

#### SCHOOL OF MANAGEMENT STUDIES

**UNIT – I - BUSINESS ECONOMICS - SBAA1103** 

#### **UNIT 1: INTRODUCTION**

Definition – Nature – Scope - Limitations Of Economics - Economics An Art Or Science -Relevance Of Economics In Business Management - Utility Analysis - Marginal Theory Of Utilities And Equi – Marginal Theory Of Utility

#### Introduction

Political Economy is another name of Economics. "Polis "in Greek means a state. The term Political economy means the management of the wealth of the state. The state is expected to get maximum benefit for the society. The situation that prevails in real world. The means which satisfy our wants are limited. Time and money are limited. Land ,labour and capital used for production are limited. Science has increased our resources but our want also has increased.

- Two major factors are responsible for the emergence of economic problems. They are :
  - The existence of unlimited human wants and
  - The scarcity of available resources
- The numerous human wants are to be satisfied through the scarce resources available in nature.
- Economics deals with how the numerous human wants are to be satisfied with limited resources.
- Thus, the science of economics centers on want-effort-satisfaction.
- Economics not only covers the decision-making behavior of individuals but also the macro variables of economics like national income, public finance, international trade and so on.DEFINITIONS OF ECONOMICS
- Several definitions of Economics have been given. For the sake of convenience let us classify the various definitions into four groups:
  - 1. Science of wealth
  - 2. Science of material well-being
  - 3. Science of choice making and
  - 4. Science of dynamic growth and development

#### 1. Science of wealth

- Some earlier economists defined Economics as follows:
  - "An inquiry into the nature and causes of the wealth of the nations" by Adam Smith.
  - "Science which deals with wealth" by J.B. Say.
- In the above definition wealth becomes the main focus of the study of Economics.
- This definition by Adam Smith , is the first important and comprehensive definition.
- Science of wealth definition has two dimensions
- Meaning of wealth and
- Causes of wealth

#### Features of wealth definition

#### Characteristics

- It takes wealth into account only material goods
- Exaggerated the emphasis on wealth
- It inquires the causes behind creation of wealth

#### Criticisms

- It considered economics as a dismal or selfish science
- It defined wealth in a very narrow and restricted sense
- It considered only material and tangible goods
- It gave emphasis only to wealth and reduced man to secondary place

#### 2. Science of material well-being

- Under this group of definitions the emphasis is on welfare as compared with wealth in the earlier group.
- Two important definitions are as follows:
  - "Economics is a study of mankind in the ordinary business of life. It examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of well-being. Thus, it is on the one side a study of wealth and on the other and more important side a part of the study of the man", Alfred Marshall

- Second Definition: "The range of our inquiry becomes restricted to that part of social welfare that can be brought directly or indirectly into relation with the measuring rod of money "Pigou.
- In the first definition Economics has been indicated to be a study of mankind in the ordinary business of life. By ordinary business we mean those activities which occupy considerable part of human effort.
- The fulfillment of economic needs is a very important business which every man ordinarily does.
- Professor Marshall has clearly pointed that Economics is the study of wealth but more important is the study of man. Thus, man gets precedence over wealth.
- The second definition by Pigou emphasizes social welfare but only that part of it which can be related with the measuring rod of money.
- Money is general measure of purchasing power by the use of which the science of Economics can be rendered more precise.

#### Features of welfare definition

#### Characteristics

- It is primarily the study of mankind
- It is one side the study of wealth and other side the study of man
- It takes account ordinary business of life it is not concerned with social, religious and political aspects of man's life
- It emphasizes on material welfare ie human welfare which is related to wealth
- It limits the scope of activities, to measurement in terms of money Criticisms
- It considers economics as a social science rather than a human science
- It restricts the scope of economics to the study of persons living in organized communities only
- Welfare in itself has a wide meaning which is not made clear in definition
- Their definitions are criticized on the following grounds.

(i) Economics is concerned with not only material things but also with immaterial things like services of singers, teachers, actors etc. Marshall and Pigou chose to ignore them. (ii) Robbins criticized the welfare definition on the ground that it is very difficult to state Which things would lead to welfare and which will not. He is of the view that we would study in Economics all those goods and services which carry a price whether they promote welfare or not.

- 3. Science of choice making
  - Robbins gave a more scientific definition of Economics. (scarcity definition)
  - "Economics is the science which studies human behavior as a relationship between ends and scarce means which have alternative uses".
- Economics is a science: Economics studies economic human behavior scientifically. It studies how humans try to optimize (maximize or minimize) certain objective undergiven constraints.

For example, it studies how consumers, with given income and prices of the commodities, try to maximize their satisfaction.

- Unlimited ends: Ends refer to wants. Human wants are unlimited. When one want is satisfied, other wants crop up. If man's wants were limited, then there would be no economic problem.
- (iii) Scarce means: Means refer to resources. Since resources (natural productive resources, man-made capital goods, consumer goods, money and time etc.) are limited economic problem arises.

If the resources were unlimited, people would be able to satisfy all their wants and there would be no problem.

(iv) Alternative uses: Not only resources are scarce, they have alternative uses.

For example, coal can be used as a fuel for the production of industrial goods, it can be used for running trains, it can also be used for domestic cooking purposes and for so many purposes.

- ✓ Robbins has made Economics a scientific study and his definition has become popular among some economists.
- But his definition has also been criticized on several grounds. Important ones are:
   (i) Robbins has made Economics quite impersonal and colorless. By making it a

complete positive science and excluding normative aspects he has narrowed down its scope.

(ii) Robbins' definition is totally silent about certain macro-economic aspects such as determination of national income and employment.

- 4. Science of dynamic growth and development
  - Professor Paul A Samuelson supported the views expressed by Robbins. There are many common points in the definition of Robbins and Samuelson.
  - He emphasized that the central issue to be dealt in economics is the problem of making choice.
  - Every individual has to allocate his scarce resources among alternative uses such that his economic wellbeing gets maximized.
- A modern and modified definition is as follows:
  - "Economics is the study of how men and society choose, with or without the use of money, to employ scarce productive resources which could have alternative uses, to produce various commodities over time and distribute them for consumption now and in the future amongst various people and groups of society".
  - Paul A. Samuelson "The above definition is very comprehensive because it does not restrict to material well-being or money measure as a limiting factor. But it considers economic growth over time.

#### NATURE OF ECONOMICS

(a) Economics is a science: A subject is considered science if

- ✓ It is a systematized body of knowledge which studies the relationship between cause and effect.
- ✓ It is capable of measurement.
- $\checkmark$  It has its own methodological apparatus. It should have the ability to forecast.
- ✓ If we analyze Economics, we find that it has all the features of science. Like science it studies cause and effect relationship between economic phenomena.
- $\checkmark$  But it is to be noted that Economics is not a perfect science.
- ✓ This is because Economists do not have uniform opinion about a particular event.
- ✓ The subject matter of Economics is the economic behavior of man which is highly unpredictable.

#### (b) Economics is an art:

- ✓ Art is nothing but practice of knowledge.
- $\checkmark$  Whereas science teaches us to know art teaches us to do.
- ✓ Unlike science which is theoretical, art is practical. If we analyze Economics, we find that it has the features of an art also. Its various branches, consumption, production, public finance, etc. provide practicality solutions to various economic problems.
- $\checkmark$  It helps in solving various economic problems which we face in our day-to-day life.
- $\checkmark$  Thus, Economics is both a science and an art.
- $\checkmark$  It is science in its methodology and art in its application.
- ✓ Study of unemployment problem is science but framing suitable policies for reducing the extent of unemployment is an art.

#### **ECONOMICS : POSITIVE OR NORMATIVE SCIENCE**

- As Asimakopulos puts it "Positive economics can be defined as a body of systematized knowledge concerning what is ,while normative economics tries to develop criteria for what ought to be"
- Positive economics is mainly concerned with the description of economic events and it tries to formulate theories to explain them.
- Normative economics gives more importance to ethical judgements. It is concerned with the ideal rather than the actual situations.
- Statements on economics may be classified into positive statements and normative statements.
- If there is disagreement over a statement, we can find out whether it is true or false by verifying the facts.
- But when there is disagreement over a normative statement, we cannot settle the issue simply by appealing to the facts.
- The questions like, in positive economics. Eg
  - What are the policies that the government follow to reduce unemployment?
  - What should you do to reduce inflation are questions?
  - "Do higher minimum wages cause higher rates of youth unemployment?"

- If we ask the questions like, Normative question Eg
  - Should the government be concerned about unemployment than inflation? "Then it is normative"
  - "Are higher minimum wages better for young workers?"

#### MICRO-ECONOMIC ANALYSIS

- The subject matter of economics consists of two parts, namely Micro economics and Macro economics.
- ✓ Ragnar Frisch. Who is among the first Nobel laureates in Economics coined these term. Which are now universally used
- ✓ "Micro" is derived from the Greek word "Mikros" meaning small and
- ✓ "Macro" from "Makros" meaning large.
- ✓ In Micro-Economics we study the economic behavior of an individual, firm or industry in the national economy.
- $\checkmark$  It is thus a study of a particular unit rather than all the units combined.
- ✓ We mainly study the following in Micro-Economics:
  - (i) Product pricing;
  - (ii) Consumer behavior
  - iii) Factor pricing;
  - iv) Economic conditions of a section of the people;
  - (v) Study of firms; and
  - (vi) Location of a industry

#### MACRO ECONOMIC ANALYSIS

- ✓ Macroeconomics is the study of aggregates; hence called Aggregative Economics.
- ✓ It is the analysis of the entire economic system, the overall conditions of an economy like total investment and total production.
- ✓ In Macro-Economics, we study the economic behavior of the large aggregates such as the overall conditions of the economy such as total production, total consumption, total saving and total investment in it.

- $\checkmark$  It is the study of overall economic phenomena as a whole rather than its individual parts.
- $\checkmark$  It includes:
  - (i) National income and output;
  - (ii) General price level;
  - (iii) Balance of trade and payments;
  - (iv) External value of money;
  - (v) Saving and investment; and
  - (vi) Employment and economic growth.

#### **Limitations of Economics**

- ✓ Economics cannot predict the future events since its laws lack definiteness.
- ✓ It is difficult to check the schemes of social betterment or sovereign remedy to economic ills
- $\checkmark$  It cannot give an idea of functioning of economy as a whole
  - ✓ An individual industry may be flourishing but economy as a whole may be languishing.
- ✓ Individual is ignored
  - $\checkmark$  It is individual welfare which is the main aim of Economics.

## RELEVANCE OF ECONNOMICS IN BUSINESS MANAGEMENT BUSINESS ECONOMICS

- ✓ The terms Managerial Economics and Business Economics are used interchangeably.
- $\checkmark$  The term Managerial Economics is more in use nowadays.
- ✓ Managerial Economics is economics applied in business decision-making.
- $\checkmark$  Hence it is also called Applied Economics.

#### **Definition of Business Economics**

- ✓ In simple words, business economics is the discipline which helps a business manager in decision making for achieving the desired results.
- ✓ In other words, it deals with the application of economic theory to business management.

- ✓ According to Spencer and Siegelman, Business economics is "the integration of economic theory with business practice for the purpose of facilitating decision-making and forward planning by management".
- ✓ From the above said definitions, we can safely say that business economics makes in depth study of the following objectives:

(i) Explanation of nature and form of economic analysis

(ii) Identification of the business areas where economic analysis can be applied

(iii) Spell out the relationship between Managerial Economics and other disciplines outline the methodology of managerial economics.

#### CHARACTERISTICSOF BUSINESS ECONOMICS

The following characteristics of business economics will indicate its nature:

1. Micro economics: Managerial economics is micro economic in character. This is so because it studies the problems of an individual business unit. It does not study the problems of the entire economy.

2. Normative science: Managerial economics is a normative science. It is concerned with what management should do under particular circumstances. It determines the goals of the enterprise. Then it develops the ways to achieve these goals.

3. Pragmatic: Managerial economics is pragmatic. It concentrates on making economic theory more application oriented. It tries to solve the managerial problems in their daytoday functioning.

4. Prescriptive: Managerial economics is prescriptive rather than descriptive. It prescribes solutions to various business problems.

5. Uses macro-economics: Marco economics is also useful to business economics. Macroeconomics provides an intelligent understanding of the environment in which the business operates. Managerial economics takes the help of macro-economics to understand the external conditions such as business cycle, national income, economic policies of Government etc. 6. Uses theory of firm: Managerial economics largely uses the body of economic concepts and principles towards solving the business problems. Managerial economics is a special branch of economics to bridge the gap between economic theory and managerial practice.

7. Management oriented: The main aim of managerial economics is to help the management in taking correct decisions and preparing plans and policies for future. Managerial economics analyses the problems and give solutions just as doctor tries to give relief to the patient.

8. Multi disciplinary: Managerial economics makes use of most modern tools of mathematics, statistics and operation research. In decision making and planning principles such accounting, finance, marketing, production and personnel etc.

9. Art and science: Managerial economics is both a science and an art. As a science, it establishes relationship between cause and effect by collecting, classifying and analyzing the facts on the basis of certain principles. It points out to the objectives and also shows the way to attain the said objectives.

#### Integrating of economic theory and principles in to the business

Business utilizes these theories in various decision making in business like:

- 1. Production Decisions
- 2. Financial Decisions
- 3. Human Resource Decisions
- 4. Distribution Decisions

#### **Objectives of Business Economics:**

- 1. Effective allocation of resources.
- 2. Integrating Economic Theories and Principles.
- 3. Profit or Wealth Maximization.

#### **Difference between Economics and Business Economics**

- ✓ Business Economics is limited in its scope, Economics has much wider scope.
- ✓ Business Economics integrates the economic theory, economics gives the particular theory..
- ✓ Business economics is micro in nature and Economics is macro in nature..
- ✓ Business Economics deals with theories like profit but Economics deals with theories like
- ✓ Profit, Wages, interest etc.,

#### UTILITY ANALYSIS

#### Meaning of Utility:

- The simple meaning of 'utility' is 'usefulness'. In economics utility is the capacity of a commodity to satisfy human wants.
- ✓ Utility is the quality in goods to satisfy human wants. Thus, it is said that "Wants satisfying capacity of goods or services is called Utility."

#### UTILITY

- ✓ Utility is defines as "the power of commodity or service to satisfy human want".
- Utility is a term in economics that refers to the total satisfaction received from consuming a good or service.
- ✓ The economic utility of a good or service is important to understand, because it directly influences the demand, and therefore price, of that good or service.
- ✓ Utility is thus the satisfaction which is derived by the consumer by consuming the goods.
- Eg: Cloth has a utility for us because we can wear it. Pen has a utility who can write with it.
   The utility is subjective in nature. It differs from person to person.

#### **Characteristics of utility:**

- 1. Utility has ni Ethical or Moral Significance
- 2. Utility is Psychological
- 3. Utility is always individual and Relative
- 4. Utility is not necessarily Equated with Usefulness
- 5. Utility cannot be measured objectively

- 6. Utility depends on intensity of want
- 7. Utility is different from pleasure
- 8. Utility is also distinct from satisfaction

#### .Kinds of Utility

- Utility are of three kinds:
  - Marginal Utility,
  - Total Utility,
  - Average Utility

#### (i) Marginal Utility:

#### • **Definition:**

- Marginal utility is the utility derived from the last or marginal unit of consumption. It refers to the additional utility derived from an extra unit of the given commodity purchased, acquired or consumed by the consumer.
- It is the net addition to total utility made by the utility of the additional or extra units of the commodity in its total stock. It has been said—as the last unit in the given total stock of a commodity.
- According to Prof. Boulding—"The marginal utility of any quantity of a commodity is the increase in total utility which results from a unit increase in its consumption."

#### For example:

• Suppose Mr. Shanker is consuming bread and he takes five breads. By taking first unit he derives utility up to 20; second unit 16; third unit 12; fourth unit 8 and from fifth 2. In this example the marginal unit is fifth bread and the marginal utility derived is 2. If we will consume only four bread then the marginal unit will be fourth bread and utility will be 8.

#### (ii) Total Utility:

• Total Utility is the utility from all units of consumption. According to Mayers— "Total Utility is the sum of the marginal utilities associated with the consumption of the successive units."

#### For example:

• Suppose, a man consumes five breads at a time. He derives from first bread 20 units of satisfaction from 16, from third 12, from fourth 8 and from fifth 4 i.e., total 60 units.

#### (iii) Average

#### **Utility:**

Average Utility is that utility in which the total unit of consumption of goods is divided by number of Total Units. The Quotient is known as Average Utility. For example—If the Total Utility of 4 bread is 40, then the average utility of 3 bread will be 12 if the Total Utility of 3 bread is 36 i.e.,  $(36 \div 3 = 12)$ .

#### The following table will explain the point clearly:

Unit of Bread	<b>Marginal Utility</b>	<b>Total Utility</b>	Average Utility
1	16	16	16
2	12	(16 + 12) = 28	(28 + 2) = 14
3	8	(28 + 8) = 36	(36 + 3) = 12
4	4	(36 + 4) = 40	(40 + 4) = 10
5	0	(40 + 0) = 40	(40 + 5) = 8
6	- 4	(40 - 4) = 36	(36 + 6) = 6
7	- 8	(36 - 8) = 28	(28 + 7) = 4

**Average Utility Table** 

Table 1

It is clear from the above table that by the increasing use of any article Marginal and Average Utility reduces gradually and Total Utility increases only up to that point where the Marginal Utility comes to zero.

#### What Is Marginal Utility?

Marginal utility is the added satisfaction that a consumer gets from having one more unit of a good or service. The concept of marginal utility is used by economists to determine how much of an item consumer are willing to purchase. Positive marginal utility occurs when the consumption of an additional item increases the total utility. On the other hand, negative marginal utility occurs when the consumption of one more unit decreases the overall utility.

#### **KEY TAKEAWAYS:**

- Marginal utility is the added satisfaction a consumer gets from having one more unit of a good or service.
- The concept of marginal utility is used by economists to determine how much of an item consumers are willing to purchase.
- The law of diminishing marginal utility is often used to justify progressive taxes.
- Marginal utility can be positive, zero, or negative.

#### **Types of Marginal Utility**

• There are multiple kinds of marginal utility. Three of the most common ones are as follows:

#### **Positive Marginal Utility:**

• Positive marginal utility occurs when having more of an item brings additional happiness. Suppose you like eating a slice of cake, but a second slice would bring you some extra joy. Then, your marginal utility from consuming cake is positive.

#### Zero Marginal Utility:

 Zero marginal utility is what happens when consuming more of an item brings no extra measure of satisfaction. For example, you might feel fairly full after two slices of cake and wouldn't really feel any better after having a third slice. In this case, your marginal utility from eating cake is zero.

#### **Negative Marginal Utility:**

• Negative marginal utility is where you have too much of an item, so consuming more is actually harmful. For instance, a fourth slice of cake might even make you sick after eating three pieces of cake.

#### Law of diminishing marginal utility

Dr. Marshall states the law thus:

- ✓ "The additional benefit which a person derives from a given increase of his stock of anything diminishes with the growth of the stock that he has."
- ✓ In this statement of the law, the word "Additionally" is very important. It is only additional (marginal) benefit which decrease and not the total benefit.
- ✓ If a consumer takes more and more units of a commodity ,the additional utility he derives from an extra unit of the commodity goes on falling.
- $\checkmark$  The law of diminishing utility is based on actual experience.
- $\checkmark$  It tells that the more and more of a thing you have, the less and less you want it.
- ✓ It explains the relationship between the price of a good and the satisfaction you get from it.
- During summer, generally, there will be fall in the price of mangoes because they are available in plenty. So there is diminishing utility.
- ✓ The law of diminishing marginal returns has universal application in agriculture, it means that we cannot double the output by doubling labor and capital.
- $\checkmark$  The law applies to manufacturing industry also.

#### LAW OF EQUI-MARGINAL UTILITY

- ✓ The idea of equi-marginal principle was first mentioned by H.H.Gossen (1810- 1858) of Germany. Hence it is called Gossen's second Law.
- ✓ Alfred Marshall made significant refinements of this law in his 'Principles of Economics'.
- ✓ The law of equi-marginal utility explains the behaviour of a consumer when he consumes more than one commodity.
- ✓ Wants are unlimited but the income which is available to the consumers to satisfy all his wants is limited.
- ✓ This law explains how the consumer spends his limited income on various commodities to get maximum satisfaction.
- ✓ The law of equi-marginal utility is also known as the law of substitution or the law of maximum satisfaction or the principle of proportionality between prices and marginal

utility.

#### Definition

✓ In the words of Prof. Marshall, "If a person has a thing which can be put to several uses, he will distribute it among these uses in such a way that it has the same marginal utility in all".

#### Assumptions

- 1. The consumer is rational so he wants to get maximum satisfaction.
- 2. The utility of each commodity is measurable.
- 3. The marginal utility of money remains constant.
- 4. The income of the consumer is given.
- 5. The prices of the commodities are given.
- 6. The law is based on the law of diminishing marginal utility.

#### Limitations of the Law

- 1. Indivisibility of Goods
  - ✓ The theory is weakened by the fact that many commodities like a car, a house etc. are indivisible.
  - $\checkmark$  In the case of indivisible goods, the law is not applicable.
- 2. The Marginal Utility of Money is Not Constant
  - $\checkmark$  The theory is based on the assumption that the marginal utility of money is constant
  - $\checkmark$  But that is not really so.
- 3. The Measurement of Utility is not Possible
  - ✓ Marshall states that the price a consumer is willing to pay for a commodity is equal to its marginal utility. But modern economists argue that, if two persons are paying an equal price for given commodity, it does not mean that both are getting the same level of utility.
  - $\checkmark$  Thus utility is a subjective concept, which cannot be measured, in quantitative terms.
- 4. Utilities are Interdependent
  - $\checkmark$  This law assumes that commodities are independent and therefore their marginal

utilities are also independent. But in real life commodities are either substitutes or complements. Their utilities are therefore interdependent.

#### **IMPORTANCE OF THE LAW**

- 1. It applies to consumption.
- 2. It applies to production
- 3. Distribution of earnings between savings and consumption
- 4. It applies to distribution
- 5. It applies to public finance
- 6. Expenditure of time



#### SCHOOL OF MANAGEMENT STUDIES

**UNIT – II - BUSINESS ECONOMICS - SBAA1103** 

#### **UNIT 2: DEMAND AND SUPPLY FUNCTIONS**

Meaning Of Demand - Demand Theory And Objective - Demand Analysis - Demand Schedule - Demand Curve - Law Of Demand - Elasticity Of Demand - Types And Measurement -Indifference Curve Analysis - Laws Of Supply - Elasticity Of Supply - Consumer Equilibrium -Consumer Surplus

#### MEANING

- Demand for a commodity refers to the desire backed by ability to pay and willingness to buy it.
- The demand for any commodity mainly depends on the price of that commodity.
- The other determinants include
- price of related commodities,
- the income of consumers,
- tastes and preferences of consumers,
- and the wealth of consumers.

#### What Is Demand Theory?

- Demand theory is an economic principle relating to the relationship between consumer demand for goods and services and their prices in the market.
- Demand theory forms the basis for the demand curve, which relates consumer desire to the amount of goods available.
- As more of a good or service is available, demand drops and so does the equilibrium price.
- Demand theory highlights the role that demand plays in price formation, while supplyside theory favors the role of supply in the market.

#### **Understanding Demand Theory**

- Demand is simply the quantity of a good or service that consumers are willing and able to buy at a given price in a given time period.
- People demand goods and services in an economy to satisfy their wants, such as food, healthcare, clothing, entertainment, shelter, etc.
- The demand for a product at a certain price reflects the satisfaction that an individual expects from consuming the product.
- This level of satisfaction is referred to as utility and it differs from consumer to consumer.
- The demand for a good or service depends on two factors:

(1) its utility to satisfy a want or need, and

(2) the consumer's ability to pay for the good or service. In effect, real demand is when the readiness to satisfy a want is backed up by the individual's ability and willingness to pay.

#### Assumptions of the Law

- The main assumptions are habits, taste and fashion remain constant.
- Money income of the consumer do not change.
- Price of other goods remain constant.
- A commodity has no substitutes.
- The commodity is a normal good and has no prestige or status value.
- People do not expect further change in prices.
- There exists perfect competition in the market.

These assumptions will hold good only in the short period. Therefore law of demand is true only in the short period.

#### **Demand Schedule and Demand curve**

#### DEMAND SCHELDULE

✓ The table below is a hypothetical demand schedule of an individual consumer. It shows a list of prices and corresponding quantities demanded by an individual consumer. This is an individual demand schedule.

Price of Parker pens in Rs	Quantity Demand in Units	
15.00	10	
10.00	11	
9.00	13	
8.00	16	
7.00	22	
6.00	28	
5.00	35	

Table 1

- It can be vividly seen from the table as price is falling, our consumer is buying more and more units of the pen, e.g., when the price is at Rs 15, he is willing to buy only ten and when its price is at Rs 5.00, his demand is 35 units.
- On the contrary as the price rises from Rs 5.00 to Rs 6.00 to Rs 15.00 his demand is contracting.
- The table reveals a negative relation between the price and quantities demanded.

#### **Demand Curve**

- The demand curve is a graphical representation of the relationship between the price of a good or service and the quantity demanded for a given period of time.
- In a typical representation, the price will appear on the left vertical axis, the quantity demanded on the horizontal axis
- The demand curve slopes downwards from left to right showing that, when price rises, less is demanded and vice versa.
- Thus the demand curve represents the inverse relationship between the price and quantity



demanded, other things remaining constant.

Fig 1

It can be noted that the demand curve of individual consumer is sloping down indicating inverse relationship between price charged and quantity demanded for the pens

Why does the demand curve slope downwards?

- The demand curve slopes downwards mainly due to the law of diminishing marginal utility.
- The law of diminishing marginal utility states that an additional unit of a commodity gives a lesser satisfaction.

- Therefore, the consumer will buy more only at a lower price.
- The demand curve slopes downwards because the marginal utility curve also slopes downwards.

#### Law of Demand

- The law of demand states that there is a negative or inverse relationship between the price and quantity demanded of a commodity over a period of time.
- Definition:
- Alfred Marshall stated that "the greater the amount sold, the smaller must be the price at which it is offered, in order that it may find purchasers; or in other words, the amount demanded increases with a fall in price and diminishes with rise in price".
- According to Ferguson, the law of demand is that the quantity demanded varies inversely with price.
- If the income of the consumer, prices of related goods, taste and preferences of the consumer remain unchanged, the consumer's demand for the goods will move opposite to the movement in price of the goods.
- If the price of the good increases, the quantity demanded decreases.
- The negative relation i.e., higher price attracts lower demand and lower price encourages high quantity to be bought by the consumers.
- Mathematically, the inverse relation maybe stated as Q = F(x)
- Where Q is the quantity demanded for x good
  - F is the function, and
  - P is the price of x goods
- The two variables move in opposite direction when P falls, Q rises and vice versa.
- For example, when P falls from Rs 8 to 6, Q may rise from Rs 10 to 11 etc.

#### **Exceptions to the Law of Demand**

Giffen Goods:

- In the case of Giffen goods the income effect is greater than the negative substitution effect, the law of demand wouldn't load.
- For example Sir Robert Giffen discovered that the poor people will demand more of inferior goods if their prices rise and demand less if their prices fall.
- i.e Poor people spend the major part of their income on coarse grains (eg ragi ) and only a small part on rice.
- When the price of coarse grains rises, they will buy less rice.
- To fill the resulting gap, rise in price of coarse grains results in the increase in quantity of coarse grains purchased. This is called "GIFFEN PARADOX".

#### Commodities which are use prestige value:(VEBLEN EFFECT)

- Some expensive commodities like diamonds, air-conditioned cars, etc., are used as status symbols to display one's wealth.
- The more expensive these commodities become, more will be their value as a status symbol and hence, greater will be their demand

#### **Expectations of change in the price of commodity:**

• If a household expects the price of a commodity to increase, it may start purchasing greater quantity of the commodity even at the presently increased price.

#### **Elasticity of Demand**

Definition-

• Kenneth Boulding defines elasticity of demand as one that "Measures the responsiveness of demand to changes in price".

- Demand elasticity is defined as percentage change in a dependent variable y resulting from a percentage change in the value of independent variable x.
- The equation for calculating elasticity is

Elasticity = % change in y / % change in x

#### Types of Elasticity of demand

		Elasticity of Demand	
Price Elasticity	Income	Cross	Advertising
of Demand	Elasticity of Demand	Elasticity of Demand	Elasticity of Demand
1. Unit Elasticity	1. Negative	1. Infinite	
2. Elasticity more than zero	2. Zero	2. Zero	
3. Perfectly elastic	3. Greater than zero but less than one		
4. Elasticity less than unity	4. Unity		
5. Perfectly inelastic	5. Greater than unity		

#### Price elasticity of demand

- The degree of responsiveness of demand for a commodity to a change in its price is known as price elasticity of demand.
- Alfred Marshall introduced the concept of elasticity of demand into economic theory.
- According to him "The elasticity (or responsiveness) of demand in a market is great or small according to the amount demanded increases much or little for a given fall in price and diminishes much or little for a given rise in price".

• Price elasticity of demand represents rate of change in the demand as a consequence of rise or fall in the price of a commodity.

 $e_{d} = \frac{Proportion ate change in quantity demanded}{Proportion ate change in price} (or) \frac{\% Change in quantity demanded}{\% Change in price}$ 

$$e_{d} = \frac{Q_{2} - Q_{1}}{Q_{1}} \div \frac{(P_{2} - P_{1})}{P_{1}}$$

#### **Types of Price Elasticity**

#### 1. Unitary Elasticity

• This is also called demand with unity elasticity where a given proportionate change in price causes an equal proportionate change in quantity demanded

$$e_{d} = \frac{Percentage change in demand}{Percentage change in price} = \frac{3\%}{3\%} = 1 \text{ or unity}$$

• Change in demand is exactly equal to change in price, say 3 percent in both cases.

#### 2. Demand with more than unity

- This is also called as more than unity elasticity.
- Here the reduction in price leads to more than proportionate change in demand
- i.e., change in demand is more than change in price, say 2 percent and 1 percent.

$$e_d = \frac{Percentage change in demand}{Percentage change in price} = \frac{2\%}{1\%} = 2 \text{ or more than unity}$$

#### 3. Perfectly elastic demand

- Here no reduction in price is needed to cause an increase in demand.
- If this is the case, a firm can sell the quantity at prevailing price but not even slightly higher price.
- Change in demand is positive say 3 percent but change in price is 0.
- Ed=% change in demand / % change in price
- =3%/0%=infinity

#### 4. Elasticity less than unity

- This can also be stated as relatively inelastic demand.
- Because a decline in price leads to less than proportionate increase in demand.
- i.e., change in demand is less than change in price say demand changes by 2 percent for a 3 percent change in price.

$$e_d = \frac{Percentage change in demand}{Percentage change in price} = \frac{2\%}{3\%} = \frac{2}{3}$$
 or less than or inelastic

#### 5. Perfectly inelastic demand

- In this change in price howsoever large causes no change in quantity demanded.
- i.e., no change in demand whatever be the change in price.
- Suppose change in price is by 5 percent, change in demand is 0.

 $e_d = \frac{Percentage change in demand}{Percentage change in price} = \frac{0\%}{5\%} = 0$  or perfectly inelastic

Five kinds of elasticity of demand can also be represented diagrammatically as shown in

1	$e_d = I$ Unity Elastic	•	Percentage change in demand is equal to percentage in price
2	$e_d > I$ Elastic or more than unity elastic	-	Percentage change in demand is more than percentage change in price
3	$e_d = \infty$ , Perfectly Elastic	२ - ५२ तम्मूजी	Purchasers are prepared to buy all they can obtain at same price and none at all at even slightly higher price
	$e_d < 1$ Inelastic or less than unity elastic	-	Percentage change in demand is less than percentage change in price
	5. $e_d = 0$ , Perfectly Inelastic	-	Quantity demanded does not change with price at all

The quantity is measured on X-axis and along Y-axis, price of the commodity is measured.



### **Measurement of Price Elasticity**

- 1. Total Expenditure Method
- 2. Proportionate Method
- 3. Point Elasticity of Demand
- 4. Arc Elasticity of Demand
- 5. Revenue Method

### **Total Expenditure Method**

- By comparing the total expenditure of a purchaser both before and after the change in price, it can be known whether his demand for a good is elastic, unity or less elastic.
- Total outlay is price multiplied by the quantity of a good purchased: Total Outlay = Price x Quantity Demanded.

#### Proportionate or percentage method

- This refers to point elasticity.
- The percentage change in price is compared to the percent change in quantity demanded.

Alternatively = 
$$\frac{\text{Change in quantity demanded}}{\text{Amount demanded}} \div \frac{\text{Change in Price}}{\text{Price}}$$
  
 $e_p = \frac{\frac{\Delta Q}{Q}}{\frac{\Delta P}{P}}$   $e_p$  denotes price elasticity.

#### **Geometric Method**

• Geometric method was suggested by professor Marshall and is used to measure the elasticity at a point on demand curve.

- When there are infinitely small changes in price and demand, then the geometric method is used.
- This method is also known as graphic method or point method or arc method

## Point Elasticity of Demand

• Is a geometrical method for measuring elasticity at a point on the demand curve.



## Arc Elasticity of Demand

 When elasticity is measured between two points on the same demand curve, it is known as arc elasticity



## **Revenue Method**

- Elasticity of Demand can be measured with the help of average revenue and marginal revenue.
- Sales proceeds that a firm obtained by selling its products is called its revenue
- Total revenue dividend by number of units is Average revenue

• -

• When addition is made to the total revenue by sale of one more unit of the commodity is called Marginal revenue.

$$E_A = \frac{A}{A - M}$$

#### Factors Affecting Elasticity Of Demand

Generally, The Elasticity of necessities is low while that of comfort and luxuries is high. But Elasticity is not dependent on only this factor. There are many factors which affect elasticity. These are-

- <u>Nature of Commodity</u>- Commodity can be divided into three parts according to its purpose. These are
  - a) Necessities b) Comforts c) Luxuries

*Necessities* are those which are essential for the life of human beings. Without this, capabilities and efficiencies of persons are adversely affected like food and water.

*Comforts* are the goods without which work capability is somewhat decreased but not as much as that of necessities. Goods like clothing, stationary are comforts

Goods which do provide satisfaction but have nothing to do with efficiency, are known as *Luxuries*. Expensive cars, Perfumes are some examples of Luxuries.

- Money spent on commodity- Elasticity or a demand for a commodity also depends upon the part of the consumer's income which he is spending on that Particular good. If small part is spent then the income will be Inelastic.
- <u>Availability of Substitutes</u>- If the Given good can be easily substituted by any substitutory good then its elasticity will be high. Hence the demand for a commodity is highly sensitive to the price changes if substitute goods are available.
- 4. <u>Multiple uses of commodity</u>- If a commodity has multiple uses then this particular commodity surely has higher elasticity as compared to others which have single use like plastic has many uses like decoration, carry bags etc. therefore it has more elastic demand.
- Possibility of postponement of consumption- If the use of particular good is postponable then at the time of price rise, consumer postpones its demand or purchase and demand becomes relatively elastic.
- 6. <u>Price Level and extent of price change</u>- If the price of commodity is less then price rise does not affect much to the elasticity but if price of the commodity is already high then price rise shows a reduction in the demand of that commodity. This is psychological tendency of a consumer.
- <u>Time Element</u>- For short term elasticity is low but for long term it is high because in short term consumption adjustment is little hard than that of long term

#### INCOME ELASTICITY OF DEMAND

In other words

Income Elasticity of Demand measures by how much the quantity demanded changes with respect to the change in income.

#### Mathematical Expression

Mathematically, it is expressed as:

Income elasticity of demand= %change in quantity demanded %change in income

Symbolically, it is expressed as:

 $E_{\gamma} = \frac{\Delta q}{\Delta y} \times \frac{y}{q}$ 

Where,
E<sub>Y</sub> = Elasticity of demand
q = Original quantity demanded
Δq = Change in quantity demanded
y = Original consumer's income
Δy = Change in consumer's income

## Types of Income Elasticity of demand

- Positive income elasticity of demand (E<sub>Y</sub>>0)
  - Income elasticity greater then unity  $(E_Y > 1)$
  - Income elasticity equal to unity  $(E_{Y} = 1)$
  - Income elasticity less then unity  $(E_{\gamma} < 1)$
- 2. Negative income elasticity of demand  $(E_{Y}<0)$
- 3. Zero income elasticity of demand ( $E_y=0$ )

## Positive income elasticity of demand (E<sub>Y</sub>>0)

If the quantity demanded for a commodity increases with the rise in income of the consumer and vice versa, it is said to be positive income elasticity of demand.

## For example:

As the income of consumer increases, they consume more of superior (luxurious) goods.

# Income elasticity greater then unity $(E_{\gamma} > 1)$



Percentage change in quantity demanded for a commodity is greater than percentage change in income of the consumer, it is said to be income greater than unity

# Income elasticity less then unity $(E_{\gamma} < 1)$



Percentage change in quantity demanded for a commodity is less than percentage change in income of the consumer

## 2. Negative income elasticity of demand ( $E_{\gamma}$ <0)



Quantity demanded for a commodity decreases with the rise in income of the consumer and vice versa
# 3. Zero income elasticity of demand ( $E_{\gamma}=0$ )



Quantity demanded for a commodity remains constant with any rise or fall in income of the consumer

Cross elasticity of demand

- The demand for most products is influenced by prices of other products
- Professor Watson defines "Cross elasticity of demand is the rate of change in quantity associated with change in price of related goods

$$e_{e}^{=} \frac{\text{Proportion ate change in the quantity demanded of commodity X}}{\text{Proportion ate change in the price of commodity Y}}$$
Symbolically: 
$$e_{e}^{=} \frac{\Delta q_{x}}{q_{x}} \div \frac{\Delta p_{y}}{p_{y}}$$
where  $q_{x}$  stands for the original quantity demand of x for y  
 $p_{x}$  stands for the original price of good y  
 $\Delta q_{x}$  stands for change in quantity demanded of good x.  
 $\Delta p_{x}$  stands for a small change in the price y.

• The two commodities may be substitutes or complimentary to each other

- Examples for substitute goods are tea and coffee •
- Example for complimentary goods are peanut butter and jelly, computer hardware and • software

Advertising elasticity of demand

- The elasticity concept is simply a way of measuring the effect of a change in an • independent variable on the dependent variable in any functional relation
- Elasticity plays an important role in marketing activities. •
- For eg, a low advertising elasticity means that a firm will have to spend substantial sum to shift demand for its product for advertising.

$$e_a = \frac{Proportion ate change in sales}{Proportion ate change in advertisement expenditure}$$

 $\frac{\Delta s}{\Delta a}$ Where  $\Delta s$  refers to a change in sales

and  $\Delta a$  refers to a change in advertisement expenditure

Advertisement elasticity may vary between zero to infinity.

S. Nos. Elasticities		ties	Interpretation
4	1. da	$e_a = 0$	Sales do not change with advertisement expenditure.
	2.	$0 < e_a < 1$	Increase in sales is less than proportionate to increase in advertisement expenditure.
	3.	e <sub>a</sub> = 1	Increase in sales is proportionate to an increase in advertisement expenditure.
	4.	e <sub>a</sub> > 1	Sales increase more than proportionately with an increase in advertisement expenditure.

#### INDIFFERENCE CURVE ANALYSIS

- Indifference curve analysis is a new approach to consumer equilibrium
- Marshall's analysis assumes that utility is measurable (cardinal), the indifference curve approach considers satisfaction as ordinal (non-measurable).
- This technique was originally introduced by Edgeworth.
- This was further used by Pareto and perfected by Allen and Hicks.
- The indifference curve analysis is based on preference of the consumers.

#### Definition of Indifference curve

- An indifference curve may be defined as the curve showing the different combination of goods and services among which a consumer is indifferent.
- In other words he equally prefers these combinations which yield same total satisfaction.

#### Assumptions of Indifference curve analysis

- A typical customer is acting in a rational manner while making his purchases. He tries to get maximum satisfaction.
- Every consumer has his own preferences.
- Utility cannot be exactly measured. But in competitive way objective measurement of utility is possible.
- No single commodity alone is demanded. On the other hand, there is a need for the combination of goods.
- It is possible from a consumer to compare the total satisfaction derived form one particular combination of goods with the total satisfaction derived form another combination of goods.

Indifference curve schedule

Bananas	Oranges
18	1
14	2
11	3
9	4
8	5
	Bananas 18 14 11 9 8



An indifference Schedule may be defined as a schedule of various combinations of goods which would be equally satisfactory to an individual consumer

A typical indifference curve is shown in the following diagram.

OX axis represents orange, OY axis represents bananas.

This curve shows the various combinations of two commodities (bananas and oranges) which give the consumer equal satisfaction.



Fig 2



- In the diagram, indifference curve IC2 is lying to the right of the original indifference curve IC1.
- At the point K, on IC1 the consumer gets OM of oranges and OR of bananas. But at the point L on IC2 though he gets the same amount of bananas, the number of oranges increase from OM to ON. The level of satisfaction to the consumer is therefore bound to be greater at the point L than at the point K.
- Hence IC2 represents a higher level of satisfaction than IC1.

#### **Consumer equilibrium**

- The consumer is said to be in equilibrium when he enjoys maximum satisfaction.
- Every rational consumer will try to be on the highest possible indifference curve in order to obtain the highest level of satisfaction.
- But he is limited by the size of his income and prices of commodities in the market.
- The state of balance obtained by an end-user of products that refers to the number of goods and services they can buy given their existing level of income and the prevailing level of cost prices.
- Consumer equilibrium permits a customer to get the most satisfaction possible from their income.

#### Meaning Of Consumer's Equilibrium

• Equilibrium means a state of maximum satisfaction.

• Consumer's equilibrium is a situation when he spends his given income on the purchase of one or more commodities in such a way that he gets maximum satisfaction and has no urge to change this level of consumption, given the prices of commodities.

#### Condition Of Consumer Equilibrium In Case Of Single Commodity

- The consumer will be in the state of equilibrium when the following condition is fulfilled:
- The marginal utility of commodity 'X' in terms of rupees is equal to the price of commodity 'X' in rupees. [MUx (in Rs.) = Px (Rs.)]

#### (Or)

- Mux (in utils) = Px (in Rs.) or MU of Commodity 'X' (in utils) = Px in Rs)
- MUm (in utils) MU of Money (a rupee)(in utils) is kept constant

#### Hypothetical Schedule/ Numerical Example

• Let us take the example of Fruit Ice-cream. Price of an ice-cream Scoop is Rs.30 and MUm i.e. MU of money (Re 1) = 1 util.

Units Consumed	MU of Ice- cream Scoop (in utils) {a}	MU of Money (Re 1) (in utils) {b}	MU of Ice- Cream Scoop (in Rs.) = {a}/ {b}		Price of Ice- Cream Scoop (Rs.)
1	50	1	50	>	30
2	40	1	40	>	30
3	30	1	30	=	30
4	20	1	20	<	30
5	10	1	10	<	30

#### **Explanation and Conclusion**

- In the given example, the level of Consumer's Equilibrium is 3 units where,
- MU of Ice Cream in rupees = Price of Ice Cream in rupees i.e. Rs.30.
- Before this level, i.e. at 1st and 2nd level, MU > Price, i.e. benefit is more than cost. So, the consumer will increase consumption to attain equilibrium.
- After this level, i.e. at 4th and 5th level, MU < Price, i.e. benefit is less than cost. So, the consumer will cut or decrease consumption to be in the state of equilibrium.
- Only at the level of 3 units, the condition of consumer's equilibrium is fulfilled.
- A consumer will consume that much quantity at which MUx = Px to be in the state of equilibrium.

#### Assumptions

- The consumer is rational and has a perfect knowledge about the market.
- His money income is given and constant.
- The commodities are homogeneous and divisible.
- Prices are constant.
- There is a free market economy.
- The goods are freely available.

#### **Budget line**

- The budget line defined to mean a set of combination of the commodities that can be purchased if whole of income is spent on then and its slope is equal to the price ratio.
- Suppose a consumer having income Rs 100 to be spent on two goods namely apple and pineapple.
- The price of apple and pineapple per unit are Rs 20 and Rs 10 respectively. Then he can purchase five apples spending his whole income or ten pineapples.

## Y = income PX and PY = Price of X and Y Slope = Rate of prices of good X and good y



Fig 4

#### **Consumer Surplus**

- The concept of consumer surplus was first mentioned by Jagupuit, a French engineer Economist in 1844.
- Marshall developed a concept in his work "Principles of Economics", 1890.
- Consumer surplus is experienced in commodities which are highly useful but relatively cheap.
- For example, newspaper, salt, matchbox, postage stamp etc. For these commodities we are ready to pay more than what we actually pay if the alternative is to go without them.
- The extra satisfaction a consumer derives is called consumer surplus.
- For Example suppose a consumer wants to buy a shirt, he is willing to pay Rs 550 for it. But the actual price is only Rs 500. He enjoys a surplus of Rs 50. This is called consumer surplus.

• Marshall defines consumer surplus as "The excess of price which a person would be willing to pay rather than go without the thing, over that which he actually does pay, is the economic measure of this surplus of satisfaction. It may be called consumer surplus".

#### Measurement

- Consumer surplus = Potential price Actual price
- Potential price is the price which a consumer is willing to pay for a commodity and actual price is the price which consumer actually pays for that commodity.

#### Assumptions

- Utility of a commodity is measured in money terms.
- Marshall assumes that there is definite relationship between expected satisfaction (utility) and realized satisfaction (actual).
- Marshall utility of money is constant.
- Absence of differences in income, taste, fashion etc.
- Demand for commodity depends on its price alone. It excludes other determinants of demand.

#### Importance of consumer surplus

- It is useful for the Finance minister in formulation taxation policies.
- It enables comparison of standard of living of people of different regions or countries.
- It also helps in fixing a higher price by a monopolist in the market.

#### **SUPPLY** (Definition)

- Supply is defined as "how much of good will be offered for sale at a given time"
- Prof. Mc Connell defines supply in the following terms "Supply may defines as a schedule which shows the various amount of a product a producer willing to and able to produce and make available for sale in the market at each specific price in a set of possible prices during some given period"

#### Law of supply

- Supply is the function of price.
- The law of supply states: Other things remaining same, the price of a commodity has a direct influence on the quantity supplied.
- As the price of a commodity rises, its supply is expanded and as its price falls its supply is contracted.
- The quantity offered for sale directly varies with price.
- Higher the price, larger is supply and vice versa

#### **Supply schedule**

Supply schedule represents the relation between prices and the quantities that the producers are willing to manufacture and sell. The following is the supply schedule of firms A, B, and C.

Price	A Firm	<b>B</b> Firm	C Firm	A, B and C
₹2	zero	zero	zero	zero
₹4	300	100	50	450
₹6	400	200	150	750
₹8	500	400	300	1200
₹10	600	500	400	1500

It can be seen from the above schedule, if the price is  $\overline{\mathbf{x}}$  2, no firm is willing to produce and sell. As the price rises, the quantity offered for sale by the firms also increase.

#### **Supply Curve**



At OP price, quantity offered for sale is OM, prices rise from OP to OP, and the quantity offered for sale also increases to MM<sub>1</sub>. Supply curve slopes left to right upwards. If the price falls too much, supply may dry up altogether. The price below which the producer refuses to sell is called the *reserve price*. The causes for upward sloping supply curve are as follows:

- (a) An increase in price implies higher profits leading the producers to produce more and offer increasing quantities for sale.
- (b) This may cause incentive to new producers entering into the industry and setting up firms and produce more or the existing firms may install new plants and produce more. All these factors result in higher quantity of product for sale,

#### **Determinants of Supply**

- The supply schedule and the curve are prepared and drawn on certain assumptions
- The determinants of supply except the price factor have been kept constant.

#### 1. Number firms or sellers:

- Supply in a market depends on the number of firms or sellers producing and selling in the market.
- When the sellers are few, the supply will also be small, vice versa.

#### 2. State of technology:

- Any improvement in technology will reduce cost of production and consequently there will be an increase in supply.
- Obstacles to the existing technology will increase the cost of production and consequently the supply will get decreased.

#### 3. Cost of production:

- The cost of production is an important item affecting the supply and so this is assured to remain constant.
- If the cost of production gets reduced, the supply curve will shift down.

#### 4. Price of related goods:

- It is assumed that supply of a commodity depends purely on its price and not on the prices of other commodities related to it.
- If the prices of related products fall, the firm producing many goods may increase the supply of a particular product even though its price has not gone up.

#### 5. Price expectations:

• If the producer feels that future price will be higher, he will reduce the present supply of the product.

#### 6. Natural factors:

• Monsoon failure may result in reduction of power generation and it may eventually lead to curtailment of production.

#### 7. Changing in government policy:

- Any change in government policy will affect the supply.
- An increase in tax will reduce the supply. The granting of subsidy will increase the supply.

#### **Assumptions of Law of supply**

- The law will operate only when other factors are assumed to be constant.
- The determinants of demand do not change.
- It is also assumed that sufficient time is allowed to the producer to adjust supply.

#### Exceptions

- The law of supply does not hold good to rare articles like ancient paintings etc.
- It does not hold good incase of speculative goods.
- They sell less when the price is low and more shares will be offered to sell at higher price.
- The law of supply does not operate in the case of labour.
- When the wage level is becoming high, there is a possibility that less number of people from the same family will go for employment.

#### ELASTICITY OF SUPPLY

- The law of supply tells us that quantity supplied will respond to a change in price.
- The concept of elasticity of supply explains the rate of change in supply as result of change in price.
- It is measured by the formula,

Elasticity of supply = Proportionate change in quantity supplied Proportionate change in price  $e_p = \frac{\Delta q_s / q_s}{\Delta p / p}$  Where q represents the amount supplied, p represents price,  $\Delta$  - a change.

Elasticity of supply may be defined as "the degree of responsiveness of change in supply to change in price on the part of sellers"

#### Types of elasticity of supply

- There are five types of elasticity of supply.
  - 1. Perfectly elastic supply:
    - For a small change or no change in price there will be infinite amount of supply i.e., the coefficient of elasticity of supply is infinity.

- 2. Relatively elastic supply
  - Coefficient of elasticity is greater than  $1 (e_s > 1)$
  - Quantity supplied change by a larger percentage than price
- 3. Unitary elastic supply
  - The coefficient of elastic supply is equal to 1 ( $e_s = 1$ )
  - A change in price will cause a proportionate change in quantity supplied.
- 4. Relatively inelastic supply
  - The coefficient of supply is less than 1 ( $e_s < 1$ )
  - Quantity supplied changes by a smaller percentage than price
- 5. Perfectly inelastic supply
  - The coefficient of supply is equal to zero  $(e_s > 1)$
  - A change in price will not bring about a change in quantity supplied.



Fig 5



### SCHOOL OF MANAGEMENT STUDIES

**UNIT – III – BUSINESS ECONOMICS – SBAA1103** 

#### **UNIT 3: PRODUCTION**

Meaning - Analysis of Production Function - Laws of Production - Laws of Increasing Returns -Laws of Constants - Laws of Returns to Scale - Equi Product Curves - Producers Equilibrium

#### MEANING

- Production is a process of combining various material inputs and immaterial inputs in order to make something for consumption.
- It is the act of creating an output, a good or service which has value and contributes to the utility of individuals.
- An example of production is the creation of furniture.
- An example of production is harvesting corn to eat.
- An example of production is the amount of corn produced.

#### **PRODUCTION FUNCTION**

- In economics, a production function relates physical output of a production process to physical inputs or factors of production.
- It is a mathematical function that relates the maximum amount of output that can be obtained from a given number of inputs generally capital and labor.
- Production analysis basically is concerned with the analysis in which the resources such as land, labor, and capital are employed to produce a firm's final product.

#### **Cobb-Douglas Production Function**

- In economics, a production function is a way of calculating what comes out of production to what has gone into it.
- The formula attempts to calculate the maximum amount of output you can get from a certain number of inputs.
- The production function is expressed in the formula: Q = f(K, L, P, H), where the quantity produced is a function of the combined input amounts of each factor.
- Of course, not all businesses require the same factors of production or number of inputs.
- Another form of the production function reduces the inputs to just labor and physical capital.
- Physical capital (K), or tangible assets that are created for use in the production process. This includes such things as buildings, machines, computers, and other equipment.

- Labor (L), or input of skilled and unskilled activities of human workers.
- Land (P), which includes natural resources, raw materials, and energy sources, such as oil, gas, and coal.
- Entrepreneurship (H), which is the quality of the business intelligence that is applied to the production function.

#### LAWS OF INCREASING RETURNS

- The law of increasing returns is the opposite of the law of decreasing returns.
- Where the law of diminishing returns operates, every additional investment of capital and labor yields less than proportionate returns.
- The law can be expressed in terms of costs too:
- Increasing returns mean lower costs per unit just as diminishing returns mean higher costs.
- Thus, the law of increasing return signifies that cost per unit of the marginal or additional output falls with the expansion of an industry.
- As more and more units of the commodity are produced, the cost per unit goes on steadily falling.
- The law of increasing returns operates only up to the optimum point, i.e., the point of maximum return.
- As a business expands and moves towards the optimum, the return per unit goes on increasing, i.e., the cost of production is falling.
- If, however, the business is expanded beyond the optimum point, the profits will begin to decline, and the law of diminishing returns begins to operate.
- "As the proportion of one factor in a combination of factors is increased, up to a point, the marginal product of the factor will increase."
- The increasing returns will be only up to a point. Later, the return may diminish. Suppose a fountain pen manufacturer invests successive doses of Rs. 1,000 each in the production of pens and the results are as given in the schedule below:

1 Dose applied (Rs. 1,000 each)	2 Total output of pens	3 Cost of production per pen Rs. P.	4 Marginal output (pens)
1	200	5.00	_
2	500	4.00	300
3	1,000	3.00	500
4	1,600	2.50	600
5	2,500	2.00	900

I able I	Table	1
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- This table makes it clear that as the manufacturer goes on enlarging his business by investing successive amounts of Rs. 1,000 each, the total output goes on increasing (column 2), the cost of production per pen goes on falling (column 3), and the marginal or additional output of each extra dose of Rs. 1,000 goes on increasing (column 4).
- The diagram below shows the decreasing cost shown in column 3 above.
- Along OX are measured the total quantity of pens manufactured, and along OY the cost of production per pen.
- IR is the cost curve.
- It is clear that, as the scale of production increases, the cost per unit falls.



Fig 1

#### **Operation of Law of Increasing Returns in Industry:**

- The law of increasing returns generally applies to manufacturing industries.
- Here man is not hampered by nature.
- He goes ahead and benefits from all sorts of economies, both internal and external.
- We have already discussed the economies of large-scale production.
- They are all available to a big manufacturer.
- As he increases the scale, production becomes more and more economical.
- The cost of production falls, which means an increasing return.

#### **Operation of Law in big manufacturing industries**

• There are several reasons on account of which the law of increasing returns operates in manufactures:

i) There is a large scope for the introduction of machinery. What is more important is that it can be kept continuously at work.

(ii) There is ample scope for the use of specialized labor. The result is a large output, which means lowering of costs. This means increasing returns.

(ii) There is ample scope for the use of specialized labor. The result is a large output, which means lowering of costs. This means increasing returns.

iv) Unlike agriculture, interruptions in work from natural disturbances, like changes in weather and seasons, are on a minor scale. Hence there are no costly breakdowns.

v) The operations are carried on within a small area so that supervision is easy and effective. There is little waste of materials and spoiling of machinery.

#### Law of constants

- Law of Constant Returns to Scale When the scope for division of labour gets restricted,
- the rate of increase in the total output remains constant, the law of constant returns to scale is said to operate.
- This law states that the rate of increase/decrease in volume of output is same to that of rate of increase/decrease in inputs.
- If the proportional increase in all inputs is equal to the proportional increase in output (production), returns to scale are constant.
- For instance, if a simultaneous doubling of all inputs results in a doubling of production, then returns to scale are constant.

• 100% increase in the inputs may raise the production level to 100%.

# Schedule:

Productive doses	Total Return (meters of cloth)	Marginal Return (meters of cloth)
1	60	60
2	120	60
3	180	60
4	240	60
5	300	60

Table 2

In the table given above, the marginal return remains the same, i.e. 60 meters of cloth with the increased investment of inputs.

Diagram/Graph:



Fig 2

In figure 2 along OX are measured the productive resources and along OY is represented the marginal return. CR is the line representing the law of constant returns. It is parallel to the base axis.

#### LAWS OF RETURNS TO SCALE

In the long run all factors of production are variable. No factor is fixed. Accordingly, the scale of production can be changed by changing the quantity of all factors of production.

#### **Definition:**

"The term returns to scale refers to the changes in output as all factors change by the same proportion." Koutsoyiannis

"Returns to scale relates to the behaviour of total output as all inputs are varied and is a long run concept". Leibhafsky

#### Returns to scale are of the following three types:

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

#### **Explanation:**

In the long run, output can be increased by increasing all factors in the same proportion. Generally, laws of returns to scale refer to an increase in output due to increase in all factors in the same proportion. Such an increase is called returns to scale.

#### Suppose, initially production function is as follows:

P = f(L, K)

Now, if both the factors of production i.e., labour and capital are increased in same proportion i.e., x, product function will be rewritten as.

$$\mathbf{P}_1 = f(\mathbf{x} \mathbf{L}, \mathbf{x} \mathbf{K})$$

1. If P<sub>1</sub> increases in the same proportion as the increase in factors of production i.e.,  $\frac{P_1}{P} = x$ , it will be constant returns to scale.

2. If P<sub>1</sub> increases less than proportionate increase in the factors of production *i.e.*,  $\frac{P_1}{P} < x$ , it will be diminishing returns to scale.

3. If P<sub>1</sub> increases more than proportionate increase in the factors of production, *i.e.*,  $\frac{P_1}{P} > x$ , it will be increasing returns to scale. Returns to scale can be shown with the help of

Units of Labour	Units of capital	%age increase in Labour & Capital	Total Product	%age increase in TP	Returns to scale
1	3	12	10	-	
2	9	100%	30	200% ]	Increasing
3	9	50%	60	100%	and sectors of •
4	12	33%	80	33%	Constant
5	15	25%	100	25%	
6	18	20%	120	10%	Decreasing
7	21	16.6%	130	8.3% J	

#### Showing different stages of return to scale

#### Table 3

#### The above stated table explains the following three stages of returns to scale:

1. Increasing Returns to Scale:

Increasing returns to scale or diminishing cost refers to a situation when all factors of production are increased, output increases at a higher rate. It means if all inputs are doubled, output will also increase at the faster rate than double. Hence, it is said to be increasing returns to scale. This increase is due to many reasons like division external economies of scale. Increasing returns to scale can be illustrated with the help of a figure 3.



In figure 3, OX axis represents increase in labour and capital while OY axis shows increase in output. When labour and capital increases from Q to  $Q_1$ , output also increases from P to  $P_1$  which is higher than the factors of production i.e. labour and capital.

2. Diminishing Returns to Scale:

Diminishing returns or increasing costs refer to that production situation, where if all the factors of production are increased in a given proportion, output increases in a smaller proportion. It means, if inputs are doubled, output will be less than doubled. If 20 percent increase in labour and capital is followed by 10 percent increase in output, then it is an instance of diminishing returns to scale.

The main cause of the operation of diminishing returns to scale is that internal and external economies are less than internal and external diseconomies. It is clear from figure 3.





In this figure 4, diminishing returns to scale has been shown. On OX axis, labour and capital are given while on OY axis, output. When factors of production increase from Q to  $Q_1$  (more quantity) but as a result increase in output, i.e. P to  $P_1$  is less. We see that increase in factors of production is more and increase in production is comparatively less, thus diminishing returns to scale apply.

3. Constant Returns to Scale:

Constant returns to scale or constant cost refers to the production situation in which output increases exactly in the same proportion in which factors of production are increased. In simple terms, if factors of production are doubled output will also be doubled.

In this case internal and external economies are exactly equal to internal and external diseconomies. This situation arises when after reaching a certain level of production, economies of scale are balanced by diseconomies of scale. This is known as homogeneous production function. Cobb-Douglas linear homogenous production function is a good example of this kind. This is shown in diagram 10. In figure 10, we see that increase in factors of production i.e. labour and capital are equal to the proportion of output increase. Therefore, the result is constant returns to scale.





### EQUI PRODUCT CURVES

- The term Iso-quant or Iso-product is composed of two words, Iso = equal, quant = quantity or product = output.
- Thus it means equal quantity or equal product. Different factors are needed to produce a good.
- These factors may be substituted for one another.
- A given quantity of output may be produced with different combinations of factors.
- Iso-quant curves are also known as Equal-product or Iso-product or Production Indifference curves. Since it is an extension of Indifference curve analysis from the theory of consumption to the theory of production.
- Thus, an Iso-product or Iso-quant curve is that curve which shows the different combinations of two factors yielding the same total product.

#### **Definitions:**

"The Iso-product curves show the different combinations of two resources with which a firm can produce equal amount of product." Bilas

"Iso-product curve shows the different input combinations that will produce a given output." Samuelson

"An Iso-quant curve may be defined as a curve showing the possible combinations of two variable factors that can be used to produce the same total product." Peterson

"An Iso-quant is a curve showing all possible combinations of inputs physically capable of producing a given level of output." Ferguson

#### **Assumptions:**

#### The main assumptions of Iso-quant curves are as follows:

#### **1. Two Factors of Production:**

Only two factors are used to produce a commodity.

#### 2. Divisible Factor:

Factors of production can be divided into small parts.

#### 3. Constant Technique:

Technique of production is constant or is known beforehand.

#### 4. Possibility of Technical Substitution:

The substitution between the two factors is technically possible. That is, production function is of 'variable proportion' type rather than fixed proportion.

#### **5. Efficient Combinations:**

Under the given technique, factors of production can be used with maximum efficiency.

#### **Iso-Product Schedule:**

Let us suppose that there are two factor inputs—labour and capital. An Iso-product schedule shows the different combination of these two inputs that yield the same level of output as shown in table 4.

Combination	Units of labour	Units of capital	Output of cloth (metres)
А	1	15	200
в	2	11	200
C ····	3	8	200
D ·	4	6	200
E ·	5	5	200

#### Table 4

The table 4 shows that the five combinations of labour units and units of capital yield the same level of output, i.e., 200 metres of cloth. Thus, 200 metre cloth can be produced by combining.

- (a) 1 units of labour and 15 units of capital
- (b) 2 units of labour and 11 units of capital
- (c) 3 units of labour and 8 units of capital
- (d) 4 units of labour and 6 units of capital
- (e) 5 units of labour and 5 units of capital





#### **Iso-Product Curve:**

From the above schedule iso-product curve can be drawn with the help of a diagram. An. equal product curve represents all those combinations of two inputs which are capable of producing the same level of output. The Fig. 6 shows the various combinations of labour and capital which give the same amount of output. A, B, C, D and E.

#### **PRODUCERS EQUILLIBRIUM**

**Producer's Equilibrium**: A **producer** or firm is said to be in **equilibrium** when it produces that level of output which gives him maximum profit and he has no incentive to change its existing level of output. Profit: Profit refers to the excess of revenue over expenditure.

1. Profit refers to the excess of money receipts from the sale of goods and services (i.e, revenue) over the expenditure incurred on producing them (i.e., cost).

For example, if a firm sells goods for Rs. 5 crores after incurring an expenditure of Rs. 3 crores, then profit will be Rs. 2 crores.

2. A producer is said to be in equilibrium when he produces that level of output at which his profits are maximum. Producer's equilibrium is also known as profit maximisation situation.

3. There are two methods for determination of Producer's Equilibrium:

(a) Total Revenue and Total Cost Approach (TR – TC Approach)

(b) Marginal Revenue and Marginal Cost Approach (MR – MC Approach)

4. A firm produces and sells a certain amount of a good. The firm's profit, denoted by  $\pi$ , is defined to be the difference between its total revenue (TR) and its total cost of production (TC). In other words,  $\pi$ = TR – TC

producer-equilibrium-cbse-notes-class-12-micro-economics-1

5. Producer's equilibrium when price is constant with a rise in output under MR/MC approach is determined where,

(a) MR = MC (b) MC must be rising According to Table; both the conditions of equilibrium are satisfied at 4 units of output. MC is equal to MR and MC is rising. MC is more than MR when output is produced after 4 units of output. So, Producer's Equilibrium will be achieved at 4 units of output.

However, MR is equal to MC at 2 units of output also.

But, second condition is not fulfilled here.

Let us understand the determination of equilibrium o with the help of a diagram.

Producer's Equilibrium is determined at OQ level of «P output corresponding to point E as at this point, MC MR and MC curve cuts MR curve from below.

producer-equilibrium-cbse-notes-class-12-micro-economics-2

In Figure, output is shown on the horizontal axis and £ revenue and costs on the vertical axis. Producer's Q Units Sold

equilibrium will be determined at OQ level of output corresponding to point E because at this, the following two conditions are met:

(a) MC = MR; (b) MC curve cuts the MR curve from below.

When MR > MC, then producer will continue to produce as long as MR becomes equal to MC. It is so because firm will find it profitable to raise the output level.

When MR < MC, then producer will cut down the production as long as MR becomes equal to MC. It is so because firm will find it Unprofitable to produce an extra unit. So, it starts reducing the level of output till MR = MC.

6. Producer's equilibrium when price fall with a rise in output under MR/MC approach is determined where,

(a) MR = MC (b) MC must be rising When price falls with the rise in output, MR curve slope downwards. Let us understand this with the help of following table:

Units of Commodity	MR (₹)	MC (₹)
1	10	9
2	9	7
3	8	6
4	7	7
5	6	8
6	5	9

#### Table 5

According to Table, both the conditions of equilibrium are satisfied at 4 units of output. MC is equal to MR and MC is rising. MC is more than MR when output is produced after 4 units of output. So, Producer's Equilibrium will be achieved at 4 units of output. Let us understand the determination of equilibrium with the help of a diagram:



Producer's Equilibrium is determined at OQ level of output corresponding to point E as at this point, MC = MR and MC curve cuts MR curve from below.

In Figure, output is shown on the horizontal axis and revenue and costs on the vertical axis. Producer's equilibrium will be determined at OQ level of output g corresponding to point E because at this, the following two conditions are met: OQ Units Sold

(a) MC = M, and (b) MC curve cuts the MR curve from below.

When MR > MC, then producer will continue to produce as long as MR becomes equal to MC. It is so because firm will find it profitable to raise the output level.

When MR < MC, then producer will cut down the production as long as MR becomes equal to MC. It is so because firm will find it Unprofitable to produce an extra unit. So, it starts reducing the level of output till MR = MC.

So, the producer is at equilibrium at OQ units of output.



#### SCHOOL OF MANAGEMENT STUDIES

# **UNIT – IV - BUSINESS ECONOMICS - SBAA1103**

#### **UNIT 4: MARKET ANALYSIS**

Market Analysis – Nature of Market – Types of Markets and their characteristics – Pricing under different market structures – Perfect Competition – Monopoly – Oligopoly and Monopolistic competition – Price discrimination under monopoly competition.

#### **INTRODUCTION**

In ordinary language, the term market refers to a public place in which goods and services are bought and sold. In economics, it has a different meaning.

Different economists have tried to define market in different ways. Could not defines market as, "not any particular market place in which things are bought and sold, but the whole of any region in which buyers and sellers are in such free intercourse with each other that the prices of the same goods tend to equality easily and quickly".

To Ely, "Market means the general field within which the forcedetermining the price of particular product operates".

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

Stoner and Hague explain the term market as "any organisation whereby buyers and sellers of a good are kept in close touch with each other". There is no need for a market to be in a single building. The only essential for a market is that all buyers and sellers should be in constant touch with each other, either because they are in the same building or because they are able to talk to each other by telephone at a moment's notice.

#### **CLASSIFICATION OF MARKET**

Market may be classified into different types:

#### On the basis of area

Markets may be classified on the basis of area into local, national and international markets. If the buyers and sellers are located in a particular locality, it is called as a local market, e.g.fruits, vegetables etc. These goods are perishable; they cannot be stored for a long time; they cannot be taken distant places. When a commodity is demanded and supplied all over the country, national market is said to exist. When a commodity commands international markets or buyers and sellers over the world, it is called international market. Whether a market will be local, national or international in character will depend upon the following

factors: a) nature of commodity; b)taste and preference of the people; c) availability of storage; d)method of business; e)political stability at home and abroad; f) portability of the commodity.

#### On the basis of time

Time element has been used by Marshall for classifying the market. On the basis of time, market has been classified into very short period, short period, long period and very long period. Very short period market refers to the market in which commodities that are fixed in supply or perishable are transacted. Since supply is fixed, only the changes in demand influence in price. The short period markets are those where supply can be increased but only to a limited extent. Long period market refers to a market where adequate time is available for changing the supply by changing the fixed factors of production. The supply of commodities may be increased by installing a new plant & machinery and the output can be changed accordingly. Very long period or secular period is one in which changes take place in factors like population, supplier of capital and raw material etc.

#### On the basis of nature of transactions

Markets are classified on the basis of nature of transactions into two broad categories viz., Spot market and future market. When goods are physically transacted on the spot, the market is called as spot market. In case the transactions involve the agreements of future exchange of goods, such markets are known as future markets.

#### On the basis of volume of business

Based on the volume of business, markets are broadly classified into wholesale and retail markets. In the wholesale markets, goods are transacted in large quantities. Wholesale markets are in fact, a link between the producer and the retailer while the retailer is a link between the wholesaler and the consumer.

#### On the basis of status of sellers

During the process of marketing, a commodity passes through a chain of sellers and middlemen. Markets can be classified into primary, secondary and terminal markets. The primary market consists of manufacturers who produce and sell the product to the wholesalers. The wholesalers who are an international link between the manufacturers and retailers constitute secondary markets while the retailers who sell it to the ultimate consumer constitute the terminal market.

#### On the basis of regulation

On this basis market is classified into regulated and unregulated markets. For some goods and services, the government stipulates certain conditions and regulations for their transactions. Market of goods and services is called regulated market. On the other hand, goods and services whose transactions are left to the market forces belong to unregulated market. Regulations of market by the government become essential for those goods who supply or price can be manipulated against the interest of the general public.

#### On the basis of competition

Markets are classified on the basis of nature of competition into perfect competition and imperfect competition.

#### PERFECT COMPETITION

Perfect competition in economic theory has a meaning diametrically opposite to the everyday use of the term. In practice, businessmen use the word competition as synonymous to rivalry. In theory, perfect competition implies no rivalry among firms. Perfect competition, therefore, can be defined as a market structure characterised by a complete absence of rivalry among the individual firms.

#### **FEATURES**

#### 1. Large number of buyers and sellers

There must be a large number of firms in the industry. Each individual firm supplies only a small part of the total quantity offered in the market. As a result, no individual firm can influence the price. Similarly, the buyers are also numerous. Hence, no individual buyer has any influence on the market price. The price of the product is determined by the collective forces of industry demand and industry supply. The firm is only a 'price taker'. Each firm has to adjust its output or sale according to the prevailing market price.

#### 2. Homogeneity of product

In a perfectly competitive industry, the product of any one firm is identical to the products of all other firms. The technical characteristics of the product as well as the services associated with its sale and delivery are identical.

#### 3. Free entry exit

There is no barrier to entry or exit from the industry. Entry or exit may take time nut firms have freedom of movement in and out of the industry. If the industry earns abnormal profits, new firms will enter the industry and compete away the excess profits.

#### 4. Absence of government regulation

There is no government intervention in the form of tariffs, subsidies, relationship of production or demand. If these assumptions are fulfilled, it is called pure competition which requires the fulfilment of some more condition.

#### 5. Perfect knowledge

It is assumed that all sellers and buyers have complete knowledge of the conditions of the market. This knowledge refers not only to the prevailing conditions in the current period but in all future periods as well.

#### 6. Perfect mobility of factors of production

The factors of production are free to move from one firm to another throughout the economy. It is also assumed that workers can move between different jobs.Raw materials and other factors are not monopolised and labour is not unionised. In short , there is perfect competition in the factor market.

#### MONOPOLY COMPETITION

Monopoly is that market form in which a single producer controls the entire supply of a single commodity which has no close substitutes. There must be only one seller or producer .The commodity produced by the producer must have no close substitutes .Monopoly can exist only when there are strong barriers to entry. The barriers which prevent the entry may be economic, institutional, or artificial in nature.

#### Features

- **1.** There is a single producer or seller of the product.
- 2. There are no close substitutes for the product. If there is a substitute, then the monopoly power is lost.
- **3.** No freedom to enter as there exist strong barriers to entry.
- **4.** The monopolist may use his monopolist power in any manner to get maximum revenue. He may also adopt price discrimination.

#### PRICE – OUTPUT DETERMINATION UNDER MONOPOLY

The aim of the monopolist is to maximise profits. Therefore, he will produce that level of output and charge a price which gives him the maximum profits. He will be in equilibrium at that price and output at which his profits are maximum. In other words, it will
be in equilibrium position at that level of output at which marginal revenue equals marginal cost. The monopolist, to be in equilibrium should satisfy two conditions :

- 1. Marginal cost should be equal to marginal revenue and
- **2**. The marginal cost curve should cut marginal revenue curve from below.





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 OQ level of output marginal revenue is greater than marginal cost but beyond OQ the marginal revenue is less than marginal cost.Therefore , the monopolist will be in equilibrium where MC= MR. But it is not always possible for a monopolistic to earn super normal profits. If the demand and cost situations are not favourable , the monopolist may realise short run losses.

#### PRICE DISCRIMINATION OR DISCRIMINATING MONOPOLY

The graphical representation of price – output determination under conditions of discriminating monopoly can be shown with the help of a figure.



There are two markets A and B with different price elasticity. The price elasticity in market b is lower than that in market A.

The total marginal revenue arising from the two markets is arrived at by horizontal summation of the marginal revenue curves for the two sub-markets. Da is the demand curve and MRa is the marginal revenue curve in market A. similarly, MRb is the marginal revenue curve in market B corresponding to the demand curve D. AMR is the aggregate marginal revenue curve, which has been derived by adding MRa and MR5. MC is the marginal cost curve of the monopolist.

The discriminating monopolist will maximize his profits by producing that level of output at which MC intersects AMR. Thus he will be producing OM level of output. This total output will be distributed in such be equal to the marginal revenues in two markets are equal and at the marginal cost. Since marginal cost is ME, the total output OM has to be distributed in such a way that the marginal revenue in two markets should be equal to the marginal cost. Hence OM amount can be sold in market A and OM2 in market B. further, OM amount can be sold in market A at M1 P1 price and OM2 can be sold in market B at M2 P2 price. Price is higher in market A where the demand is less elastic than in market B where the demand is more elastic. Thus a profit maximizing monopolist charges different prices and supplies different qualities in the sub- markets having different price elasticities.

#### **MONOPOLISTIC COMPETITION:**

Perfect competition and monopoly are rarely found in the real world.

Therefore. Professor Edward. H. Chamberlin of Harvard University brought about a synthesis of of monopolistic competition" in the two theories and put forth, "theory of monopolistic competition" in 1933. Monopolistic competition is more realistic than either pure competition or monopoly. It is blending of competition and monopoly. "There is competition which is keen though not perfect, between many firms making very similar products". Thus monopolistic competition refers to competition among a large number of sellers producing close but not perfect substitutes.

#### **FEATURES**

#### **1. LARGE NUMBER OF SELLERS**

In monopolistic competition the number of sellers is large. No one controls a major portion of the total output. Hence each firm has very limited control over the price of the reactions of rival firms. Thus there is no interdependence between firms and each seller pursues an independent course of action.

#### **2. PRODUCTS DIFFERENTIATION**

One of the most important features of monopolistic competition is product differentiation. Product differentiation implies that products are different in some ways form each other. They are heterogeneous rather than homogeneous. There is slight difference between one product and others in the same category. Products are close substitutes but not perfect substitutes. Product differentiation may be due to differences in the quality of the product. Product may be differentiated on the basis of materials used, workmanship, durability, size, shape, design, color, fragrance, packing etc...

#### **3.** FREE ENTRY EXIT OF FIRMS

Another feature of monopolistic competition is the freedom of entry and exit of firms. Firms under monopolistic competition are small in size and they are capable of producing close substitutes. Hence they are free to enter or leave the industry in the long run. Product differentiation increases entry of new firms in the group because each firm produces a different product from the others.

#### 4. SELLING COST

It is an important feature of monopolistic competition. As there is keen competition among the firms, they advertises their products in order to attract the customers and sell more. Thus selling cost has a bearing on price determination under monopolistic competition.

#### **5.** GROUP EQUILIBRIUM

Chamberlin introduced the concept of group in the place of industry. Industry refers to a number of firms producing homogeneous products. But, firms under monopolistic competition produce similar but not identical products. Therefore, Chamberlin uses, the concept of group to include firms producing goods which are close substitutes.

## 6. NATURE OF DEMAND CURVE

Under monopolistic competition a single firm can control only a small portion of the total output. Though there is product differentiation, as products are close substitutes, a reduction in price leads to increase in sales and vice-versa. But it will have little effect on the price-output conditions of other firms. Hence each will loose only few customers, due to an increase in price. Similarly a reduction in price will increase sales.

C

# PRICE OUTPUT DETERMINATION UNDER MONOPOLISTIC COMPETITION

Since, under monopolistic competition, different firms produce different varities of products,, prices will be determined on the basic of demand and cost conditions. The firms aim profit maximization by making adjustments in price and output, product adjustment and adjustment of selling costs.

DD is the demand curve of the firm. It is also the average revenue curve of the firm. MC is the marginal cost of the firm. The firm will maximize profits by equating marginal cost with marginal revenue. The firm maximizes its profits by producing OM level of output and selling it at.

A price of OP. the profit earned by the firms is PQRS. Thus in the short run, affirm under monopolistic competition earns supernormal profits.

In the short run, the firm may incur losses also.



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(b) Short Kun by ilibium with Lues

Fig 3

The firm is in equilibrium by producing an output of OQ. It fixes the price at OP. As price is less than costs, it incurs losses equal to pabc.

Thus a firm in equilibrium under monopolistic competition may be making supernormal profits or losses depending upon the position of the demand curve an average cost curve.

#### LONG PERIOD

Figure (A) represents short run equilibrium and figures (B) the long run equilibrium. In the short run, the price is OP and average cost is only MR. Hence there is supernormal profit equal to PQRS. But in the long run, the excess profit is completed away. MC=MR at OM level of output. LAR is target to LAC. Price is equal to average cost and there is no extra profit. Only normal profits are earned.

#### DIAGRAM



Fig 4

#### **DUOPOLY AND OLIGOPOLY**

When there are two monopolist its who share the monopoly power then it is called duopoly. It may be of two-typeduopoly without product differentiation and duopoly with product differentiation.

Under duopoly without product differentiation, there are two monopolists selling an identical commodity. There is no product differentiation. There is also a possibility

for collusion they may agree on price or divide the market for goods. Suppose if there is no agreement between the two, a constant price war will emerge. In this case they will earn only normal profits. If there costs are different, the one with lower costs will squeeze out the other and a simple monopoly would result. The best course for the duopolists will be to fix the monopoly price and share the market and profits in the short run, duopoly price may be lower than the competitive price in the long run, the price may be somewhere between the monopoly price and the competitive price when there is product differentiation, each producer will have his own customers there is no danger of price war there is no agreement since products are differentiated the firm with better product will earn supernormal profits

#### OLIGOPOLY

Oligopoly is a situation in which few large firms complete against each other and there is an element of interdependence in the decision making of these firms. apolicy change on the part of one firm will have immediate effects on competitors, who react with their counter policies.

#### FEATURES

Following are the features of oligopoly which distinguish it from other market structure

#### **1.** Small number of large sellers

The number of sellers dealing in a homogeneous differentiated product is small the policy of one seller will have a noticeable impact on market, mainly on price and output

#### 2. Interdependence

Unlike perfect competition and monopoly, the oligopolist is not independent to take decisions the oligopolist has to take into account the actions and reactions' of his rivals while deciding his price and output policies. As the product of the oligopolist are close substitutes, the cross elasticity of demand is very high.

#### **3.** Price rigidity

Any change in price by one oligopolist invites retaliation and counteraction from others, the oligopolist normally sticks to one price. If an oligopolist reduces his price his rivals will also do so and therefore, it is not advantage for the oligopolist to reduce the price.

On the other hand, if an oligopolist tries to raise the price, othersone do so as a result they capture the customers of this firm. Hence the oligopolist would never try to either reduce or raise the price. This results in price rigidity.

### 4. Monopoly element

As products are differentiated the firms enjoy some monopoly power. Further, when firms collude with each other, they can work together to raise the price and earn some monopoly income

### 5. Advertising

The only way open to the oligopolists to raise his sales is either by advertising or improving the quality of the product. Advertisement expenditure is used as an effective tool to shift the demand in favour of the product. Quality improvement will also shift the demand favorably. Usually, both advertisements as well as variations in designs and quality are used simultaneously to maintain and increase the market share of an oligopolist.

#### 6. Group behavior

The firms under oligopoly recognize their interdependence and realize the importance of mutual cooperation. Therefore, there is a tendency among them for collusion. Collusion as well as competition prevails in the oligopolistic market leading to uncertainty and indeterminateness.

#### 7. Indeterminate demand curve

It is not possible for an oligopolist of forecast the nature and position of the demand curve with certainty. The firm cannot estimate the sales when it decides reduce the price. Hence the demand curve oligopoly is indeterminate.

#### **TYPES OF OLIGOPOLY**

Oligopoly may be classified in the following ways.

#### a. Perfect and imperfect oligopoly:

On the basis of the nature of product oligopoly may be classified into perfect (pure)and imperfect (differentiated) oligopoly. If the products are homogeneous, then oligopoly is called as perfect or pure oligopoly. If the products are differentiated and are close substitutes, then it is called as imperfect or differentiated oligopoly.

#### **b.** Open or closed oligopoly:

On the basis of the possibility of entry of new firms, oligopoly may be classified into open or closed oligopoly. When new firms are free to enter, it is open oligopoly. When few firms dominate the market and newfirms do not have a free entry into the industry, it is called closed oligopoly.

### c. Partial and full oligopoly

Partial oligopoly refers to a situation where one firm's acts as the leader and others follow it. On the other hand, full oligopoly exists where no firm is dominating as the price leader.

#### d. Collusive and non-collusive oligopoly

Instead of competition with each other, if the firms follow a common price policy, it is called collusive oligopoly. If the collusion is in the form of an agreement, it is called open collusion. If it is an understanding between the firms, then it is a secret collusion. On the other hand if there is no agreement or understanding between oligopoly firms it is known as non- collusive oligopoly.

#### e. Syndicated and organized oligopoly

Syndicated oligopoly is one in which the firms sell their products through a centralized syndicate organized oligopoly refers to the situation where the firms organize themselves into a central association for fixing prices output quato etc.

#### **SWEEZY'S MODEL**

P. Sweezy introduced the kinked demand curve to explain the determination of equilibrium in oligopolistic market. The demand curve facing an oligopolistic has a link at the prevailing price. This is because each oligopolisticbelieves that if the lowers the price

below the prevailing level increases his price above the prevailing level his competitors will not follow his increases his price. Due to this behavioral pattern of the oligopolists, the upper segment of the demand curve is relatively elastic and the lower portion is relatively inelastic.



Fig 5

If the oligopolistic reduces its price below the prevailing price level MP, the competitors will fear that their customers would go away from them. Therefore they will also reduce the price .Since all the competitors are reducing their price, the oligopolistic will gain only very little sales. Hence the demand curve which lies below the prevailing price is inelastic. If the oligopolistic raises his price above the prevailing price level his sales.

## PRICING POLICY INTRODUCTION

Pricing assumes a significant role in a competition economy.price is the main factor which affects the sales of a organisation. A good price policy is of great importance to the producers, wholesalers, retailers and the consumer.Marketers try to achieve their long-run pricing objectives through both price policies and price strategies. If the prices are high, few buyer purchase and if the prices are low, many buyers purchase. Thus market may reduce or increased. That is, the price increases in relation to the sales revenue. Thus pricing is a

critical situation. Therefore, a sound pricing policy must be adopted to have maximum sales revenue.

#### PRICE

price may be defined as the exchange of goods or services in terms of money.Without price there is no marketing in the society.If money is not there, exchange of goods can be undertaken, but without price; i.e., there is no exchange value of a product or service agreed upon in a market transaction, is the key factor which affects the sales operations.

#### FACTORS AFFECTING PRICING POLICY

Price policy is government by external factors and internal factors.External factors areelasticity of demand and supply competition which must be kept in view while formulating a suitable price policy are listed below:

### (A) INTERNAL FACTORS

#### (1) Organisational Factors

Pricing decision occur on two level in the organisation. Over all price strategy is dealt with by top executives .They determine the basic ranges that the product falls into in the term of market segments .The actual mechanics of pricing are dealt with at lower levels in the firm and focus on individual product strategies.Usually , some combination of production and marketing specialists are involved in choosing the price.

#### (2) Marketing Mix

Marketing experts view price as only one of the many important element of the marketing mix. A shift in any one of the element has an immediate on the other three- production, Promotion and Distribution. In some industries, a firm may use price reduction as a marketing technique. Other firms may raise prices as a deliberate strategy to build a high - prestige product line. In either case, the effort will not succeed unless the price change in combined with a total

marketing strategy that supports it. A firm that raises its prices may add a more impressive -

looking package and may begin a new advertising campaign.

### (3) Product Differentiation

The price of the product also depends upon the characteristics of the product. In order to attract the customers different characteristics are added to the product, such as quality, size, colour, attractive package, alternative uses etc. Generally, customer pay more price for the product which is of the new style ,fashion, better package etc.

### (4) Cost of the Product

Cost and price of a product are closely related. The most important factor is the cost of production. In deciding to market a product, a firm may try to decide what prices are realistic, considering current demand and competition in the market. The product ultimately goes to the public and their capacity to pay will fix the cost; otherwise product would be flapped in the market.

### (5) Objectives of the Firm

A firm may have various objectives and pricing contributes its share in achieving such goals. Firm may pursue a variety of value - oriented objectives such as maximising sales revenue, maximising market share, maximising customer volume , minimising customer volume , maintaining an image maintaining stables price etc.Pricing policy should be established only after proper considerations of the objectives of the firm.

## (B) External Factors

External factors are those factor which are beyond the control of an organisation.

The following external factors would affect the pricing decisions:

## 1. Demand:

The nature and condition of demand should be considered when fixing the price. Composition of the market, the nature of buyers, their psychology, their purchasing power, standard of living , taste, preferences and customs have large influence on the demand. Therefore the management has to weigh these factors thoroughly. If the demand for a product is inelastic, it is better to fix a higher price for it. On the other hand, if demand is elastic, lower price may be fixed.

#### 2. Competition:

In modern marketing, a manufacturer cannot fix his own price without considering the competition. A number of substitutes enter the market these days. Hence the influence of substitutes has also to be considered when fixing a price without considering when fixing a price. A firm must be vigilant about the prices charged by competitors for the similar products. If prices are fixed higher than the price charged by competitors , the customers are likely to switch over to the products of competitors. On the other hand, if the prices charged are much lower than the prices of the rivals, the customers may become suspicious about the quality and hence lower price may not lead to higher sales . TO avoid competitive pricing, differentiate the product . In view of these, the management must be very careful in determining the prices

#### **3.** Distribution Channels:

Distribution channels also sometimes affect the price. The consumer knows only the retail price .But there is a middleman working in the channel of distribution. He charges his profit .Thus when the articles reach the hands of consumers, the price becomes higher. It sometimes happen that the consumer reject it.

### 4. General Economic conditions:

Price is affected by the general economic conditions such as inflation, deflation, trade cycle etc. In recession period, the prices are reduced to maintain the level of turnover. In boom periods, price is increased to cover the increasing cost of production and distribution.

#### 5. Govt. Policy :

Pricing also depends on price control by the Govt, through enactment of legislation. While fixing the price, a firm has to take into consideration the taxation and trade policies of govt.

#### **6.** Reactions of Consumers:

An important factor affecting pricing decisions is the attitude of consumers. If a firm fixes the price of its product unreasonably high, the consumers may boycott the product.

#### KINDS OF PRICING

By following the above principles, business firms may opt for various kinds of pricing for products. A few, important of them are explained below.

#### **1. PSYCHOLOGICAL PRICING:**

Many consumers use the price as an indicator of quality. Costs and other factors are important in pricing. Yet, psychology of the price is also considered certain people prefer high priced products, considered to be of high quality. Costly items diamond, jewellery etc ., reveal the status of the person who wears them. They demand highly priced items.

#### **2.** CUSTOMARY PRICING:

Customers expect a particular price to be charged for certain product. The price are fixed to suit local condition. The customers are familiar with the market condition . Manufactuers cannot control the price. Such products are typically a standardized one. Certain business people reduce the size of the product , if the cost of manufacturing increases, Some times , the firm changes the price by adopting new package , size etc. (E.g)confectionary items.

#### **3.** SKIMMING PRICING:

It involves a high introductory price in the initial stage to skim the cream of demand. The products, when introduced in the market have a limited period free from other manufacturers. During this period , it aims at profit Maximization , according to the favorable market

condition. Generally, the price moves downwards are when competitors enter into the market field.

#### **4. PENETRATION PRICING**:

A low price is designed in the initial stage with a view to capture market share.

that is if the pricing policy is to capture greater marketer share, then this is done only by adoption of low prices in the initial stage. Because of the low price, sales value increases, competition falls down.

#### **5. GEOGRAPHICAL PRICING:**

The distance between the seller and the buyer is consided geographic pricing.InIndia, the cost of transportation is an important pricing factor because of vide geographical distance between the production centre and consuming centre. The majority producing centers are located in Bombay, Delhi, Calcutta and Madras and t the same time consuming centre are dispersed throughout India. There are three ways of charging transit.

#### **6.** ADMINISTERED PRICE

Administered price is defined as the price resulting from managerial decisison and not on the basis of cost , competition, demand etc. But this price is set by the management after considering all relevant factors. There are many similar products manifesting different firms and more or less the price tends to be uniform.Usually the administered price remains unaltered for a considerable period of time.

#### 7. DUAL PRICING

Under this dual pricing system, a producer is required compulsorily to a sell a part of his production to the government or its authorized agency at a substantially low price. The rest of the product may be sold in the open market at a price fixed by the producer.

#### **8. MARK UP PRICING**

This method is also known as cost plus pricing. This method is generally adopted by

wholesalers and retailers. When they set up the price initially, a certain percentage is added to the cost before marking the price.(e.g.) the cost of an item Rs. 10 and is sold at Rs. 13 the Mark up is Rs.3 or 30%.

## 9. SEALED BID PRICING

In all business lines when the firms bid farjobs ,competition based pricing is followed . Costs and demand are not considered at all. The firm fixes its prices on how the competitors price their products. It means that if the firm is to win a contract or job, it should quote



## SCHOOL OF MANAGEMENT STUDIES

**UNIT – V - BUSINESS ECONOMICS - SBAA1103** 

## **UNIT 5 – THEORIES OF FACTOR PAYMENT**

Theories of factor pricing - factor pricing vs. product pricing - Theories of rent, Theories of interest, Theories of wages, Theories of profit - Concept of profit maximization.

## **INTRODUCTION:**

Factors of production can be defined as inputs used for producing goods or services with the aim to make economic profit. In economics, there are four main factors of production, namely land, labor, capital, and enterprise. The price that an entrepreneur pays for availing the services of these factors is called factor pricing.

An entrepreneur pays rent, wages, interest, and profit for availing the services of land, labor, capital, and enterprise respectively. The theory of factor pricing deals with the price determination of different factors of production.

The determination of factor prices is always assumed to be similar to the determination of product prices. This is because in both the cases, the prices are determined with the help of demand and supply forces. Moreover, the demand for factors of production is similar to the demand for products.

However, there are two main differences on the supply side of factors of production and products. Firstly, in product market, the supply of a product is determined by its marginal cost of production. On the other hand, in factor market, it is not possible to determine the supply of factors on the basis of marginal cost.

For example, it is difficult to ascertain the exact cost of production for factors, such as land and capital. Secondly, the supply of factors of production cannot be readily adjusted as in the case of products. For instance, if the demand for a land increases, then it is not possible to increase its supply immediately.

#### **Concept of Factor Pricing:**

Factor pricing is associated with the prices that an entrepreneur pays to avail the services rendered by the factors of production. For example, an entrepreneur needs to pay wages to labor, rents for availing land, and interests for capital so that he/she can earn maximum profit. These factors of production directly affect the production process of an organization.

In context of an economy, these four factors of production when combined together produce a net aggregate of products, which is termed as national income. Therefore, it is important to determine the prices of these four factors of production. The theory of factor pricing deals with the determination of the share prices of four factors of production, namely land, labor, capital and enterprise.

In other words, the theory of factor pricing is concerned with the principles according to which the price of each factor of production is determined and distributed. Therefore, the theory of factor pricing is also known as theory of distribution. According to Chapman, the theory of distribution, "accounts for the sharing of the wealth produced by a community among the agents, or the owners of the agents, which have been active in its production."

## Factor pricing vs. product pricing

1. In the product (consumer goods) market, the consumers or the households are the buyers and the firms are the sellers. In this market, the buyers aim at maximizing utility and the sellers aim at maximizing profit.

In the market for factor inputs, on the other hand, firms are the buyers and the households are the sellers. In this market, the buyers have the goal of profit maximization and the sellers or households want to have maximum possible utility by way of earning an optimum income.

We should remember that in the factor market, the sellers or the households do not want to maximize income through selling the inputs. For example, a worker does not want to maximize income by working 24 hours a day, because then he would not have any leisure.

Since a worker derives utility from both income and leisure, he wants to have a combination of income and leisure—he wants to have such a combination that would maximize his utility level. This is called optimization of income through which the worker would have the maximum (possible) utility.

2. In the product market, demand for a commodity arises from the utility it provides to the buyer—the higher the utility the buyer derives from the consumption of a good, the higher would be its demand. On the other hand, the demand for a factor arises from the demand for the product it produces.

The demand for the factor increases or decreases as the demand for the product rises or falls. That is, the demand for a factor emerges from the demand for the product it produces. That is why the demand for a factor of production is called derived demand.

3. The firm uses many inputs simultaneously to produce its output. That is why the demand for the inputs, in most cases, is a joint demand. In the case of product demand, on the other hand, a good is, in general, demanded singly, not jointly, although, in some cases of complementarity, goods are demanded jointly.

4. There is also a difference between the supply of a good or service and that of a factor of production. Barring some exceptions, the supply curve of the goods and services are upward sloping towards right, i.e., their supply rises or falls according to the law of supply, as the prices increase or decrease.

5. In product pricing, theories do not differ on the basis of the products, but they are influenced by the characteristic features of the markets. In the field of factor pricing also, the theories differ because of the differing market features. Not only that. Separate theories have been built up for different factors of production, owing to the differences in the nature of their supply.

We may note here that the demand for the factors of production may be analysed with the help of a common theory, although there may exist differences on the supply side. This com-mon demand theory is called the Marginal Productivity Theory.

## MARGINAL PRODUCTIVITY THEORY OF DISTRIBUTION

The marginal productivity theory of distribution was developed by J. B. Clark. The marginal productivity theory of distribution is the general theory of distribution. The theory explains how prices of various factors of production are determined under conditions of perfect competition. It emphasizes that any variable factor must obtain a reward equal to its marginal product .

Thus, rent is equal to the value of the marginal product (VMP) of land; wages are equal to the VMP of labour and so on. A firm will go on employing more and more units of a factor until the price of that factor is equal to the value of the marginal product. In other words, each factor will be rewarded according to its marginal productivity.

The marginal productivity is equal to the value of the additional product which an employer gets when he employs an additional unit of that factor. We assume that the supply of all other factors remain constant. We shall give a simple illustration of the marginal productivity theory of distribution by making use of labour.

The aim of a firm is maximization of profit. It will hire a factor as long as it adds more to total revenue than to total cost. Thus a firm will hire a factor upto the point at which the marginal unit contributes as much to total cost as to total revenue because total profit cannot be further increased.

The condition of equilibrium in the labour market is MCL = VMPL Where MCL = Marginal cost of labour VMPL = Value of marginal product of labour Or W = VMPL Where W = wages of labour

Note : It is assumed that a firm can employ any amount of labour under a given wage rate as the supply of labour is assumed to be unlimited in a competitive market.

## **Assumptions of the Theory**

- **1. Perfect competition in both product and factor markets:** Firstly, the theory assumes the perfect competition in both product and factor markets. It means that both the price of the product and the price of the factor (say, labour) remain unchanged.
- 2 **Operation of the law of diminishing returns:** Secondly, the theory assumes that the marginal product of a factor would diminish as additional units of the factor are employed while keeping other factors constant.
- **3** Homogeneity and divisibility of the factor: Thirdly, all the units of a factor are assumed to be divisible and homogeneous. It means that a factor can be divided into small units and each unit of it will be of the same kind and of the same quality.
- **4 Operation of the law of substitution:** Fourthly, the theory assumes the possibility of the substitution of different factors. It means that the factors like labour, capital and others can be freely and easily substituted for one another. For example, land can be substituted by labour and labour by capital.

- **5 Profit maximization:** Fifthly, the employer is assumed to employ the different factors in such a way and in such a proportion that he gets the maximum profits. This can be achieved by employing each factor up to that level at which the price of each is equal to the value of its marginal product.
- **6** Full employment of factors: Sixthly, the theory assumes full employment for factors. Otherwise each factor cannot be paid in accordance with its marginal product. If some units of a particular factor remain unemployed, they would be then willing to accept the employment at a price less than the value of their marginal product.
- 7. Exhaustion of the total product: Finally, the theory assumes that the payment to each factor according to its marginal productivity completely exhausts the total product, leaving neither a surplus nor a deficit at the end.

### Diagram of wage deamination in a competitive market



Figure. 1 describes

MPPL = Marginal physical product (of labour) curve VMPL

= Value of marginal product curve

VMPL = MPPL.PX (VMPL = Marginal physical product of labour multiplied by price of the commodity)

Note : P (The price is assumed to be constant under conditions of perfect competition)

In fig. 2, the equilibrium of the firm is shown by E. This is so because to the left of L\*, each unit of labour costs less than the value of its product (VMPL > W). Hence the firm will make more profit by hiring more workers. To the right of VMPL<W. Hence, the profits of the firm will be reduced. So profits will be maximum when VMPL = W.

It follows from the above discussion that the demand curve of a firm for a single variable factor (e.g. labour) is its value of marginal product curve.

Thus the productivity of the marginal unit of a factor determines the rate that is to be paid to all units of the factor. The employer adopts the principle of substitution and combines land, labour and capital in such a way that the cost of production is minimum. Then the reward for each factor is determined by its marginal productivity. The marginal productivity theory of distribution has been used to explain the determination of rent, wages, interest and profits. That is why, it is called general theory of distribution.

## **Criticisms of the Theory**

- **1. In determination of marginal product:** Firstly, main product is a joint product— produced by all the factors jointly. Hence the marginal product of any particular factor (say, land or labour) cannot be separately determined. As William Petty pointed out as early in 1662: Labour is the father and active principle of wealth, as lands are the mother.
- 2. Unrealistic: It is also shown that the employment of one additional unit of a factor may cause an improvement in the whole of organisation in which case the MPP of the variable factors may increase. In such circumstances, if the factor is paid in accordance with the VMP, the total product will get exhausted before the distribution is completed. This is absurd. We cannot think of such a situation in reality.
- **3. Market imperfection:** The theory assumes the existence of perfect competition, which is rarely found in the real world. But E. Chamberlin has shown that the theory can also be applied in the case of monopoly and imperfect competition, where the marginal price of a factor would be equal to its MRP (not to its VMP).
- **4. Full employment:** Again, the assumption of full employment is also unrealistic. Full employment is also a myth, not a reflection of reality.
- **5. Difficulties of factor substitution:** W. W. Leontief, the Nobel economist, denies the possibility of free substitution of the factors always owing to the technical conditions of production. In some products process, one factor cannot be substituted by another. Moreover organization or entrepreneurship is a specific factor which cannot be substituted by any other factor.
- **6. Emphasis on the demand side only:** The theory is one-sided as it ignores the supply side of a factor; it has emphasized only the demand side i.e., the employer's side, hi the opinion of Samuelson, the marginal productivity theory is simply a theory of one aspect of the demand for productive services by the firm.
- **7. Inhuman theory:** Finally, the theory is often described as inhuman 'as it treats human and non-human factors in the same way for the determination of factor prices.

## RENT

In ordinary language, -rentl refers to any periodic payment made for the use of a good. For example, when we live in someone's house, we pay rent. This rent is contract payment. The contract rent includes besides the payment made for the use of land, interest on the capital invested in the house, wages and profit. But classical economists like Ricardo referred by -rentl to the payment made for the use of agricultural land. Rent arises because of the peculiar characteristics of land. The supply of land is inelastic and it differs in fertility. Rent arises because of differences in fertility. Those lands which are more fertile than others get rent.

## THE RICARDIAN THEORY OF RENT

David Ricardo, an English classical economist, first developed a theory in 1817 to explain the origin and nature of economic rent.

According to Ricardo, -rent is that portion of the produce of the earth which is paid to the landlord for the use of the original and indestructible powers of the soil.

So rent is payment made for the use of land for its original powers. Ricardo believed that rent arose on account of differences in the fertility of land. Only superior lands get rent. Rent is a differential surplus.

Ricardo explained his theory by taking the example of colonization. If some people go and settle

down in a place, first they will cultivate the best lands. If more people go and settle down, the demand for land will increase and they will cultivate the second-grade lands. The cost of production will go up. So the price of grain in the market must cover the cost of cultivation. In this case, the first grade land will get rent. After some time, if there is increase in population, even third grade lands will be cultivated. Now, even second grade lands will get rent and first grade lands will get more rent but the third grade land will not get rent. It is known as no - rent land.

## **Assumptions of the Theory**

- 1. **Rent of land arises due to the differences in the fertility** or situation of the different plots of land. It arises owing to the original and indestructible powers of the soil.
- 2. Ricardo assumes the operation of **the law of diminishing marginal returns in the case of cultivation of land**. As the different plots of land differ in fertility, the produce from the inferior plots of land diminishes though the total cost of production in each plot of land is the same.
- 3. Ricardo looks at the supply of land from the standpoint of the society as a whole.
- 4. In the Ricardian theory it is assumed that land, being a gift of nature, has no supply price and no cost of production. **So rent is not a part of cost**, and being so it does not and cannot enter into cost and price. This means that from society's point of view the entire return from land is a surplus earning.

#### **Diagram of Ricardian theory of Rent**



#### Fig 2

In the above figure, grades of land are shown along the X axis and the output up the y – axis. The shaded area in the diagram indicates rent. In this case, grade I and grade II lands get rent. The grade III land will not get rent.

#### **Criticism of the Ricardian Theory of Rent**

- 1. According to Ricardo, land has "original and indestructible powers". But the fertility of land may decline after some time because of continuous cultivation.
- 2. Ricardo believed that **rent is peculiar to land alone. But many modern economists argue that the rent aspect can be seen in other factors like labour and capital**. Rent arises whenever the supply of a factor is inelastic in relation to the demand for it.
- **3.** Ricardo is of the view that **rent does not enter the price of the commodity produced in it.** But rent enters the price from the point of view of a single firm.
- 4. Ricardian theory does not take note of scarcity rent.
- 5. It is based on **perfect competition**. Only under perfect competition, there will be one price for a good. But in the real world, we have imperfect competition.

## **QUASI-RENT:**

The concept of quasi-rent was given by Alfred Marshall. He defined quasi rent as surplus earnings generated by the factors of production, except land.

According to Marshall, \_Quasi-rent is the income derived from machines and other appliances for production by man<sup>||</sup>.

There are some machines and other man-made appliances (e.g. boats) whose supply may be inelastic in the short run in relation to the demand for them. For example, when there is large increase in demand for fish during a season, the demand for boats will increase. But you cannot increase their supply overnight. So they will earn some extra income over and above the normal income they receive. This, Marshall calls Quasi-rent. Quasi-rent will disappear, when once the supply of boats increases. So, It is used for a short-period of time.

#### **Diagram of Quasi-Rent**



Fig 3

In the above figure, SS represents the inelastic supply curve. The demand (DD) and supply (SS) curve intersects at point E. At point E, the price is equal to OP and quantity of equipment is OS. In the short run, the increased demand (D'D') reaches to the price level of OP'with the constant supply of OS.

As the number of equipment is constant in short-run, therefore, the transfer earnings are zero and quasi-rent is equal to total earnings from the equipment. However, in long-run, the supply of equipment (PL) is perfectly elastic. Therefore, any number of equipment can be supplied at OP. Now, the supply reaches to OM and prices fall to E|M. The quasi- rent would disappear because the price gets equal to the transfer earning (OP).

## WAGES

Wages are a payment for the services of labour, whether intellectual or physical. Wage may be paid daily, weekly, fortnightly, monthly or yearly and partly at the end of the year in the form of bonus.

Wage is the price paid to the labourer for the services rendered. According to Benham, wage is -A sum of money paid under contract by an employer to a worker for the services rendered.

## Kinds of Wages

- Nominal Wages or Money Wages: Nominal wages are referred to the wages paid in terms of money.
- **Real Wages:** Real wages are the wages paid in terms of goods and services. Hence, real wages are the purchasing power of money wages.
- **Piece Wages:** Wages that are paid on the basis of quantum of work done.
- **Time Wages:** Wages that are paid on the basis of the amount of time that the worker works.rms of money.

## **THEORIES OF WAGES**

- Traditional Theories of wages:
  - The Subsistence Theory of wages
  - The Standard of Living Theory
  - The Wages Fund Theory
  - The Residual Claimant Theory

## Some of the important recent theories of wages:

- The Marginal productivity theory of wages
- The Market theory of wages and
- The Bargaining theory of wages

## THE SUBSISTENCE THEORY OF WAGES

Subsistence theory is one of the oldest theories of wages. It was first explained by Physiocrats, a group of French economists and restated by Ricardo. According to this theory, wage must be equal to the subsistence level of the labourer and his family. Subsistence means the minimum amount of food, clothing and shelter which workers and their family require for existence. If workers are paid higher wages than the subsistence level, the workers would be better off and

they will have large families. Hence, the population would increase. When the population increases, the supply of labourer would increase and therefore, wages will come down. On the other hand, if wages are lower than the subsistence level, there would be a reduction in population and thereby the supply of labour falls and wages increase to the subsistence level. So this theory is closely associated with Malthusian Theory of Population.

### **Criticisms of Subsistence Theory of Wages**

- Role of trade unions in collective bargaining's was not found.
- It does not explain the differences in wages in different occupations.
- The assumption that population would increase with a rise in wage rate is not correct. Poor families (and countries) have more Children than rich families (countries). Wage rate alone does not-determine birth-rate Actually, as increases, people can afford to downsize their family size for adopting costly family planning procedures; while poor people cannot do so.

## STANDARD OF LIVING THEORY OF WAGES

The Standard of Living Theory of Wages developed by Torrance is an improved and refined version of the Subsistence Theory of Wage. According to this theory, wage is equal to the standard of living of the workers. If standard of living is high, wages will be high and vice versa. Standard of living wage means the amount necessary to maintain the labourer in the standard of life to which he is accustomed.

#### **Criticism of Standard of Living Theory of Wages**

- According to this theory, the standard of living determines wages. But in actual practice, wages determine the standard of living.
- There is no doubt that the standard of living theory is an improvement on the subsistence theory. It is true that there is relationship between standard of living and wages. But it is rather difficult to say which is the cause and which is the result.

#### THE WAGE FUND THEORY OF WAGES

This theory was first propounded by Adam Smith. But the credit goes to J.S.Mill who perfected this theory. According to Wages Fund Theory, -wages depend upon the proportion between population and capital<sup>||</sup>. The term -capital<sup>||</sup> in the context refers to the fund set apart for payment of wages. And the word population 'refers to workers. If the supply of workers increases, wages will fall and vice versa.

#### **Criticisms Wage Fund Theory of Wages**

- It does not explain the difference in wages in different occupations.
- It ignores the role of trade unions.
- Actually the capitalists will take away a large sum before making payment of wages.

## THE RESIDUAL CLAIMANT THEORY OF WAGE

This theory was propounded by the American economist F.A.Walkar in 1875, in his book

Political Economy.According to this theory, wages -equal the whole product minus rent, interest and profits (Walker). In other words, the theory tells that wages are paid out of the residue that is left over after making payment for rent, interest and profits.

## **Criticisms of Residual Claimant Theory of Wage**

- This theory does not explain the role of trade unions can secure higher wage for workers.
- Demand side of labour in the determination of wages needs to be considered.
- It considers wages as residual payment. But wages are in the nature of advance payment and they have to be paid first. Normally, profits are taken at the end.

## MARGINAL PRODUCTIVITY THEORY OF WAGE

The application of general theory of distribution to wage fixation is the marginal productivity theory of wages. According to the theory wages are determined by the marginal productivity of labour and equal to it at the point of equilibrium. Under perfect competition wage is paid equal to marginal product of labour (wage = MPL) But in real world where there is imperfect competition, there is exploitation of labour and wage is less than MPL.

### Assumptions

- There is perfect competition in factor market and in product market.
- Labour is homogeneous.
- The law of diminishing returns operates in production.
- There is free entry and exit of the firms.
- There is perfect knowledge about the market conditions.
- All factors of production can be substituted for each other.
- There is free mobility of factors of production.
- Factors of production are divisible.

## Criticism

- Every product is produced by the joint effort of all factors of production. It is rather difficult to measure the productivity of each factor in terms of the product produced. The difficulty is more in measuring the marginal productivity of those who render services (eg. doctors, actors and lawyers)
- it is based on the assumption of perfect competition. But in the real world, we have only imperfect competition ;
- under monopoly, wages will be lower than the marginal product of labour because there is exploitation of labour ;
- wages are in the nature of advance payment. So an employer will deduct some amount to cover the interest on capital and pay the workers wages which are lower than their marginal product. So wages are the discounted marginal product of labour
- The theory should not be used to justify the low wages in an economy and the inequalitites of incomes. Wages might be low because of exploitation of labour. In spite of the above criticism,-the doctrine throws into clear light the action of one of the causes that govern wages. (Marshall).

#### THE BARGAINING THEORY OF WAGES

The bargaining theory of wages takes note of the influence of trade unions on wages through collective bargaining. According to the theory, the level of wages in an industry depends on the bargaining strength of the trade union concerned. The strength of a trade union depends upon many things like the size of its membership, the size of its –fighting fund<sup>II</sup>, and its ability to cause dislocation in the industry and the economy through strike.

During periods of full employment and good trade, trade unions will be in a strong position and during depression marked by bad trade and mass unemployment; trade unions will be in a weak position. A trade union may increase wages by restricting the supply of labour. For example, it may insist that only members of a trade union should be employed. This is known as closed shop policy. It may threaten that it will go on strike if a minimum wage is not paid.

### THE MARKET THEORY OF WAGES

The market theory looks at wages as the price of labour. Like all other prices, wages are determined by the market forces of supply and demand. The supply of labour generally refers to the total number of people available for employment. Some types of labour require long periods of training. During that long period, workers have to sacrifice their earnings. We have to take note of the foregone earnings while estimating the cost of labour which determines its supply.

#### The demand for labour:

Demand for labour is a derived demand. Modern production is carried on largely on the basis of anticipation of demand for goods. During good trade, demand for labour will be more. Again, if capital is cheap, the employer will try to substitute capital for labour. When there is increase in investment, there will be increase in demand for labour. In a competitive labour market, equilibrium will be established at the wage that equates the demand for labour with the supply of labour.

#### Diagram of determination of wages in a market



In the above figure, DL curve represents demand for labour and SL curve represents supply of labour. Demand for and supply of labour are presented along the X axis and wages are represented up the Y axis. Wages are determined (OW) at that point (E) where the demand for labour is equal to the supply of labour (ON). If demand for labour is high relative to its supply, wages will be high and vice versa. On the supply side, there are many imperfections. There is geographical immobility of labour. There may be shortage in the supply of certain categories of labour (eg. doctors, engineers). In some industries, the supply of labour is controlled by trade unions.

## INTEREST

Generally speaking, interest is a payment made by a borrower to the lender for the money borrowed. Interest is the reward paid by the borrower to the lender for the use of capital. According to Alfred Marshall –Interest is the price paid for the use of capital in any market.

## **Kinds of Interest**

- **Gross Interest:** Gross interest is the total interest amount received by creditors from debtors. Gross Interest = (Net Interest) + (reward for inconvenience) + (insurance against risk of non- repayment) + (payment for service of debt management)
- Net Interest: Net Interest is only a part of the gross interest. It is the payment for use of capital only. A good example for net interest is the interest payable for Government Securities.

## THEORIES OF INTEREST

- The Abstinence or Waiting Theory of Interest
- The Agio Theory and Time Preference Theory
- Saving and Investment Theory (The classical theory)
- Loanable Funds Theory and
- The Liquidity Preference Theory

## ABSTINENCE THEORY OR WAITING THEORY OF INTEREST

This theory was expounded in 18<sup>th</sup> century by an eminent economist N. W. Senior. According to him, **"Capital is the result of saving".** He was the first economist to point-out that saving, which was later on embodied in capital goods, involved a sacrifice, an \_abstinence' as he called it.

According to the Abstinence theory, interest is the reward for abstaining from the immediate consumption of wealth,. When people save, they abstain from present consumption. That involves some sacrifice. To make them save, interest is offered as a reward. Marshall accepted the Abstinence Theory of interest. But he used the word waiting instead of -abstinence I. Saving implies waiting. According to him, interest is the reward for waiting.

## Criticisms

- This theory takes no consideration of the productivity of capital: In fact, here the borrower uses and pays for the capital because it is productive.
- In this sacrifice cannot be measured: In this theory the feeling of sacrifice or real cost of saving cannot be measured so it is difficult to see how a given rate of Interest can be arrived at by this theory. This theory is subjective and not amenable in practice.
- In this rich hardly experience any inconvenience as they have enough money: As we have experienced that a large part of capital comes from rich, wealthy lenders who have a surplus of income so that they hardly experience any inconvenience or sacrifice of consumption and they save because they do not know what to do with their fabulous income.
- This theory has been called one-sided: Because it emphasises only the supply side, ignoring the factors leading to the demand for saving or capital. Thus, Interest can be paid as a reward to abstain from consumption and save resources for capital formation. Perhaps, this is also true for certain backward modern economies.

## AGIO THEORY OF INTEREST/ THE PSYCHOLOGICAL THEORY OF INTEREST/TIME PREFERENCE THEORY

This theory was propounded by John Rae in 1834. But credit goes to Bohm Bawerk an Austrian School economist who has given final shape to the theory. The American economist Irving Fisher modified and gave a new theory viz Time Preference theory.

According to this theory, the present carries a premium (agio) over the future, and as people prefer present consumption to future consumption, we have to pay a price for them by way of compensation. And that is interest. The time preference theory of Irving Fisher is more or less the same as Agio theory of interest. The marginal productivity theory of distribution is nothing but the application of the marginal productivity theory of distribution. It tells that interest tends to equal the marginal productivity of capital.

## **Assumption:**

- The purchasing power of money is assumed to be constant
- The taste, preferences and attitudes of the capital owners remain the same

## **Criticisms:**

- Agio theory fails if the above said assumptions are invalid. For example, if money is expected to buy more in the future, than it does at present, or if the lender expects to lead relatively a simpler life in future, the assumptions are violated and the Agio theory becomes inapplicable.
- It ignores completely the demand side.

## SAVING AND INVESTMENT THEORY (THE CLASSICAL THEORY)

According to the classical theory of interest, the rate of interest is determined by the demand for

capital (Investment) and the supply of capital (saving). So, this theory is also known as investment – saving theory of interest. The theory is based on the assumption that there is a direct relationship between the rate of interest, savings and direct relationship between interest and investment. The classical theory is a real theory because it seeks to explain the determination of the rate of interest by real factors like productivity and thrift.

The classical economists believed that savings would increase when the interest rates were high, and investment would increase with a fall in interest rate. And the equilibrium between saving and investment was brought about by the rate of interest.

## LOANABLE FUNDS THEORY/ THE NEO CLASSICAL THEORY

The Loanable Funds Theory, also known as the -Neo-Classical Theoryl, was developed by Swedish economist like Knut Wicksell, Bertil Ohlin, Viner and Gunnar Myrdal. According to this theory, interest is the price paid for the use of loanable funds. The rate of interest is determined by the equilibrium between demand for and supply of loanable funds in the credit market.

The loanable funds theory is wider in its scope than the classical theory of interest. The term -loanable funds includes not only saving out of current income but also bank credit, dishoarding and disinvestments. But by saving, the classical economists referred only to saving out of current income. We know now that bank credit is an important source of funds for investment.

In the classical theory, saving was demanded only for investment. But according to loanable funds theory, the demand for funds arose, not only for investment but also for hoarding wealth. The classical theory regarded interest as a function of saving and investment, (r = f (S.I.) But, according to loanable funds theory, the rate of interest is a function of four variables, i.e r = f (I S M.L.) where r is the rate of interest, I = investment, S = saving, M = bank credit and L = desire to hoard or the desire for liquidity.

## **Demand for Loanable Funds**

The demand for loanable funds depends upon the following:

- **Demand for Investment (I):** The most important factor responsible for the loanable funds is the demand for investment. Bulk of the demand for loanable funds comes from business firms which borrow money for purchasing capital goods.
- **Demand for Consumption (C):** The demand for loanable funds comes from individuals who borrow money for consumption purposes also.
- **Demand for Hoarding (H):** The next demand for loanable funds comes from hoarders. Demand for hoarding money arises because of people's preference for liquidity, idle cash balances and so on. The demand for C, I and H varies inversely with interest rate.

#### **Supply of Loanable Funds**

The supply of loanable funds depends upon the following four sources:

• Savings (S): Loanable funds come from savings. According to this theory, savings may be of two types, namely,

- ■Savings planned by individuals are called -ex-ante savings I. E.g. LIC premium, EMI payment etc.
- •The unplanned savings are called, -ex-post savings I. Savings is left out after spending are ex post saving.
- **Bank Credit (BC):** The bank credit is another source of loanable funds. Commercial banks create credit and supply loanable funds to the investors.
- **Dishoarding (DH):** Dishoarding means bringing out the hoarded money into use and thus it constitutes a source of supply of loanable funds. In India, after 1991,Public sector undertakings are being sold to private people to mobilize more funds. This is also called disinvestment.
- **Disinvestment (DI):** Disinvestment is the opposite of investment. In other words disinvestment means not providing sufficient funds for depreciation of equipment. It gives rise to the supply of loanable funds. All the four sources of supply of loanable funds vary directly with the interest rate.

#### **Diagram of Loanable fund theory of Interest**





In the above Fig, The Curve S'represents savings, the curve M'represents bank credit (including dishoarded and disinvested wealth). The curve S + M represents total loanable funds at different rates of interest. On the demand side, the curve I represents demand for investment. The curve L represents demand for idle cash balances or to hoard money. The curve I + L represent the total demand for loanable funds at different rates of interest. The market rate of interest rm is determined by the intersection of S + M curve and I + L curve. The aggregate demand for loanable funds is equal to the aggregate supply of loanable funds at this rate of interest. In the classical theory, rn which may be called the natural rate of interest is determined by the intersection of I and S curves. That is, when the rate of interest is rn, the demand for investment is equal to the supply of savings.

#### **Criticisms of Loanable fund theory of Interest**

• Many factors have been included in this theory. Still there are many more factors. Two such factors are 1) Asymmetric Information and 2) Moral Hazard. In practice larger

firms, due to their political powers, are able to get huge bank credit at lower interest rates. But due to NPAs, (Non-Performing Assets) small firms and depositors lose their interest income. The loanable funds theory is indeterminate 'unless the income level is already known. (This can be studied in 12th standard Economics)

• It is very difficult to combine real factors like savings and investment with monetary factors like bank credit and liquidity preference.

## KEYNES' LIQUIDITY PREFERENCE THEORY OF INTEREST OR THE MONETARY THEORY OF INTEREST

Keynes propounded the Liquidity Preference Theory of Interest in his famous book, -The General Theory of Employment, Interest and Moneyl in 1936.

According to Keynes, interest is purely a monetary phenomenon because the rate of interest is calculated in terms of money. To him, -interest is the reward for parting with liquidity for a specified period of time.

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### Motives of Demand for Money

According to Keynes, people have liquidity preference for three motives. They are;

- Transaction motive
- Precautionary motive; and
- Speculative motive.
- **Transaction motive:** The transaction motive relates to the desire of the people to hold cash for the current transactions (or day–today expenses).
- **Precautionary motive:** The precautionary motive relates to the desire of the people to hold cash to meet unexpected or unforeseen expenditures such as sickness, accidents, fire and theft.
- **Speculative motive:** The speculative motive relates to the desire of the people to hold cash in order to take advantage of market movements regarding the future changes in the price of bonds and securities in the capital market.

Of the three motives, speculative motive is more important in determining the rate of interest. Keynes believed that the amount of money held for speculative motive would vary inversely with the rate of interest.

#### **Determination of Rate of Interest**

According to Keynes, the rate of interest is determined by the demand for money and the supply of money. The demand for money is liquidity preference.

In fact, liquidity preference for speculative motive determines rate of interest. The supply of money is determined by the policies of the Government and the Central Bank of a country.

## **Diagram of Liquidity preference Theory of interest**



### Fig 6

In the above figure, Liquidity preference is shown by L and the supply of money is represented by M and the rate of interest is indicated by r. Rate of interest is determined by the intersection of L and M curves. There will be increase in the rate of interest to r1, when there is increase in demand for money to L1 or by a decrease in the supply of money to M1.

## Criticisms

- This theory does not explain the existence of different interest rates prevailing in the market at the same time.
- It explains interest rate only in the short-run.

## PROFIT

Profits are the reward for organization or entrepreneurship. Risk- taking and uncertainty-bearing are the main functions of an entrepreneur. So we may consider profit as the reward for the above functions. Profit is a return to the entrepreneur for the use of his entrepreneurial ability. It is the net income of the organizer. In other words, profit is the amount left with the entrepreneur after he has payments made for all the other factors (land, labour and capital) used by him in the production process.

## **Concept of Profit**

• **Gross Profit:** Gross Profit is the surplus which accrues to a firm when it subtracts its Total Expenditure from its Total Revenue.

## Gross Profit = Total Revenue - Total cost

• Net Profit: Net or pure or economic or true profit is the residual left with entrepreneur after deducting from Gross profit the remuneration for the self-owned factors of production, which are called implicit cost.

## Net Profit = Gross Profit - Implicit costs

- Normal Profit: It refers to the minimum expected return to stay in business.
- Super Normal Profit: Super normal profits are over and above the normal profit. Super Normal Profit = Actual profit - Normal profit

## **THEORIES OF PROFIT**

- **a** The rent theory of profits
- **h** The marginal productivity theory of profits
- **c** The wages theory of profits
- **d** The dynamic theory of profits
- e. The innovation theory of profits
- **f.** The risk theory of profits, and
- **g** The uncertainty bearing theory of profits.

## **RENT THEORY OF PROFIT**

This theory is associated with Francis Walker.

In his view, profits are the -rent of ability|| and they are similar to rent. Rent arises because of differences in fertility of land. Similarly profits arise because of differences in ability. That is why it is called the -rent of ability||.

## **Criticisms:**

- The theory provides no explanation to the share of profits of the shareholders of jointstock companies
- There cannot be a perfect similarity between rent and profit. Rents can never be negative while profits can be negative when the entrepreneur suffers losses.
- Walker has explained surplus profit. He has nothing to say about other types of profits and the size of the profit.

## WAGE THEORY OF PROFIT

This theory was advanced by the American economist Prof. Taussig.

According to Prof. Taussig, profits are not different from wages. Profits are the wages of the entrepreneur for his special ability. Profits are the wages of management.

## **Criticisms:**

- The theory has been criticized on the following points;
- There are basic differences between wages and profits. Wages are fixed and are a stipulated income, while profits are uncertain and are residual incomes
- It is the entrepreneur who undertakes risks in any production process while the wage earner is free from undertaking any such risks.
- The theory fails to explain the reason as to why the shareholders of a company receive profits while they do not put in any labour.

## MARGINAL PRODUCTIVITY THEORY OF PROFIT

The chief exponents of the theory are Edgeworth, Chapman, Stigler and Stonier.

The theory is an application of the general theory of distribution. According to this theory, under

perfect competition, profits will be equal to the value of the marginal product of entrepreneur/organizer.

## The Dynamic Theory of profits

This theory was propounded by the American economist J.B.Clark.

According to him, profit is the difference between price and cost of production of the commodity. Hence, profit is the reward for dynamic changes in society. Further he points out that, profit cannot arise in a static society. At present several changes are taking place in a dynamic society. Changes are permanent.

According to Clark, the following five main changes are taking place in a dynamic society.

- Population is increasing
- Volume of Capital is increasing.
- Methods of production are improving.
- Forms of industrial organization are changing.
- The wants of consumer are multiplying.

## **INNOVATION THEORY OF PROFITS**

Innovation theory of profit was propounded by Josephs. A.Schumpeter.

According to him, an entrepreneur is not only an undertaker of a business, but also an innovator in the process of production. To him, profit is the reward for —innovation. Innovation means invention put into commercial practice.

An innovation may consist of the following:

- Introduction of a new product.
- Introduction of a new method of production.
- Opening up of a new market.
- Discovery of new raw materials
- Reorganization of an industry / firm.

#### THE RISK - BEARING THEORY OF PROFITS

Risk bearing theory of profit was propounded by the American economist F.B.Hawley. According to him, profit is the reward for -risk taking∥ in business. Risk taking is an essential function of the entrepreneur and is the basis of profit. It is a well-known fact that every business involves some risks.

Every entrepreneur produces goods in anticipation of demand. If his anticipation of demand is correct, then there will be profit and if it is incorrect, there will be loss. It is the profit that induces the entrepreneurs to undertake such risks.

## THE UNCERTAINITY-BEARING THEORY OF PROFITS

Uncertainty theory was propounded by the American economist Frank H.Knight. He distinguishes between -insurable and -non-insurable risks.

**Insurable Risks (Known Risk):** Certain risks are measurable or calculable. Some of the examples of these risks are the risk of fire, theft and natural disasters. Hence, they are insurable. Such risks are compensated by the Insurance Companies.

**Non-Insurable Risks (Unknown Risk):** There are some risks which are immeasurable or incalculable. The probability of their occurrence cannot be anticipated because of the presence of uncertainty in them. Some of the examples of these risks are competition, market condition, technology change and public policy. No Insurance Company can undertake these risks. Hence, they are non-insurable.

When an entrepreneur takes himself the burden of facing an uncertain event, he secures remuneration. That remuneration is -profit.