; ensuring open and accountable government institutions; strengthening "civil society through the broad participation of individuals and civic organizations in charting the future", and supporting regional and international cooperation.

Over the period 1952-2002, FF New Delhi office, the first and oldest of FF's 13 overseas offices, has distributed $450 million in grants. At a press conference to mark the fiftieth anniversary of FF in India, the foundation's India representative said that it was launching a new Rs 220 crore ($45 million) funding programme - twice the usual annual allocation - and committing substantial funds to disadvantaged groups such as adivasis, dalits and women. "Asked if the shift in focus [from FF's traditional activities in rural development] was prompted by the inequalities caused by the Indian government's economic policies of globalization and liberalization, he said there was no question of getting away from globalisation but it had brought some concern also. The projects would, therefore, act as a corrective measure to offset the adverse impact of uncontrolled market forces."

This is precisely the language of the World Bank and IMF: their answer to "uncontrolled market forces" is not to control them, but to set up tiny well-publicised safety nets to catch a handful from among the masses of people thrown out by market forces.

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Further, FF would specifically ensure that people's struggles against the government do not take the course of confrontation: "While admitting that several of the voluntary organisations benefitting from the funding programme could be in confrontation with the government when they were working on issues such as welfare of Adivasis, he said the Foundation did not believe in conflict with the government. The attempt was to complement and cooperate with the efforts of the government."

Ford has chosen to focus on three particularly oppressed sections of Indian society - adivasis, dalits, and women. All three are potentially important components of a movement for basic change in Indian society; indeed, some of the most militant struggles in recent years have been waged by these sections. However, FF takes care to treat the problems of each of these sections as a separate question, to be solved by special "promotion of rights and opportunities". Since FF's funds are negligible in relation to the size of the social problems themselves, the benefits of its projects flow to a small vocal layer among these sections. These are persons who might otherwise have led their fellow adivasis, dalits and women on the path of "confrontation with the government" in order to bring about basic change, change for all. Instead special chairs in dalit studies will be funded at various institutions; women will be encouraged to focus solely on issues such as domestic violence rather than ruling class/State violence; adivasis will be encouraged to explore their identity at seminars; and things will remain as they are.

QUESTIONS:

1. Discuss the above case with SWOT analysis?
2. Mention all the problems related if case and their possible solutions?

SUMMARY:

- An economy is a system in which productive units use scarce resources to produce marketable products that satisfy human needs.
- Significance of Economic Development: Capital Formation, Exploitation of natural Resources, Development of Agriculture, Development of Industries, Increase in National Output, Expansion of Social Services, International status, Increase in Public Revenue, Social significance.
- India is the fifth largest economy in the world and has the second largest GDP among emerging economies, based on purchasing power parity.
- Population means the number of people in a country or place, or the inhabitants of a place.
- Unemployment and poverty are the two major challenges that are facing the world's economy at present.
- Unemployment leads to financial crises and reduces the overall purchasing capacity of a nation.
- Inflation means a persistent rise in the price levels of commodities and services, leading to a fall in the currency's purchasing power.

- Budget is the detailed plan of personal or business spending over a period of time.
- Fiscal deficit is the difference between the government's total expenditure and its total receipts.

ANSWERS TO 'CHECK YOUR PROGRESS'

1. Population means the number of people in a country or place, or the inhabitants of a place. Thus, population refers to the total number of people residing in a place.
2. A budget is a detailed plan of personal or business spending over a period of time. Budgets are quantitative or financial statements prepared for the purpose of attaining a particular financial goal such as reduce expenditure, increase savings or make the most of your resources for investments.
3. The fiscal deficit is the difference between the government's total expenditure and its total receipts (excluding borrowing).
4. National budgets are legal documents, which are provided by legislatures before being passed by the executive head of the nation, such as the president, prime minister or other chief official of a nation.
5. Inflation means a persistent rise in the price levels of commodities and services, leading to a fall in the currency's purchasing power.

TEST YOURSEMLF :

Long Question:

1. Explain determinants of Economic Development.
2. What are the general obstacles of Economic Development?
3. Write a short note on Indian Economy.
4. What is the importance of Service Sector in India?
5. Explain major issues of Development of Indian Economy.
6. What is Population? Give Malthusian Theory of Population.
7. Write a short note on:

• Poverty • Unemployment • Inflation • Budget • Fiscal Deficit

Short Questions:

1) What do you mean by Economic Development?
2) What is economic system?
3) State various economic factors of Obstacles to Economic Development.
4) What are the different sectors to Indian Economy?

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5) What do you mean by Personal Budget?

FURTHER READING

- Managerial Economics: P.L.Mehta
- Raj Kumar Gupta
- K.N. Devadi

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10 TRADE CYCLE OR BUSINESS CYCLE

The Chapter Covers :

- ECONOMICS
- BUSINESS CYCLE
- MONETARY THEORIES
- CAUSES OF TRADE CYCLE
- CONTROL OF TRADE – CYCLES
- PREVENTIVE MEASURES
- FORMAL MEASURES
- BALANCE OF PAYMENT
- SUMMARY
- QUESTIONS

INTRODUCTION

Trade cycle is a cyclical process. The trade cycle refers to the ups and down in the level of economic activity which extend over to a period of several years. The trade cycle come in the capitalistic economies.

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According to J.M. Keynes,

"A trade cycle is composed of periods of good trade characterized by rising prices and low unemployment percentage, with periods of bad trade characterized by following prices and high unemployment percentages."

The **business cycle** or **economic cycle** refers to the fluctuations of economic activity about its long term growth trend. The cycle involves shifts over time between periods of relatively rapid growth of output (recovery and prosperity), and periods of relative stagnation or decline (contraction or recession). These fluctuations are often measured using the real gross domestic product.

This shows how economic growth can fluctuate within different phases, for example:

1) Prosperity or boom (which is high growth causing inflation)
2) Peak (top of trade cycle)
3) Downturn or Recession (fall in economic growth)
4) Recovery (upturn of economic growth)

A trade cycle is composed of periods of good trade a characterized by rising prices and low un-employment percentage. The average length of trade cycle is a little more over eight years. The course of a trade cycle is generally traced through its various phases. Each of the phases is characterized by different economic conditions. In each phase the business face the different situation and pas through different experience.

Periodic changes in the level of economic activities in the long run are commonly termed as trade cycles. The level of economic activity periodically, increases and reaches a peak, shows a change in trend, decreases and bottoms out and finally, changes trend towards increase. Such cyclical changes in the level of economic activities constitute the trade cycle.

Trade cycle is a neoclassical concept of macro economics which tries to explain the changes in the economic activities with respect to time. The concept of trade cycle was initially developed by Joseph Schumpeter.

Accordingly, there are six phases of trade cycle:

1. Inflation
2. Boom
3. Deflation
4. Recession
5. Depression, and
6. Recovery

1) **Inflation:** When the economic activity increases after full employment level, it is called inflation. During inflation, the demand pressures will be high. Increasing demand leads to increasing product prices, increasing demand for factors, higher wages and then increasing demand again.

2) **Boom:** Boom refers to the peak in the level of economic activity after full employment. The demand pressures will be at the peak. The price level will be very high.

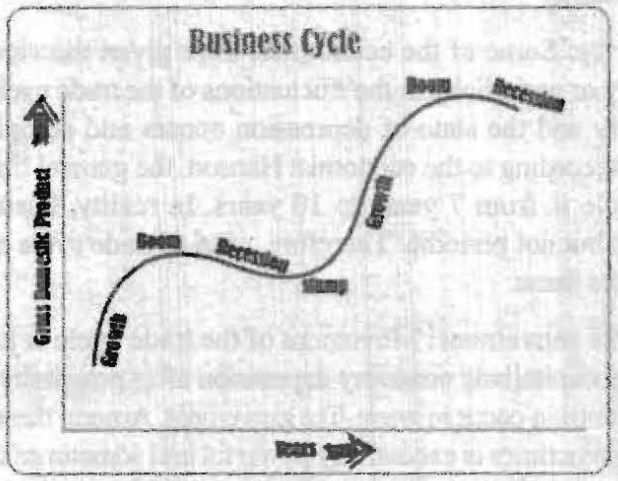
3) **Deflation:** It is the downward trend in the economic activities after boom. At boom level the Government will take corrective measures due to which the economic activity will show a change in trend.

4) **Recession:** When the economic activity reduces below full employment It is called recession. The level employment will decreases, the prices will decrease and the economic activity shrinks.

5) **Depression:** This is the lowest level of economic activity. The market's collapse. Large scale unemployment will lead to poverty and suffering. The world experienced Great depression during 1929 and 1933.

6) **Recovery:** From the lowest levels of economic activity the markets recover due to positive Government policy. The economic activity will increase towards full employment. Three will be increase in the level of employment, incomes, investment and demand.

BUSINESS CYCLE:



There are four main stages in a trade cycle or business cycle.

Growth	GDP is rising Unemployment is falling Business are experiencing rising profits 'Feel good' factor among the people as their incomes are rising.

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Boom	Results from too much spending. Economy experiences rapid inflation Factors of production become expensive
Recession	Results from too little spending. GDP is falling Demand in the economy will fall leading to closure of firms and unemployment
Slump	High level of unemployment. Business will rapidly close down creating serious consequences for the economy.

CHARACTERISTICS OF TRADE OR BUSINESS CYCLE:

The occurring of different type of change in the economic is known as trade cycle. Regular change in the economy creates fluctuations in the economic equilibrium. Such regular and continuous changes in the economy are the feature of the trade cycle. But all sorts of changes cannot be termed as trade cycle. Only regular and continuous changes come under trade cycle. On the basis of these facts, the main characteristics of trade cycle can be expressed as follows:

1) **Cyclical nature:** The nature of trade cycle is generally cyclical. That is, after the creation of trade cycle the ups and downs fluctuations will be of recurrent and repetitive pattern. As a result, in the economy depression occurs after the state of prosperity after the state of depression continuously and cyclically.

2) **Regularity:** Some of the economists have given the views that there is regularity or periodicity in the fluctuations of the trade cycle or the state of prosperity and the state of depression occurs and completes in a fixed period. According to the economist Hanson, the general time period of the trade cycle is from 7 years to 10 years. In reality, business cycles are recurrent but not periodic. Therefore, span of trade cycle need to be identical or the same.

3) **Wave-like movement:** Movement of the trade cycle is just like the sea-waves. In capitalistic economy depression after prosperity and prosperity after depression occur in wave-like movement. Among these the movement of wave sometimes is excessively powerful and sometimes is less powerful. But whatever be the movement of the wave, the movement of one wave will be similar to the movement of the other wave.

4) **International:** In modern economy, the nature of trade cycle becomes international. So, trade cycle starts at one section of the economy and expands throughout the country, then through the means of international trade it expands from one country to the other. Thus, in this, one directs the other.

5) **Cumulative nature:** The state of prosperity and the state of depression that occur in the trade cycle are of the cumulative nature. What is shown

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by this is that, all states will cumulates such state which will direct this towards the opposite direction. Thought the states of prosperity and depression are not definite, both the states can continue being indefinite. As a result of this, one directs the other.

CLASSIFICATION OF TRADE-CYCLES:

Prof. James Arthur classified business-cycles into three parts as follows:

1) **Major and Minor Trade-cycles:** Major trade-cycles are the trade-cycles, the period of which is very large. Minor trade-cycles are the cycles which occur during the period of a major cycle. Prof. Hanson determine the period of a major-cycle between 8 years and 33 years. Two or three minor-cycles occur during the period of a major cycle. Period of a minor-cycle is 40 months.

2) **Building cycles**: Building cycles are the trade-cycles which are related with construction industry. Period of such cycles range from 15 to 20 years.

3) **Long Waves:** Period of a long wave is of 50 years and it was discovered by a Russian Economist Kondratief. One or two major Trade-cycles occur during the period of a long wave.

VARIOUS THEORIES OF TRADE-CYCLES:

Trade cycles are a series of fluctuations in economic activities. In other words, trade cycles are the series of incidents which occur regularly and frequently in the activities of business and industrial enterprises. Many causes and factors are responsible for trade-cycles. Various theories have been propounded by different economists from time to time to explain the causes of business-cycles. These theories can be divided into two parts:

1) Non-monetary Theories

2) Monetary Theories.

NON-MONETARY THEORIES:

Non-monetary theories of Trade-cycle are as follows:

Climate theory or Sun Spot Theory:

The climatic or sunspot theory was presented by William Stanley Jevons in 1884. According to theory climatic conditions are the main reason of trade cycle. The climate affects the agricultural output. According to him trade cycles are related with the spots which appear at sun in every 10-11 years. These spots affect the density and direction of the heat of sun which in turn, causes changes in climate. If these changes result in the fall in the rainfall, there will be an adverse effect on crops. The sun emits less heat and there is less rain. The climate becomes unfavorable for agriculture. The agriculture output becomes low. The economy faces low economic activities. The low agricultural production affects the output of industries. There is un-employment in the country but after some time the spot disappearing and the sun emits full heat. There are more rains. The crops provide better results. As a result, the stage of recovery is arrived at in the economy which gradually converts into the stage of prosperity. These changes of climate also are cyclical and cause trade-cycle.

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Criticism of Climate Theory:

This theory of trade cycle has been criticized on the following grounds:

a) If sun-spots are the cause of climatic changes, effect on the crops of all the countries of world should be identical but practically it never happens.

b) Climatic changes alone are not sufficient in explaining all the phases of trade-cycles.

c) If climatic changes are the causes of trade-cycles, there should be no trade-cycles in industrial countries of the world but the history proves that these cycles occur in industrial countries as well.

Psychological Theory:

This theory of trade cycles was propounded by Prof. A.C Pigou. According to him, trade cycles occur due to the changes in the psychology of entrepreneurs. Prof. Pigou was of the opinion that the feelings of optimism and pessimism develop in the minds and hearts of entrepreneurs and these feelings cause trade-cycles. When big businessmen are optimistic towards their business and look forward the development and bright future, the phase and recovery starts which gradually leads to the phase of prosperity. They make additional investments in their business and take more interest in expanding their activities. Many small businessmen follow them.

If, on the contrary, big businessmen are pessimistic towards their business, the phase of recession starts which leads to the phase of depression. Businessmen start to withdraw their investments and do not take much interest in the development and expansion of business activities. As a result, there is a decline in the level of production, income and employment.

Criticism:

This theory has also been criticized on several grounds. Important criticisms of this theory are as under:

a) This theory does not explain the factors that the psychology of businessmen. Thus, this theory is incomplete.

b) This theory of trade-cycle is based upon the assumption that the feelings of optimism and pessimism occur in the minds and hearts of businessmen but this theory does not explain why it happens so.

c) This theory does not explain the process of converting one phase of trade-cycles into another phase.

MONETARY THEORIES:

Pure Monetary theory of Prof. Hawtray:

According to Prof. R.G. Hawtrey, "The trade cycle is a purely monetary phenomenon." It changes in the flow of monetary demand on the part of businessmen that lead to prosperity and depression in the economy. He opines that non-monetary factors like strikes, floods, earthquakes, droughts, wars, etc. may at best cause a partial depression, but not a general depression. In actually, cyclical fluctuations are caused by expansion and contraction of bank credit which, in turn, lead to variations

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in the flow of monetary demand on the part of producers and traders. Bank credit is the principle means of payment in the present times. Credit is expanded or reduced by the banking system by lowering or raising the rate of interest or by purchasing or selling securities to merchants. This increases or decreases the flow of money in the economy and thus brings about prosperity or depression.

The expanded phase of the trade cycle starts when banks increase credit facilities. They are provided by the reducing the lending rate of interest and by purchasing securities. These encourage borrowings on the part of merchants and producers. This is because they are very sensitive to changes in the rate of interest. So when credit becomes cheap, they borrow from banks in order to increase their stocks or inventories. For this, they place larger orders with producer who, in turn, employs more factors of production to meet the increasing demand. Consequently, money incomes of the owners of factors of production increase thereby increasing expenditure on goods. The merchants find their stocks being exhausted. They place more orders with producers. This leads further increase in productive activity, in income, outlay, demand and a further depletion of stocks of merchants. According to Hawtrey, "Increased activity means increased demand, and increased demand means increased activity. A vicious circle is set up, a cumulative expansion of productive activity."

As the cumulative process of expansion continues, producers quote higher and higher prices. Higher prices induce traders to borrow more in order to hold still larger stocks goods so as to earn more profits. Thus optimism encourages borrowing, borrowing increases sales, and sales raise optimism.

According to Hawtrey, prosperity cannot continue limitlessly. It comes to an end when banks stop credit expansion. Banks refuse to lend further because their cash funds are depleted and the money in circulation is absorbed in the form of cash holdings by consumers. Another factor is the export of gold to other countries when imports exceed exports as a result of high prices of domestic goods. These factors force the banks to raise interest rates and refuse to lend. Rather, they ask the business community to repay their loans. This starts the recessionary phase.

In order to repay bank loans, businessmen start selling their stocks. This sets the process of falling prices. They also cancel orders with producers. The latter curtail their productive activities due to fall in demand. This, in turn, leads to reduction in the demand for factors of production. There is unemployment. Incomes fall. Falling demand, prices and incomes are the signals for depression. Unable to repay bank loans, some firms go into liquidation thus forcing banks to contract credit further. Thus the entire process becomes cumulative and the economy is forced in to depression.

According to Hawtrey, the process of recovery is very slow and halting. As depression continues, traders repay bank loans by selling their stocks at whatever prices they can. As a result, money flows into the reserves of banks and funds increase with banks. Even though the bank rate is very low, there is "credit deadlock" which prevents businessmen to borrow from banks due to pessimism in economic activity. This deadlock can be broken by following a cheap money policy by the central bank which will ultimately bring about recovery in the economy.

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Criticism:

Some of important criticisms of this theory are as under:

a) This theory considers only the monetary factors while the fact is that both monetary and non-monetary factors are responsible for trade-cycles.

b) This theory assumes that the investment decisions are affected by credit facilities and the rate of interest only but the fact is that the expectations of changes of price in future also affect investment decisions to a great extent.

c) This theory ignores the productivity of capital.

d) Prof. Hawtray has not analyzed the changes of the flow of trade-cycles.

Schumpeter's theory of innovations:

The innovations theory of trade cycles is associated with the name of Joseph Schumpeter. According to Schumpeter, innovations in the structure of an economy are the source of economic fluctuations. Trade cycles are the outcome of economic development in a capitalist society. Schumpeter accepts Juglar's statement that the cause of depression is prosperity," and then gives his own view about the originating cause of the cycle.

Schumpeter's approach involves the development of his model into two stages. The first stage deals with the initial impact of innovation and the second stage follows through reactions to the original impact of innovation.

The first approximation starts with the economic system in equilibrium with every factor fully employed. Every firm is in equilibrium and producing efficiently with its costs equal to its receipts. Product prices are equal to both average and marginal costs. Profits and interest rates are zero. There are no savings and investments. This equilibrium is characterized by Schumpeter as the "circular flow" which continues to repeat itself in the same manner year after year, similar to the circulation of the blood in an organism. In the circular flow, the same products are produced every year in the same manner.

Schumpeter's model starts with the breaking up of the circular flow by innovations in the form of a new by an entrepreneur for earning profit.

By innovation Schumpeter means "such changes in the production of goods as cannot be affected by insignificant steps or variations on the margin." An innovation may consist of:

- The introduction of a new product.
- The introduction of a new method of production.
- The opening up of a new market.
- The conquest of a new source of raw materials or semi-manufactured goods.
- The carrying out of the new organizations of any industry.

Innovations are not inventions. According to Schumpeter, there is nothing that can explain that inventions occur in a cyclical manner. It is the introduction of a new

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product and the continual improvements in the existing ones that are the principal causes of business cycles.

Schumpeter assigns the role of an innovator not to the capitalist but to an entrepreneur. The entrepreneur is not a man of ordinary ability but one who introduces something entirely new. He does not provide funds but directs their use.

To perform his economic function, entrepreneur two things: first, the existence of technical knowledge I order to produce new products, and second, and the power of disposal over the factors of production in the form of bank credit. According to Schumpeter, a reservoir of untapped technical knowledge exists in a capitalist society which he can make use of. Therefore, credit is essential for breaking the circular flow.

The innovating entrepreneur is financed by expansion of bank credit. Since investment in an innovation is risky, he must pay interest on it. With his newly acquired funds, the innovator starts bidding away resources from other industries. Money incomes increase. Prices begin to rise thereby stimulating further investment. The new innovation starts producing goods and there is an increased flow of goods in the economy. Consequently, supply exceeds demand. Prices and cost of production of goods start declining until recession sets in. Because of the low prices of goods, producers are not willing to expand production. During this period of recession credit, prices and interest rates decline but total output is likely top average larger than in the preceding prosperity.

Thus Schumpeter's first approximation consists of a two-phase cycle. The economy starts at the Equilibrium State, rises to a peak and then starts downward into a recession and continues till the new equilibrium is reached. This new equilibrium will be at a higher level of income than the initial equilibrium because of the innovation, which started the cycle

The second approximation of Schumpeter follows through the reactions of the impact of original innovation. Once the original innovation becomes successful and profitable, other entrepreneurs follow it in "swarm-like clusters." Innovation on one field induces innovations in related fields. Consequently, money incomes and prices rise and help to create a cumulative expansion throughout the economy. With the increase in the purchasing power of consumers, the demand for the products of old industries increases in relation to supply. Prices rise further. Profits increase and old industries expand by borrowing from the banks. It induces a secondary wave of credit inflation which is superimposed on the primary wave of innovation. Over optimism and speculation add further to the boom. After a period gestation, the new products start appearing in the market displacing the old products and enforcing a process of liquidation, readjustment and absorption.

The demand for the old products is decreased. Their prices fall. The old firms' contract output and some are even forced to run into liquidation. As the innovators start repaying bank loans out of profits, the quantity of money is decreased and prices tend to fall. Profits decline. Uncertainty and risks increase. The impulse for innovation is reduced and eventually comes to an end. Depression sets in, and the painful process of readjustment to the "point of previous neighborhood of equilibrium" begins. Ultimately the natural forces of recovery bring about a revival. To

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Schumpeter, cyclical swings are the cost of economic development under capitalism, a permanent feature of its dynamic time-path.

Criticism:

Some of the important criticisms of this theory are as under:

a) This theory assumes that the innovations are the only cause of cause of trade-cycles but this assumption is not correct. The fact is that it is one of the several factors causing trade cycles but it is not the only factor.

b) Bank credit alone cannot finance innovations as assumed in their theory. The fact is that the innovations are financed through the issue of shares, debentures and public deposits also.

c) Prof. Schumpetor could not explain the phase of recovery clearly.

d) This theory also does not consider the periodicity of trade-cycles.

Keynes's theory of the trade cycle:-

The Keynesian theory of the trade cycle is an integral part of his theory of income, output and employment. Trade cycles are periodic fluctuations of income, output and employment. Keynes regards the trade cycle as mainly due to "a cyclical change in the marginal efficiency of capital, though complicated and often aggravated by associated changes in the other significant short-period variables of the economic system."

According to Keynes, the principal cause of depression and unemployment is the lack of aggregate demand. Revival can be brought about by raising aggregate demand which in turn can be raised by increasing consumption and/or investment. Since consumption is stable during the short run, therefore revival is possible by increasing investment. Similarly, the main cause of the downturn is reduction in investment. Thus in the Keynesian explanation of the trade cycle, "the cycle consists primarily in the rate of investment, according to Hansen. And fluctuations in the rate of investment are caused mainly by fluctuations in the marginal efficiency of capital. The marginal efficiency of capital (MEC) depends on the supply price of capital assets and their prospective yield. Since the supply price of capital assets is stable in the short run, the marginal efficiency of capital is determined by the prospective yield of capital assets, which in turn depends on business expectations. Fluctuations in the rate of investment are also caused by fluctuations in the rate of interest. But Keynes gives more importance to fluctuations in the marginal efficiency of capital as the principal cause of cyclical fluctuations.

To explain the course of the Keynesian cycle, we start with the expansion phase. During the expansion phase, the marginal efficiency of capital is high. Businessmen are optimistic. There is rapid increase in the rate of investment. Consequently, output employment and income increase. Every increase in investment leads to a multiple increase in income via the multiplier effect. This cumulative process of rising investment, income and employment continues till the boom is reached.

As the boom progresses, there is a tendency for the marginal efficiency of capital to fall due to two reasons. First, as more capital goods are being produced steadily,

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the current yield on them declines. Second, at the same time the current costs of new capital goods rise due to shortages and bottlenecks of materials and labour. "Thus the prevailing optimistic estimate of future yields of capital good is increasingly displaced by disillusion. The collapse in the marginal efficiency of capital precipitates a sharp increase in liquidity preference. This causes a rise in the rate of interest, and thus the situation is aggravated....But the cyclical swings in the marginal efficiency of capital are made more violent than the facts justify by the uncontrollable and disobedient psychology of the business world.'

During the downturn, investment falls due to a fall in the marginal efficiency of capital and rise in the rate of interest. This leads to a cumulative decline in employment and income via the reverse operation of the multiplier. Further, the fall in the marginal efficiency of capital may shift the consumption function downward thereby hastening the depression. Keynes attaches more importance to the sudden collapse of the marginal efficiency of capital than to a rise in the rate of interest as an explanation of the downturn of the cycle leading to the crises and the depression.

Unlike the sudden collapse of the economic system, the revival takes time. It depends on factors, which bring about the recovery of the marginal efficiency of capital. "The time which must elapse before recovery begins, depends partly upon the magnitude of the normal rate of the economy and partly upon the length of life of capital goods. As shorter length of life of durable assets, the shorter will be the depression. And also, the more rapid the rate of growth, the shorter will be the depression." Another factor which governs the duration of depression is the "carrying costs of surplus stocks." According to Keynes, the carrying cost of surplus stocks during the depression is seldom less than 10 per cent per annum. So for a few years disinvestment in stocks will continue till the surplus stocks are exhausted. Optimism takes the place of pessimism. The marginal efficiency of capital increases. Fresh investment starts taking place. Revival has started.

Criticism:-

Some of the important criticisms of the theory are as under:

a) According to Keynes, Marginal Efficiency of Capital (MEC) is the only factor affecting the amount of investments. Thus, he has ignored several other factors affecting the amount of investments.

b) According to Keynes, remedy to overcome the situation of the economic crises is cheap money policy but it is not necessary that this policy will always help in overcoming the situation of economic crises and in increasing the amount of investments.

c) Complete theory of Prof. Keynes depends upon Marginal Efficiency of Capital but he has not defined and explained the Concept of MEC.

d) Prof. Keynes has supported 'Government Regulated Investment Policy' to overcome the problem of economic crises but Prof. Keynes did not predict that this policy means gradual Government control over the whole economy.

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CAUSES OF TRADE CYCLE:

Fluctuations in trade cycles can be caused by one or many of the following factors:-

1) **Expansion of Loans and Contraction of Loans by Banks:**

A change in the credit policy of banks is an important cause of Trade-cycles. When banks adopt the policy of credit expansion, it leads to the phase of prosperity. On the other hand, when banks adopt the policy of credit contraction, it leads to the phase of depression.

2) **Mala-Adjustment between Demand and Investment:**

If there is Mala-adjustment between saving and investment, it causes Trade-cycles. When there is over-investment, it leads to the phase of prosperity and when there is under-investment, it leads to the phase of depression.

3) **Lack of adjustment between Demand and Supply:**

Demand and supply of goods and services play an important role in giving birth to Trade-cycles. If the demand of goods and services is more than their supply, it causes prosperity. If, on the other hand, supply of goods and services is more than their demand, it causes depression.

4) **Lack of Adjustment between Income and Expense of consumers:**

If the income of consumers is more than their regular expenses, the phase of prosperity is caused. If, on the other hand, income of consumers is less than their regular expenses, it leads to the phase of depression.

5) **Feeling of Entrepreneurs:**

An important cause of Trade-cycle is the feeling of entrepreneurs. If the entrepreneurs are optimistic and hopeful, it will lead to the phase of prosperity. If, on the other hand, entrepreneurs are pessimistic and frustrated, it will lead to the phase of depression.

6) **Development of New Technologies of Production:**

Development of new technologies of production affects the level of production, employment and income. If new technologies of production develop, it leads to the phase of prosperity and if there is a lack of development of new technologies, it may lead to the phase of depression.

7) **Lack of favorable Ratio:**

Development of new technologies of production disturbs the existing ratio of factor of production. Sometimes the ratio becomes more favorable and sometimes it becomes unfavorable. When this ratio is favorable, it leads to the phase of prosperity and when this ratio is not favorable, it leads to the phase of depression.

8) **Psychology of Consumers:**

Psychology of consumers also causes Trade-cycles. If the consumers are hopeful and optimistic, it will lead to the phase of prosperity and if the

consumers are pessimistic and not hopeful, it may lead to the phase of depression.

9) Seasonal Fluctuations:

Seasonal fluctuations affect agricultural production to a large extent, which in turn, causes Trade-cycles.

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CONTROL OF TRADE – CYCLES:

Measures to control Trade-cycles can broadly be divided into two parts:

- Preventive Measures
- Formal Measures

PREVENTIVE MEASURES:

Preventive measures are not the measures to control Trade-cycles. These are the measures which are adopted to minimize the possibility of occurrence of the Trade-cycles. Important preventive measures are as follows:

1. Agriculture should not depend upon rain-fall. Adequate irrigation facilities should be developed in the country.
2. Inequalities in the distribution of income and wealth should be reduced to minimum.
3. Speculative trend should be checked.
4. Wherever necessary, industries should be nationalized.
5. All the effects should be made to maintain proper balance between demand and supply.
6. Monetary and fiscal policies should be well regulated and controlled.
7. All the business and industrial activities should be strictly controlled.

FORMAL MEASURES:

Formal measures are the measures which cannot help in removing the fundamental causes of Trade-cycles, however can minimize them. Important formal measures are as under:

1. Monetary Policy:

Monetary policy includes all the measures through which central bank of the country regulates, the supply of money and credit in the country. To overcome the situation of depression, the policy of credit expansion is followed so that the entrepreneurs may be encouraged to take to take more loans and to increase their investment. The level of production, employment and income may be increased. On the contrary to overcome situation of money inflation, the policy of credit contraction is adopted o that the entrepreneurs may be compelled to withdraw their investment.

Check Your Progress

1. What is trade cycle?
2. Define building cycle?
3. Explain Balance of Payment?

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2. **Fiscal Policy:**

There are four important components of the fiscal policy – Budget policy, Taxation Policy, public Expenditure and Public debt. Fiscal Policy plays an important role in controlling trade-cycles. During the period of depression, important object of fiscal policy should be to increase effective demand. During the period of money inflation, main aim of fiscal policy should be to reduce public expenditure.

3. **Physical Controls:**

Physical controls include the price support policy, price control and rationing etc. During the period of depression, Government should fixed minimum prices so that the rise in price may be controlled. In addition, Government should purchase various products at a pre-determined price. During the period of money inflation, Government should adopt the policy of rationing so that the goods may be provided to consumers at reasonable prices.

4. **Other measures:**

Other measures to control Trade-cycles are as follows:

a) International assistance should be obtained to fight against the problems of depression and unemployment.

b) Technical unemployment should be removed by removing market imperfections.

BALANCE OF TRADE

Balance of trade may be defined as the difference between the value of goods sold to foreigners by the residents and firms of the home country and the value of goods purchased by them from foreigners. If value of exports of goods is equal to the value of imports of goods, we say that there is balance of trade equilibrium and if the latter exceeds the former, then we say that there is balance of trade deficit. But if the former exceeds the latter, i.e., if the value of exports of goods is more than the value of imports of goods, we say there is surplus balance of trade.

The balance of trade is the difference between the monetary value of exports and imports in an economy over a certain period of time. A positive balance of trade is known as a trade surplus and consists of exporting more than is imported; a negative balance of trade is known as a trade deficit or, informally, a trade gap.

The balance of trade forms part of the current account, which also includes other transactions such as income from the international investment position as well as international aid. If the current account is in surplus, the country's net international asset position increases correspondingly. Equally, a deficit decreases the net international asset position.

The Balance of Trade is identical to the difference between a country's output and its domestic demand - the difference between what goods a country produces and how many goods it buys from abroad; this does not include money re-spent on foreign stocks, nor does it factor the concept of importing goods to produce for the domestic market.

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BALANCE OF PAYMENT:

The balance of payment is one of the oldest and most important statistical statements for any country. It is a systematic record of all economic transactions between the residents of one country and the residents of the rest of the world in a year. Since we merely record all receipts and payments in international transactions using double entry systems, the balance of payments always balance in an accounting sense.

Overall balance of payments is the sum of balance of current account and balance of capital account. It includes all international monetary transactions of a reporting country vis-à-vis rest of the world. The balance of payment must always balance in a book-keeping sense. This is because of any surplus (or deficit) in the overall balance of payments there must be a corresponding debit (or credit) entry in the net changes in external reserves. In other words, if there is a surplus it adds to external reserves of the country and if there is a deficit, it reduces down the external reserves of the country.

A record of all transactions made between one particular country and all other countries during a specified period of time. BOP compares the dollar difference of the amount of exports and imports, including all financial exports and imports. A negative balance of payments means that more money is flowing out of the country than coming in, and vice versa.

Balance of payments may be used as an indicator of economic and political stability. For example, if a country has a consistently positive BOP, this could mean that there is significant foreign investment within that country. It may also mean that the country does not export much of its currency.

This is just another economic indicator of a country's relative value and, along with all other indicators, should be used with caution. The BOP includes the trade balance, foreign investments and investments by foreigners.

Given that it reflects all payments and liabilities to foreigners and all payments and obligations received from foreigners, the balance of payments is one of the major indicators of a country's status in international trade. It has the potential to influence the prices of free-floating currencies, because free-floating currencies are affected not only by political events or government policies but also by the economic events represented by the BOP. As every country strives to a have a favorable balance of payments, the trends in, and the position of, the balance of payments will significantly influence the nature and types of regulation of export and import business in particular. BOPS statistics (at least estimates of major items) are regularly compiled published and are continuously monitored by companies, banks and government agencies. Obviously the BOP statement contains useful information for financial decision matters. In the short run, BOP deficits or surpluses may have an immediate impact on the exchange rate. Basically BOP records all transactions that create demand for and supply of a currency and the possible impact on the exchange rate. Further they may signal a policy shift on the part of the monetary authorities of the country, unilaterally or in concert with the trading partners. For example a country facing a current account deficit may raise interest rates to attract short-term capital inflow to prevent depreciation of its currency or it may tighten credit and money

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supply to make it difficult for domestic banks and firms to borrow the home currency to make investments abroad. It may force exporters to realize their export earnings quickly and bring the foreign currency home. Countries suffering from chronic deficits may find their ratings being downgraded because the markets interpret the statement as evidence that the country may have difficulties in servicing its debt. Finally BOP accounts are intimately connected with the overall saving investment balance in a country's national accounts. Continuing deficits and surpluses may lead to fiscal and monetary actions designed to correct the balance, which in turn will affect exchange rates and interest rates in the country.

Therefore BOP accounting serves to highlight a country's competitive strengths and weaknesses, and helps in achieving balanced economic-growth. It can significantly affect the economic policies of a government, and the economy itself.

Significance of Balance of Payment:

Monetary and fiscal policy must take the BOP into account at the national level. Multinational businesses use various BOP measures to gauge the growth and health of specific types of trade or financial transactions by country and regions of the world against the home country.

Businesses need BOP statement to anticipate changes in host country's economic policies driven by BOP events. BOP statement may be important for the following reasons:

1. BOP indicates countries financial position in comparison with foreign countries, thereby a country's ability to buy foreign goods or services.
2. BOP is important indicator of pressure on a country's exchange rate, and thus on the potential of a firm trading with or investing in that country to experience foreign exchange gains or losses. Changes in BOP may presage the impositions of foreign exchange controls.
3. BOP statement helps in knowing the changes in a country's BOP may also signal imposition (or removal) of controls over payments, dividends, and interest, license fees, royalty fees, or other cash disbursements to foreign firms or investors.
4. BOP statement helps to forecast a country's market potential, especially in the short- run. A country experiencing a serious BOP deficit is not likely to import as much as it would if it were running a surplus.
5. BOP statement can also signal increased riskiness of lending to particular country and it also helps to in the formulation of trade and fiscal policies.

TRENDS IN BALANCE OF PAYMENT OF INDIA:

A country like India, which is on the path of development generally, experiences a deficit in the balance of payments situation. This is because such a country requires imported machines; technology and capital equipments in order to successful launch and carry out the programme of industrialization. Also, since initially it has only primary goods to offer as exports, it generally has unfavorable balance of payments position. As pace of development picks up it has to have 'maintenance imports'

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although it has now more sophisticated goods to offer for exports. But the situation remains the same i.e., deficit balance of payments.

The international Balance of Payments (BOP) of a country reflects its economic strengths and weaknesses. A typical problem of the developing countries is that of a chronic BOP deficit, India being no exception. Our country has been facing BOP disequilibrium right since independence, culminating into a disaster in 1990-91, the year of the acute BOP crisis. The country was on the verge of defaulting. This crisis led to the massive changes in the country's economic policy, popularly known as the Structural Adjustment Program or New Economic Policy (NEP) regime, focusing on liberalization and globalization of the economy.

We opted for a very cautious approach and today after having overcome the initial hiccups of a newly liberalized economy; we have a fairly comfortable BOP situation. Even though we have attained a comfortable BOP position reflecting a strong emerging economy, BOP management still remains a tightrope walk for policy makers, as now we are exposed to each and every change in the global economic scenario.

Trends & problems of India's BOP – 1949-50 to 1999-2000

The disequilibrium in India's BOP has been caused by both internal as well as external factors. The need for development of such a big nation with a huge population is one of the main causes for the recurring BOP problem. The BOP always under pressure and had huge deficits due to high imports of food grains and capital goods, the heavy external borrowings and its payment and poor exports.

After achieving independence, the foremost challenge before India was of attaining economic growth with social justice.

India's aim after attaining independence was to attain economic self- reliance. For this the country had to tap both the internal as well as the external resources. Not only was our technology backward then, there was food scarcity too. Large amounts of food grains had to be imported to feed the huge population.

Protectionist Policies

The main objective of the Second Five Year Plan (1956-57 to 1960-61) was to attain self reliance through industrialization. Self reliance was to be achieved through import substitution. For this, basic industries had to be set up which required import of capital goods. Exports were expected to take-off on own industrialization. It was felt that "....It is only after industrialization has proceeded to some way that increased production at home will be reflected in larger export earnings." The import substitution strategy was based on non-price, physical- interventionist policies like licensing, quotas and other physical restrictions on imports. Heavy capital goods were imported but other imports were severely restricted to shut off competition in order to promote domestic industries. All focus was on import substitution, with gross neglect of exports. Such inward looking protectionist policies did result in some self-reliance in the consumer goods industries, but the capital goods industries remained mostly import intensive.

The high degree of protection to Indian industries led to inefficiency and poor quality

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products due to lack of competition. The high cost of production further eroded our competitive strength.

Rising petroleum products demand, the two oil shocks, harvest failure, all put severe strain on the economy. The BOP situation remained weak throughout the 1980s, till it reached the crisis situation in 1990-91; When India was on the verge of defaulting due to heavy debt burden and constantly widening trade deficit.

External Debt

India had to resort to large scale foreign borrowings for its developmental efforts in the field of basic social and industrial infrastructure. The country's resources were very much limited due to low per capita income and savings. The situation worsened because Government of India resorted to heavy foreign borrowings to correct the BOP situation in the short run out of panicky. By the Seventh Five Year Plan, the debt service obligations rose sharply because of harder average terms of external debt, involving commercial borrowing, repayments to the IMF and a fall in concessional aid flow.

Export Promotion

Although by the Sixth Five Year Plan we had done away with the need of food grain imports and some crude oil was being produced domestically, BOP position was still not comfortable due to low exports. The need for export promotion was felt during the 1960s. The Third Five Year Plan introduced certain export promotion policies like cash compensatory schemes, tax exemptions, duty drawbacks, Rupee devaluation etc. However our exports remained discouraging.

Indian exports depended largely on world trade situation.

We were mainly primary product exporters, the price of which fluctuated heavily with fluctuations in world market demand.

- Primary products exporting countries have an unfavorable term of trade. The earnings from primary product exports were low and unstable.
- Secondly, the quality of Indian products was not up to the world standards due to which we could not sustain markets.
- Third, only residue products were mainly exported. The fact that export earnings also contribute to economic development was overlooked. Cumbersome procedures for license etc served as disincentives for exporters. Domestic inflation further reduced the competitiveness of India's export.

Exchange Rate

The instability of the exchange value of the rupee was another problem. The constant devaluations (to promote exports) raised the amount of external debt. The value of rupee was managed by the central bank (fixed exchange rate). The gap between official and market exchange rate created problems for the exporters and importers. The strict foreign exchange controls also encouraged hawala trade.

India followed a strongly inward looking policy, laying stress on import substitution. Ideally, imports should be financed by export earnings. But because there was export pessimism, the deficit was financed either by the invisible earnings or by

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foreign aid or depletion of valuable foreign exchange reserve. Much import constraint to check trade deficit was also not possible because India's imports were mainly 'maintenance imports'. On one hand import reduction was not possible and on the other exports suffered due to the recession in the 1980s.

India's BOP was thus beset with several problems. The process of liberalization began from the mid 1980s. Restriction on certain imports were removed, particularly those which were used as inputs for export production. But by then the situation was already bad and all the mismanagement ultimately led to the 1990-91 BOP crisis.

Trends in India's BOP (2000-2010)

The basis of a sound BOP situation lies in the inner economic strength of the country. The domestic economy has to be strong enough to face international challenges.

After independence, India adopted inward oriented policies with this very objective. The objective by itself was good, no doubt; but the planners and politicians became so obsessed with domestic, indigenous self sufficiency that the country was almost completely sealed from all foreign influence. The advantages of foreign trade were overlooked year after year. Indian entrepreneurs were dragging with cheap, obsolete technology and devouring subsidies, creating a huge national burden of large sick public sector units. Instead of acting as an incentive, government protection in fact harmed our industrial development.

The **New Economic Policy** of the nineties aimed at opening up the economy, to allow free trade and competition and reduce the role of government significantly in foreign trade matters. Restrictions on international trade were removed, foreign investments were allowed and a new Liberalized Exchange Management System was introduced to reap the benefits of competition and counter the disadvantages of a closed, inward looking trade policy.

The changes towards liberalization and globalization of the Indian economy were carried out very cautiously in phases.

There were political hurdles as well as genuine fears on the national economy front. The exchange rate could be changed from fixed to free market rate determination system only when the domestic economy and BOP are strong enough to absorb fluctuations in the global market. The other important fear was regarding the foreign investments. Foreign Direct Investment (FDI) was preferred over Foreign Institutional Investment (FII). FII or portfolio investment does inject foreign exchange in the country, but such portfolio investment is highly volatile. It can be taken back at the slightest hint of weakening economy, causing outflow of foreign exchange.

With liberalization FII was expected more than FDI, because then our infrastructure was not developed enough to attract much FDI. Rupee too was only made partially convertible. Therefore these sectors were opened slowly. This cautious approach saved India from the South East Asian Financial crisis in 1999 when exchange value of many Asian countries went tumbling down drastically.

After overcoming the initial hiccups and doubts in the last decade (1991-99), the Indian economy has finally got a sound base with a strong BOP.

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Foreign Investment

India successfully attracted foreign investors to the country with its sincere positive economic changes like reduced paperwork and other cumbersome formalities. Foreign investments kept the country afloat during the recent global recession because the effect of recession was worse in the advanced countries, the investors turned to the less affected emerging economies like China and India. Although initially foreign investment in the country did slow down considerably due to risk aversion in the face of the recession, but it picked up again because emerging economies like India and China were swift to implement corrective measures to fight recession, showing commendable resilience to the recession which badly shook the much advanced economies. FDI inflow has been mainly in manufacturing, communication services and real estate sector.

Foreign exchange reserves

- Foreign exchange reserves (FER) are an essentially important factor in the country's economy, reflecting its economic strength in the global scenario.
- Foreign investors brought in the much required foreign exchange to country adding to our foreign exchange reserve which was reduced to a meager 1 billion $ in 1990, barely able to sustain a month's imports. The rise in foreign exchange reserve meant lesser need for interest bearing foreign loans for development projects and essential imports.
- From a low level of US $ 5.8 billion at end- March 1991, FER gradually increased to US $ 25.2 billion by end-March 1995, US $ 113.0 billion by end-March 2004 and US$ 314.6 billion in end-May 2008.
- The reserves declined to US$ 252.0 billion at end-March 2009. This decline was due to the global crisis/recession and the strengthening of US Dollar against other international currencies. During 2009-10, the level of foreign exchange reserves from US$ 252.0 billion at end-March 2009 to US$ 283.5 billion at the end of December 2009, due to depreciation of the US dollar. Today India is the fourth largest foreign exchange holder in the world after China, Japan and Russia.
- An important development in 2009-10, is the investment of foreign exchange reserves in domestic infrastructure projects. Financing domestic infrastructure projects from the FER means doing away with the need for external assistance and carrying out the project without the fear of monetary expansion.

Exchange Rate

- The RBI monitors and manages the exchange rate with flexibility, while allowing the market demand and supply conditions to determine its movements over a period of time. RBI intervenes to reduce excess volatility, to prevent destabilizing speculative activities and maintaining adequate levels of reserve.
- The rupee value after fluctuating frequently in the last decade, adjusting to the new liberalized policies of the country and the freeways of the global

market, has now stabilized to a great extent owing to the strengthening of the economy.

- In 2008-09, the Rupee depreciated against major international currencies due to the decline in capital flows and widened trade deficit. But it strengthened again as capital inflows in the form of FDI and NRI deposits increased in 2009-10.

Current Account of BOP

- The current account of BOP comprises of the merchandise trade (export and import) and the invisibles (services, transfers etc.). The liberalized policy and comparatively hassle free formalities for export and imports have given a boost to our export industries as well as industries catering to domestic demands. Exports and imports both recorded double digit growth rate. India is now a mainly manufactured goods and services exporter enjoying a better terms of trade, compared to what it was, primary goods exporter, prior to 1991. The share of India's exports in world trade has risen from 0.7 % in 2000 to 1.2 % in 2008. Services too have expanded to various fields catering to both domestic and international clients. The share of India's export.
- The current account balance widened in 2008-09 (-2.4 % of GDP) compared to that of 2007-08 (-1.3% of GDP) due to recession, but it was sustainable. The external demand shock led to decline in export growth from 57 % in April-June 2008 to (-) 8.4 % in Oct.- Dec. 2008 and further to (-) 20 % in January-March 2009, a fall for the first time since 2001-02. Imports too declined similarly due to domestic industrial demand and sharp decline in international crude oil and other primary commodity prices.
- The surplus in the invisibles account has always helped compensate the trade deficit to a great extent. In the face of the recent global recession too, it was the net positive invisibles account balance that kept the current account deficit to a sustainable level. Software services and workers' remittances were mainly responsible for the higher invisible surplus. These remained unaffected by recession. However, travel and transportation were badly hit by global recession.
- India's net invisibles increased by 18.7% in 2008-09.
- With the economy (domestic as well as global) picking up momentum once again, there is hope of sunshine once again in the trade and financial world. India having cruised fairly successfully through the rough patch of recession can look forward to reaping greater benefits from world market, at least till the time the advanced economies which were badly affected by recession, revive fully. Our reserves are comfortable, exchange rate is competitive, service sector exports are also buoyant and capital inflow through FDI is also encouraging. In short, the BOP situation is quite well managed and comfortable. However, learning from the experiences of the financial crises occurring from in various parts of the world from time to time, we need to continue our cautious approach towards BOP management. The country cannot afford a setback to its economic growth achieved through drastic

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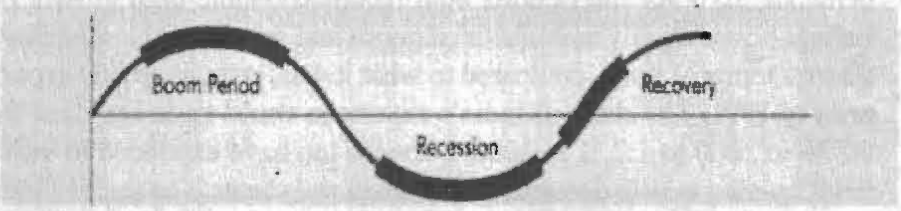
changes in national economic policies. India certainly has come a long way since the days of the protectionist policies, but there is yet a lot to be achieved, particularly in the infrastructure sector, in order to become a truly strong economy.

CASE STUDY:

Trade cycle and Business Cycle

The national economy experiences periods of 'boom' and sometimes periods of 'bust'. In periods of boom most people tend to be better off. Businesses have full order books for their products so that sales and profits are high. At the same time there are high levels of employment. School leavers and graduates find it easy to get work with good prospects.



However, history shows that the good times do not last for ever. This is when recession sets in a period of weakening demand for most goods and services. This can then turn into a slump when there is rapidly growing unemployment and sales and profits fall substantially.

The period of time a recession may last for is variable. Forecasters look for signs of 'green shoots'. These are signs that a recovery is taking place. The 'green shoots' include new companies setting up, development of new products and firms starting to take on more employees.

A recession occurs when for two quarters (a quarter is three months) in a row the value of all the goods sold in an economy falls. This occurred in the UK and other parts of Europe in the second half of 2008.

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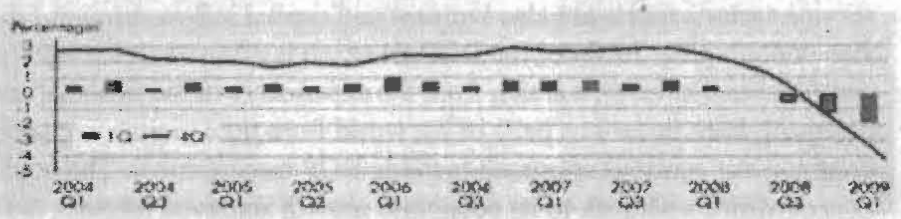
Economic activity is measured by Gross Domestic Product (GDP). GDP is a measure of all of the goods and services sold in an economy in a particular period, for example, a quarter.



The line graph most visually shows the impact of recession at the end of 2008:

" quarter by quarter changes shown in blocks

" four quarters (1 year) changes shown in the line graph.

How does recession affect a company like the Davis Service Group?

" Some of the Group's activities are in sectors that are not affected significantly by recession, for example, healthcare. Governments retain this type of activity as a high priority for the population, even in times of recession. About 30% of the Davis business is in this service sector.

" Some of the Group's activities are in mature markets. It is inevitable that there will be some decline in demand in these markets because in a recession demand falls and customers of Davis reduce their requirements and spending levels.

Examples of mature markets	Examples of emerging markets
• UK workwear	• Poland
• European Hotels	• Baltic Republics
	• Czech Republic

However, at the same time Davis Service Group has been growing rapidly in new markets such as Poland, the Baltics, and the Czech Republic. These economies are emerging markets at a different stage of the business cycle. This means that because their economies are still developing and textile rental is a new service, the impact of recession is smaller. As Davis is developing a new market, it therefore sees its sales continuing to increase.

SUMMARY:

- The trade cycle refers to the ups and down in the level of economic activity which extend over to a period of several years.
- Economic growth can fluctuate within different phases, like Prosperity or boom (which is high growth causing inflation), Peak (top of trade cycle), Downturn or Recession (fall in economic growth), Recovery (upturn of economic growth).
- There are six phases of trade cycle: Inflation, Boom, Deflation, Recession, Depression, and Recovery.
- Theories of trade cycle can be divided into two parts, i.e. Non-monetary Theories, Monetary Theories.
- Balance of trade may be defined as the difference between the value of goods sold to foreigners by the residents and firms of the home country and the value of goods purchased by them from foreigners.
- The balance of trade is the difference between the monetary value of exports and imports in an economy over a certain period of time.
- The balance of payment is one of the oldest and most important statistical statements for any country.
- BOP is a systematic record of all economic transactions between the residents of one country and the residents of the rest of the world in a year.

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Check Your Progress

4. Explain Balance of Trade?
5. What is control of Trade Cycles?

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ANSWERS TO 'CHECK YOUR PROGRESS'

1. "A trade cycle is composed of periods of good trade characterized by rising prices and low unemployment percentage, with periods of bad trade characterized by following prices and high unemployment percentages."
2. **Building cycles**: Building cycles are the trade-cycles which are related with construction industry. Period of such cycles range from 15 to 20 years.
3. The balance of payment is one of the oldest and most important statistical statements for any country.
4. Balance of trade may be defined as the difference between the value of goods sold to foreigners by the residents and firms of the home country and the value of goods purchased by them from foreigners.
5. Measures to control Trade-cycles can broadly be divided into two parts:
   (i) Preventive Measures
   (ii) Formal Measures

TEST YOURSELF :

Long Question:

1) What is Trade-Cycle? Discuss its various phases.
2) Discuss various characteristics of Trade or Business Cycle.
3) Critically explain the Climate theory or Sun Spot Theory of Trade –cycle.
4) Critically explain the Pure Monetary theory of Prof. Hawtray.
5) Discuss Keynes's theory of Trade-cycle.
6) State briefly the main causes of Trade-cycles and examine the possible remedies to check them.
7) Explain the term 'Balance of Trade'.
8) Briefly discus the term 'Balance of Payment'.
9) Explain recent trends in Balance of Payment of India.
10) What is the current account of BOP?

Short Questions:

1) What do you mean by Trade cycle?
2) Explain classification of Business Cycle.
3) What are the causes of Trade Cycle?
4) Discuss on Balance of Trade.
5) What do you mean by Balance of Payment?

FURTHER READING

- Managerial Economics: P.L.Mehta
- Raj Kumar Gupta
- K.N. Devadi