SYLLABUS

Class: - BBA I Year

Subject: - Micro Economics

UNIT I	Introduction to Economics, Definition of Economics, Nature and Scope of Economics, Significance and Evolution of Micro economics, Functions of Managerial Economics
UNIT II	Concept of Law of Demand, Law of Supply, Concept of Market Equilibrium, Elasticity of Demand, Demand determinants
UNIT III	Utility analysis, Marginal cost of utility, Indifference curve analysis, Assumption, Properties of Indifference curve, Theory of consumer surplus.
UNIT IV	Elements of cost, Factors of production, Theory of rent, Theory of interest, Theories of profit
UNIT V	National Income, Estimates and analysis (GDP, GNP, NNP, HDI), methods of measurement of National income, Types of market structure, Perfect v/s imperfect market, trade cycles.

UNIT –I

Introduction to Economics

-The standard definition for economics is the study of the production, distribution, and consumption of goods and services floating in the economy. This definition indicates that economics includes any business, nonprofit organization, or administrative unit. This subject presents economic concepts and principles from the perspective of "managerial economics," which is a subfield of economics. To the great dismay of economists - is merely a branch of psychology. It deals with individual behaviour and with mass behaviour. Many of its practitioners sought to disguise its nature as a social science by applying complex mathematics where common sense and direct experimentation would have yielded far better results.

This is not a realistic model - merely a useful approximation. According to this latter day - rational - version of the dismal science, people refrain from repeating their mistakes systematically. They seek to optimize their preferences. Altruism can be such a preference, as well. Still, many people are non-rational or only nearly rational in certain situations. And the definition of "self-interest" as the pursuit of the fulfillment of preferences is a tautology

In simple words, Economics means utilization of optimum resources. The word Economics derived from the Greek words "OIKOU" & "NOMUS", which means Rules or Law of the household. Economics is the Social Science that studies the Production, distribution & consumption of goods & services.

Basically, Economics deals with proper utilization of available scarce resources like manpower, money, raw materials & other resources which satisfy the wants of Social Animals.

Nature of Economics

- Is Economics a science or an art?
- Is Economics a positive or normative science?
- Is Economics a macro or micro Economics?

Economics as a science:-

For this first know what is science, "Science is a systematic & comprehensive study of knowledge which explains in cause & effective relation." is Economics is a science. For this two basic features are-

1. Argument in favour of Economics as a science.

Arguments in favour of Economics as a science: - Robbins considered Economics as a science.

The following arguments are given in favour of Economics as a science.

1) **Systematic study-** Collection, classification, & analysis of Economics facts are systematized in Economics. The subject matter of Economics is systematically divided into consumption, production, exchange, distribution, & public finance.

2) **Scientific Law-** Law of Economics is similar to the Law of other sciences. In Laws we establish cause & effective relationship of Economic activities. For E.g. the Law of demand shows the relationship between a change in demand & change in price.

3) **Experiments-** Economics carries several experiments with the laws of Economics. Different Economic laws have been experimented & tried to get out of Economics evils. For e.g. the devaluation of Indian rupee in 1955-66 was an economic experiment.

4) **Measuring rod of money-** Economists possess the measuring rod of money to measure the economic facts. Marshall said that the measuring rod of money has made Economics a more certain science than offer social sciences. Money is good measuring rod to measure individual as well as commercial motives.

5) **Universal-** Much of the Economic laws is universally true. They are applicable to all types of Economics. Whether it is a capitalist, socialist, or mixed Economy, the law of Economy is equally applicable.
6) On the basis of arguments given above, we can say that Economics is a science. It explores the facts, analysis them & classifies them.

Economics as an art:-

For this first know about what is art, Art is the practical application of knowledge of achieving definite ends.

According to "Lord J.N. Keynes"

"An art is a system of rules for the attainment of a given end." "A science teaches us to know, an art teaches us to do."

Economics as an art due to following reasons:-

1. Solution of problems- it can be helpful to human beings only, if it is able to solve their problems. Economics helps to utilize the scarce resources in the best possible ways. Prof. Pigou remarked in this context, "Economics is not only light-giving but also fruit-bearing."
2. Modern trends- Modern Economists are much concerned with solving the Economic problems. Prof. Stiglar said, "At least 90% of modern Economists spend over half of their time on applied or empirical subject." for this we can regard Economics as an art.
3. Verification of Economics law- Verification of Economics laws is possible only if Economics is an art because art is the practical application of knowledge. When we actually apply the Economics laws, only then we come to know that whether their results are true or false.From the arguments given below, we say that Economics is an art. Now days, Economic problem has become very popular & to formulate Economic plans is an art. Therefore we can conclude that Economics is a science as well as art.

Science & Art both are complementary to each other.

Macro-Economic Conditions & Micro-Economic analysis

1. Macro-Economic Condition- The decision of the firm are made almost always within the broad framework of environment within which the firm operates, known as macro-economic conditions. with regard these conditions, we may stress three points:

   a. The Economy in which the business is predominantly, a free enterprise economy using prices & market.
   b. The present day economy is the one undergoing rapid technological & economic changes.
   c. The intervention of government in economic affairs has increased in resent times & there is no likelihood that this intervention will stop in future. It can ignore neither the working of the market nor the place of economic change, nor the activities of government in the economic sphere. The management which keeps itself well & continuously informed of changes in the economic system is called progressive management.

2. Micro-Economic Analysis- The Micro-Economic analysis deals with the problem of an individual firm, industry, consumer, etc. in the case of Managerial Economics Micro-Economics helps in studying what is going on with in the firm, how best to use the available resources between various activities of the firm. It is also known as price theory.
   The concept of Micro-Economics are the elasticity of demand, marginal costs, the long-run economics, & diseconomies of scale, opportunity costs, present value, & market structures.

Micro environment	Macro environment
1. Micro Environment or Internal Environment refers to the forces operating in the market that are close or within the enterprise or firm and affect its ability to serve its customers directly.	1. Macro environment refers to all forces that are part of the larger society and are the "uncontrollable" to which companies mould itself through setting the "controllable" factors.
2. It comprises of producer/seller customer, competitors, suppliers marketing intermediaries.	2. Macro environment comprises demographic forces, economic forces, technological forces, political forces, natural forces, cultural forces.
3. These are uncontrollable for a firm.	3. These are controllable for a firm.
4. It includes concepts such as demography, economy, natural forces, technology, politics, and culture.	4. This includes all departments, such as management, finance, research and development, purchasing, operations and accounting.

Positive V/s Normative approach

Positive approach concern with **WHAT IS, WAS OR WILL BE**, while Normative approach concern with **WHAT OUGHT TO BE**.

The statement 'a government deficit will reduce unemployment & cause an increase in prices' is hypothesis in positive economics, while the statement 'in setting policy, unemployment ought to matter more than inflation' is a normative hypothesis.

Positive Economics is of two types:

a. Description.
b. Theory.

The Positive Economics theory, on the other hand attempt to developed hypothesis which explain why it happened.

The Normative Micro-Economics, one is concerned with problems like what the objectives & policies of business ought to be & how to go about them. Managerial Economics is concern with analysis which is prescriptive or normative in nature.

Positive and Normative Statements

In this brief note we introduce you to the idea of positive and normative statements and the idea of value judgments contained in statements and articles.

Detecting Bias in Arguments

Whenever you are reading articles on current affairs it is important to be able to distinguish where possible between objective and subjective statements. Very often the person writing an article has a particular argument to make and will include in their piece subjective statements about what ought to be or what should be happening. Their articles are said to carry value judgments, they are trying to persuade you of the particular merits or demerits of a particular policy decision or issues. These articles may be lacking in objectivity.

Positive Statements

Positive statements are objective statements that can be tested or rejected by referring to the available evidence. Positive economics deals with objective explanation and the testing and rejection of theories. For example:

1. A rise in consumer incomes will lead to a rise in the demand for new cars.
2. A fall in the exchange rate will lead to an increase in exports overseas.
3. More competition in markets can lead to lower prices for consumers.
4. If the government raises the tax on beer, this will lead to a fall in profits of the brewers.
5. A reduction in income tax will improve the incentives of the unemployed to search for work.
6. A rise in average temperatures will increase the demand for chicken.
7. Poverty in the UK has increased because of the fast growth of executive pay.

Normative Statements

Normative statements express an opinion about what ought to be. They are subjective statements rather than objective statements – i.e. they carry value judgments. For example:

1. The level of duty on petrol is too unfair and unfairly penalizes motorists.
2. The London congestion charge for drivers of petrol-guzzling cars should increase to £25 - three times the current charge.
3. The government should increase the national minimum wage to £6 per hour in order to reduce relative poverty.
4. The government is right to introduce a ban on smoking in public places.
5. The retirement age should be raised to 75 to combat the effects of our ageing population.
6. The government ought to provide financial subsidies to companies manufacturing and developing wind farm technology.

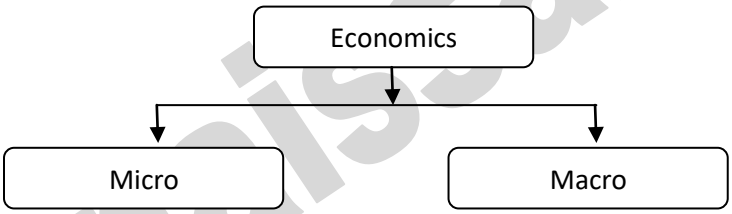
Practical uses of Economics

The main points of practical uses are discussed below –

1. Useful to the Consumer
2. Useful to the Producer
3. Helpful to Business Community

4. Solution to Economic Problems
5. Helpful to Workers
6. Helpful in Price Determination
7. Significant for Economics Development
8. Useful for Economic Planning
9. Useful for Social Workers
10. Helpful to Social Welfare Activities
11. Helpful in international Trade.

In short economics is useful for all.



Definitions of Micro Economics

Different economists have defined micro economics as under –

According to A.P. Lerner – "Micro economics consists of looking at the economy through a microscope, as it were, to see how the millions of cells in the body of the individuals, or households as consumers, and the individuals or firms as producers-play their parts in the working of the whole economic organism."

According to K.E. Boulding – 'Micro economics is the study of particular firms, particular households, individual prices, wages, incomes, individual industries and particular commodities."

According to Shapiro – "Micro economics deals with small parts of the economy.

In every society, the economic problems faced by different economic agents (such as individual consumers, producers, etc.) can be analyzed with the help of microeconomic theories. This shows that **economics is a social science** which aims at analyzing the economic behavior of individuals in a social environment.

Importance/Usefulness of Microeconomics

1. **Determination of demand pattern:** It determines the pattern of demand in the economy, *i.e.,* the amounts of the demand for the different goods and services in the economy, because the total demand for a good or service is the sum total of the demands of all the individuals. Thus, by determining the demand patterns of every individual or family, microeconomics determines the demand pattern in the country as a whole.
2. **Determination of the pattern of supply:** In a similar way, the pattern of supply in the country as a whole can be obtained from the amounts of goods and services produced by the firms in the economy. Microeconomics, therefore, determines the pattern of supply as well.
3. **Pricing:** Probably the most important economic question is the one of price determination. The prices of the various goods and services determine the pattern of resource allocation in the

economy. The prices, in turn, are determined by the interaction of the forces of demand and supply of the goods and services. By determining demand and supply,
Microeconomics helps us in understanding the process of price determination and, hence, the process of determination of resource allocation in a society.

4. **Policies for improvement of resource allocation:** As is well-known, economic development stresses the need for improving the pattern of resource allocation in the country. Development polices, therefore, can be formulated only if we understand how the pattern of resource allocation is determined. For instance, if we want to analyze how a tax or a subsidy will affect the use of the scarce resources in the economy, we have to know how these will affect their prices. By explaining prices and, hence, the pattern of resource allocation, microeconomics helps us to formulate appropriate development policies for an underdeveloped economy.

5. **Solution to the problems of micro-units:** Since the study of microeconomics starts with the individual consumers and producers, policies for the correction of any wrong decisions at the micro-level are also facilitated by microeconomics. For example, if a firm has to know exactly what it should do in order to run efficiently, it has to know the optimal quantities of outputs produced and of inputs purchased. Only then can any deviation from these optimal levels be corrected. In this sense, microeconomics helps the formulation of policies at the micro-level.

Limitations of Microeconomics

However, microeconomics has its limitations as well:

1. **Monetary and fiscal policies:** Although total demand and total supply in the economy is the sum of individual demands and individual supplies respectively, the total economic picture of the country cannot always be understood in this simplistic way. There are many factors affecting the total economic system, which are outside the scope of Microeconomics. For example, the role of monetary and fiscal policies in the determination of the economic variables cannot be analyzed completely without going beyond microeconomics.

2. **Income determination:** Microeconomics also does not tell us anything about how the income of a country (*i.e.,* national income) is determined.

3. **Business cycles:** A related point is that, it does not analyze the causes of fluctuations in national income. The ups-and-downs of national income over time are known as business cycles. Microeconomics does not help us in understanding as to why these cycles occur and what the remedies are.

4. **Unemployment:** One of the main economic problems faced by an economy like India is the problem of unemployment. This, again, is one of the areas on which microeconomics does not shed much light. Because, if we are to find a solution to the unemployment problem, we must first understand the causes of this problem. For that, in turn, we must understand how the total employment level in the economy is determined. This is difficult to understand from within the confines of microeconomics.

Managerial economics

Sometimes referred to as business economics, is a branch of economics that applies microeconomic analysis to decision methods of businesses or other management units.The purpose of managerial economics is to provide economic terminology and reasoning for the

improvement of managerial decisions. Most of us are familiar with two different conceptual approaches to the study of economics: microeconomics and macroeconomics. Microeconomics studies phenomena related to goods and services from the perspective of individual decision-making entities—that is, households and businesses. Macroeconomics approaches the same phenomena at an aggregate level, for example, the total consumption and production of a region. Microeconomics and macroeconomics each have their merits. The microeconomic approach is essential for understanding the behavior of atomic entities in an economy. However, understanding the systematic interaction of the many households and businesses would be too complex to derive from descriptions of the individual units. The macroeconomic approach provides measures and theories to understand the overall systematic behavior of an economy. Since the purpose of managerial economics is to apply economics for the improvement of managerial decisions in an organization, most of the subject material in managerial economics has a microeconomic focus. However, since managers must consider the state of their environment in making decisions and the environment includes the overall economy, an understanding of how to interpret and forecast macroeconomic measures is useful in making managerial decisions.

Economics is the combination of three different activities:-

1. **MONEY;**
2. **WEALTH (ASSETS);**
3. **GOODWILL;**

"Economics is an enquiry into nature & cause of wealth in nation."

"Adam Smith"

"Economics is the study of mankind in the ordinary business of life. It examines that part of individual or social action which is closely connected with the attainment & use of material requisite of well being."

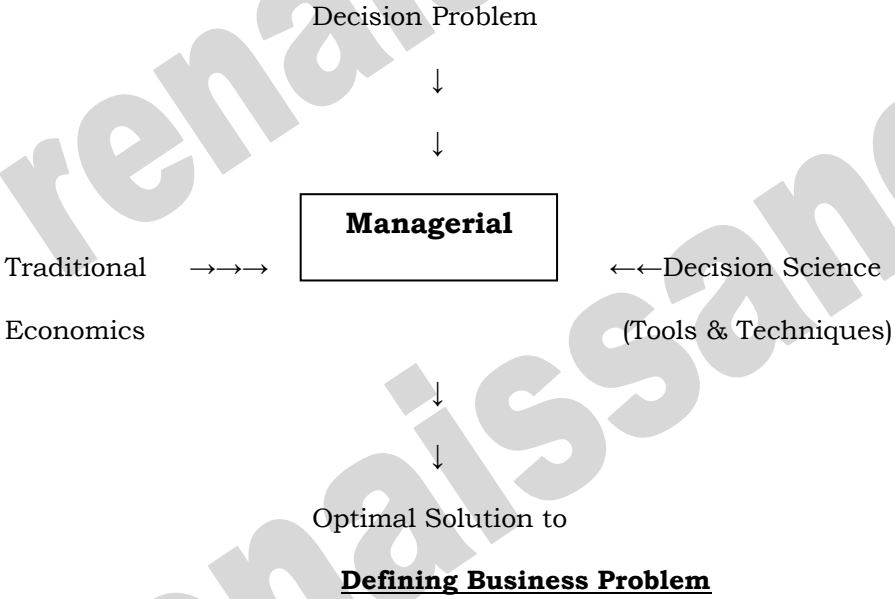
"**Marshall**"

Managerial Economics = Management + Economics

Management deals with principles which helps in decision making under uncertainty and improves effectiveness of the organization. On the other hand economics provide a set of preposition for optimum allocation of scarce resources to achieve a desired result. Managerial

Economics deals with the integration of economic theory with business practices for the purpose of facilitating decision making and forward planning by management. Almost any business decision can be analyzed with managerial economics techniques, but it is most commonly applied to:

- **Risk analysis** - various models are used to quantify risk and asymmetric information and to employ them in decision rules to manage risk.
- **Production analysis** - microeconomic techniques are used to analyze production efficiency, optimum factor allocation, costs, economies of scale and to estimate the firm's cost function.
- **Pricing analysis** - microeconomic techniques are used to analyze various pricing decisions including transfer pricing, joint product pricing, price discrimination, price elasticity estimations, and choosing the optimum pricing method.
- **Capital budgeting** - Investment theory is used to examine a firm's capital purchasing decisions.



At universities, the subject is taught primarily to advanced undergrads. It is approached as an integration subject. That is, it integrates many concepts from a wide variety of prerequisite courses. In many countries it is possible to read for a degree in Business Economics which often covers managerial economics, financial economics, game theory, business forecasting and industrial economics.
Managerial Economics is a tool which is help to solve the Business problems. It is totally practical approach over pure Economics.

Managerial Economics is an Economic applied to problems of choice of alternatives of Economic nature & allocation of scarce resources by the firm. In other words, Managerial Economics involves analysis of allocation of the resources available to a firm.

Managerial Economics is the Economics applied in the decision making. It is that branch of Economics which serves as a link between abstract theory & managerial practice.

1. "Managerial Economics is the use of Economic modes of thoughts to analyze business problem."

   "McNair & Meriam"

2. "Managerial Economics as, "price theory in the service of business executives."

   "Watson"

3. "The application of Economic theory & methodology to business practice."

   "Brigham & Pappas"

4. "Managerial Economics as, "a fundamental academic subject which seek to understand & to analyze problem of business decision making". "Hague"

Scope of Managerial Economics

Managerial Economics has a closed connection with economic theory, operation research, statistics, mathematics, & the theory of decision-making. Managerial Economics also draws together & relates ideas from various functional areas of management like production, marketing, finance & accounting, project management etc.

In so for as Managerial Economics is concern, the following aspects constitutes its subject matter

1. Objective of a Business firm
2. Demand analysis & demand forecasting
3. Production & cost
4. Competition
5. Pricing & output
6. Profit
7. Investment & capital budgeting cost

8. Product policy, sales promotion & market strategy

Well scope is something which tells us how far a particular subject will go. As far as Managerial Economic is concerned it is very wide in scope. It takes into account almost all the problems and areas of manager and the firm.

ME deals with Demand analysis, Forecasting, Production function, Cost analysis, Inventory Management, Advertising, Pricing System, Resource allocation etc.

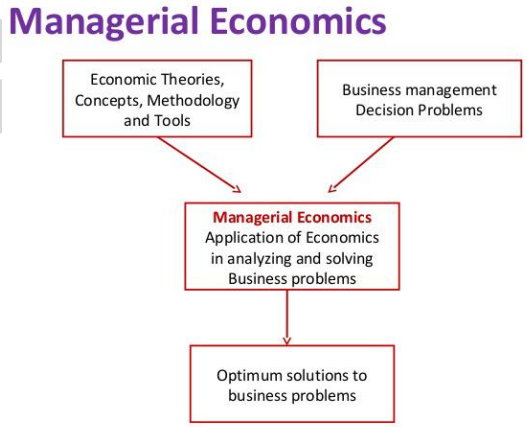
Following aspects are to be taken into account while knowing the scope of ME:

1. **Objective of the Business Firm:** As we know that Economics is playing very essential role for the business. It is first used for the Setting up of the objectives of a organization or business. The objective may be Business Expansion, Increase Sales, New technology adoption etc. or some time as per the change in government policy it help us to set the business objective as per the availability of the resources.
2. **Demand Analysis and Forecasting**: Unless and until knowing the demand for a product how can we think of producing that product. Therefore demand analysis is something which is necessary for the production function to happen. Demand analysis helps in analyzing the various types of demand which enables the manager to arrive at reasonable estimates of demand for product of his company. Managers not only assess the current demand but he has to take into account the future demand also.
3. **Production and Cost function:** Conversion of inputs into outputs is known as production function. With limited resources we have to make the alternative uses of this limited resource. Factor of production called as inputs is combined in a particular way to get the maximum output. When the price of input rises the firm is forced to work out a combination of inputs to ensure the least cost combination. Cost analysis is helpful in understanding the cost of a particular product. It takes into account all the costs incurred while producing a particular product. Under cost analysis we will take into account determinants of costs, method of estimating costs, the relationship between cost and output, the forecast of the cost, profit, these terms are very vital to any firm or business.
4. **Competition:** As per the Market situation a business has to face many tough competition from the market in terms of Perfect Competition, Monopolistic Competition, Duopoly or Oligopoly etc. as a Businessman you must know what kind of competition you are facing with the world and what are the different solution for the same. Because this is the world of competition and it has to be faced with all the possible options.
5. **Pricing and Output:** After knowing the competition, and type of it, it is must to set the price of the products or services which has to be offered in the market. It is very necessary to set a price of the commodity and its output, where the cost will be minimum and sufficient output at a required profit margin can be achieved. Economics help to decide the Pricing and output for the organization. Here pricing refers to the pricing of a product. As you all know that pricing system as a concept was developed by economics and it is widely used in managerial economics. Pricing is also one of the central functions of an enterprise. While pricing commodity the cost of production has to be taken into account, but a complete knowledge of the price system is quite essential to determine the price. It is also important to understand how product has to be priced under different kinds of competition, for different markets.
6. **Pricing :** cost plus pricing and the policies of the enterprise Now it is clear that the price system touches the several aspects of managerial economics and helps managers to take valid and profitable decisions.

7. **Profit:** Every organization is working for Profit. To decide the profit margin and the net amount of profit economics helps better. At last every one as a firm need to earn profit but profit is depends on the Competition and pricing of the firm. Economics also helps in this to determine the profit level.
8. **Investment decision and capital budgeting:** Some time firm to invest again for the business expansion and diversification. To take the decision whether to invest or not, Economics help to decision maker to take decision. Capital Budgeting is a technique to determine whether to invest or not.

9. **Product policy, sales promotion & market strategy:** As per the Situation firm take decision regarding Product mix, sales promotion in the market and the best possible market strategy. Again to decide all of these, economics will help to firm to take decision.
10. **After Inventory Management:** What do you mean by the term inventory? Well the actual meaning of the term inventory is stock. It refers to stock of raw materials which a firm keeps. Now here the question arises how much of the inventory is ideal stock. Both the high inventory and low inventory is not good for the firm. Managerial economics will use such methods as ABC Analysis, simple simulation exercises, and some mathematical models, to minimize inventory cost. It also helps in inventory controlling.
11. **Advertising:** Advertising is a promotional activity. In advertising while the copy, illustrations, etc., are the responsibility of those who get it ready for the press, the problem of cost, the methods of determining the total advertisement costs and budget, the measuring of the economic effects of advertising ---- are the problems of the manager.
    a. There's a vast difference between producing a product and marketing it.
    b. It is through advertising only that the message about the product should reach the consumer before he thinks to buy it.
    c. Advertising forms the integral part of decision making and forward planning.

12. **Resource allocation:** Resources are allocated according to the needs only to achieve the level of optimization. As we all know that we have scarce resources, and unlimited needs. We have to make the alternate use of the available resources. For the allocation of the resources various advanced tools such as linear programming are used to arrive at the best course of action.



Role of Managerial Economist

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

The role of managerial economist can be summarized as follows:

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

Relationships between Managerial Economics & Other Subjects

1. Managerial Economics & Traditional Economics- The relationships between M.E. & T.E. starts with the basic concepts that both of them are related or concern with solving the problem of allocation of limited resources between competing ends. the two main contributions to M.E. are:

   a. To help in understanding the market conditions & the general economic environment within which the firm operates.
   b. To provide a philosophy for understanding & analyzing resources- allocation problems. Managerial Economics takes help of Economics analysis for achieving both T.E. & M.E. efficiency in the business operations. The firm maximizes its goal by producing maximum output at minimum cost is Managerial Economics efficiency. The production is carried out to the best of technological specification is Traditional Economics efficiency.

2. Managerial Economics & Operation Research- Both M.E. & O.R. are concern with taking effective decisions. M.E. & O.R. are both concerned with model-building.
   Models are generalized & scientifically analyzed relationship between various factors relevant in a specified kind of situations. Economic models are more general & confined to broad economic decision-making. whereas O.R. models on the other hand, draw from various disciplines & are more job-oriented, through situational O.R. is both expensive as well as a very slow process compare to M.E. the significant relationship between M.E. & O.R. can be highlighted with reference to certain important problems of M.E. which are solved with the help of O.R. techniques. The problems are equal allocation problems, waiting-line problems & inventory problems.

3. M.E. & Mathematics- Mathematics & M.E. are very closely related to each other. This is because M.E. is both conceptual as well as metrical. It drives its metrical property from the fact that an important function M.E. is to estimate & predict the relevant economic factors for decision-making & forward planning.

4. M.E. & Statistics- Statistics is widely used by Managerial Economists. M.E. aims at quantifying the past economic activity as well as to predict its future course. This is the way where Statistics is used in M.E. Managerial Economics heavily depending upon the theory of probability to take care of various problems in decision-making.

5. M.E. & the Theory of Decision-Making- M.E. is based on the assumption of a single goal of profit maximization & on the assumption of certainty, i.e., perfect knowledge. The theory of decision-making recognizes the multiplicity of goals & the pervasiveness of uncertainty in the business. In complex problem with multiple goals & high degree of uncertainty & where decisions are to be taken quickly, the theory of decision-making guides M.E.

Features of Managerial Economics

- Managerial Economics concern with decision making of Economic nature. It deals with identification of Economic choices & allocation of scarce resources.
- It is goal oriented & prescriptive. It deals with how decisions should be made by managers to achieve the organizational goals.
- It is pragmatic. It is concern with those analytical tools which are useful in improving decision making.
- It is both conceptual & metrical.
- Managerial Economics provide a link between Traditional Economics & the Decision Science, for Managerial decision making, as shown in figure:-

Characteristics of ME

- Managerial Economics is micro-economic in character as it concentrates only on the study of firm & not on the working of economy.
- Managerial Economics takes the help of macro-economics to understand & adjust to the environment in which the firm operates.
- Managerial Economics is Normative rather than Positive character.
- It is only for the analysis of profits that help is taken of the theory of distribution.

Significance of Managerial Economics

1. In order to enable the manager to become a more competent model builder, Managerial Economics provides the no. of tools & techniques.
2. Managerial Economics provides most of the concepts that are needed for the analysis of business problems, concept of elasticity of demand, fixed & variable costs, short & long-run costs, opportunity costs, net present value, etc. all helps in understanding & solving decision problems.
3. It helps in making decision such as- what is the production technique & the input-mix that is least costly? How to tale investment decision? & so on…

UNIT II

DEMAND ANALYSIS

Meaning and Definition of Demand: -

The demand may arise from an individual, a household as well as a market.

As we have indicated earlier, 'demand' is a technical concept from Economics. Demand for product implies:

a) Desires to acquire it,

b) Willingness to pay for it, and

c) Ability to pay for it.

All three must be checked to identify and establish demand**. For example** : A poor man's desires to **stay in a five-star hotel room** and his willingness to pay rent for that room is not 'demand', because he lacks the necessary purchasing power; so it is merely his wishful thinking. Similarly, a miser's desire for and his ability to pay for a car is not 'demand', because he does not have the necessary willingness to pay for a car. One may also come across a well-established person who processes both the willingness and the ability to pay for higher education. But he has really no desire to have it; he pays the fees for a regular cause, and eventually does not attend his classes. It should also be noted that the demand for a product–-a commodity or a service–has no meaning unless it is stated with **specific reference to the time, its price, price of is related goods**, **consumers' income and tastes etc**.

Difference between NEED, WANT and DEMAND

Need	Basic necessity Feel deprived if this is absent	Food
Want	Given choices, this is what you prefer	Chicken, Burger, Steak dinner
Demand	A want that is supported by a decision and capacity to buy	Only burger is within my budget!

Need: Human needs are the basic requirements and include food, clothing and shelter. Without these humans cannot survive. An extended part of needs today has become education and healthcare. Generally, the products which fall under the needs category of products do not require a push.

Instead the customer buys it themselves. But in today's tough and competitive world, so many brands have come up with the same offering satisfying the needs of the customer that even the "needs category product" has to be pushed in the customer's mind. For Example: Agriculture sector, FMCG, Real Estate etc.

Wants: Wants are a step ahead of needs and are largely dependent on the needs of humans themselves. For example, you need to take a bath. But I'm sure you take baths with the best soaps. Thus Wants are not mandatory part of life. You DONT need a good smelling soap. But you will definitely use it because it is your want. For example: Hospitality, Consumer Durables, and Electronics etc.

Demand: You might want a BMW or a Mercedes for a car. You might want to go for a cruise. But can you actually buy a BMW or go on a cruise? It is not necessary that you have the *ability* to buy a BMW or go on a cruise but you may want that in future. Thus a step ahead of wants is demand.

When an individual wants something which is premium, but he also has the ability to buy it, then these wants are converted to demands. The basic difference between wants and demands is desire. A customer may desire something but he may not be able to fulfill his desire.

Example of demands – Cruises, BMW's, 5 star hotels etc.

The needs wants and demands are a very important component of marketing because they help the marketer decide the products which he needs to offer in the market. Thus the flow is like this.

To say that demand for an Atlas cycle in India is 60,000 is not meaningful unless it is stated in terms of the year, say 1983 when an Atlas cycle's price was around Rs. 800, competing cycle's prices were around the same, a scooter's prices was around Rs. 5,000. In 1984, the demand for an Atlas cycle could be different if any of the above factors happened to be different. For example, instead of domestic (Indian), market, one may be interested in foreign (abroad) market as well. Naturally the demand estimate will be different. Furthermore, it should be noted that a commodity is defined with reference to its particular quality/brand; if its quality/brand changes, it can be deemed as another commodity.

To sum up, we can say that the **Demand for a product is the desire for that product backed by willingness as well as ability to pay for it. It is always defined with reference to a particular time, place, and price and given values of other variables on which it depends**.

Demand for a commodity refers to the quantity of the commodity, which an individual household is willing to purchase per unit of time at a particular price.

1. **Individual Demand** : - It is demand by one or more Individual e.g. Cigarettes, Footwear etc.
2. **House Holds (H.H.)** : - Demand by H.H. e.g.: Refrigerator.
3. **Market Demand** : - When we consider the demand for a commodity by all the Individuals/Households in the market at a price, we call it Market Demand.

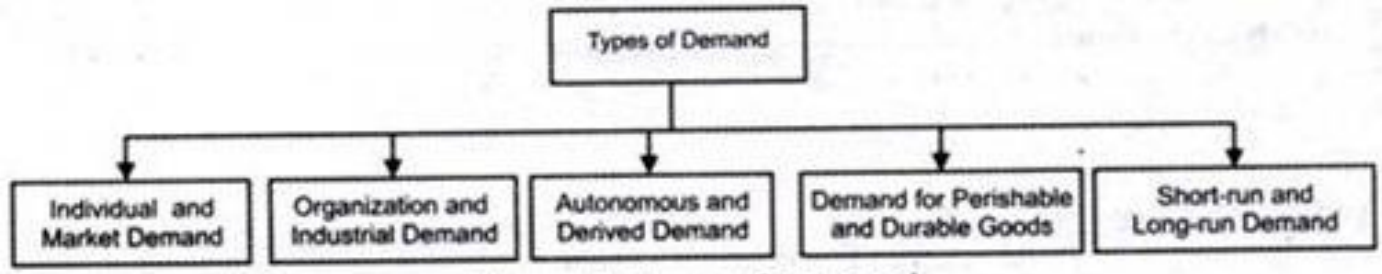


Figure-1: Types of Demand

Demand and Quantity Demanded

Demand refers to different possible quantities of a commodity that the consumer is ready to buy at different possible price of that commodity prevailing in the market at a given point of time.

Quantity demanded refers to a specific quantity to be purchased against a specific price of the commodity.

For Example: Demand of commodity X refers to 10 units of X if Px is Rs 5/-per unit, 8 units of X if Px is Rs 6 per unit of X if Px is Rs 7/- per unit. Quantity demanded of commodity X refers to Rs 8/- per unit if Px happens to be Rs 6 per unit.

Factors Affecting Demand or Determinants of Demand

The desire to purchase is revealed by taste and preference of the individuals/households. The capability to purchase depends upon his purchasing power, which in turn depends upon his income and price of the commodity.

a) **Price of the Commodity**: - Effect of price on commodity even that the other determinants of demand is constant. There are two effects:

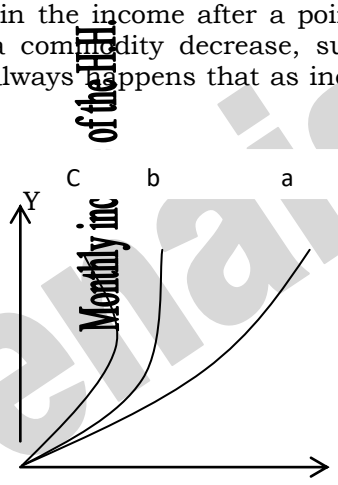
1. The substitutes effect
2. The Income effect

I) **The Substitutes Effects:** - Substitutes effect the decrease in the price of commodity x, leaves the consumer with additional income which he can use in buying more amount of x, rather than its substitute y. This increasing the demand of commodity x. For e.g.: x= tea and y=coffee. If increasing in the price of the commodity x or tea, then the substitute y or coffee demand is increasing and vice-verse.

II) **Income Effect: -** It is the increase in the real income or the purchasing power of a consumer due to the decrease in the price of commodity x.

b) **Income of Individual or Consumer and Household**: - The amount demanded of a commodity also depends upon the income of a household/individual. Income of individual or consumer can have three effects:

- An increase in the income usually increases the amount of consumption of regular goods and other factors remaining constant. Generally **Luxury Goods** are the Goods which have the same nature. As Income of the consumer increase then they purchase luxury goods more and more.
- Increase in income may need to increase in the consumption and thus the demand of certain commodity remains unchanged. In these category goods like **FMCG and Necessity goods** take place. According to this concept demand increase up to a certain limit then become constant.
- An increase in the income after a point may decrease the consumption and thus the demand of a commodity decrease, such a commodity is known as **Inferior Goods**. Normally it always happens that as income increase demand of some product becomes negative.



Units demanded of good x per day

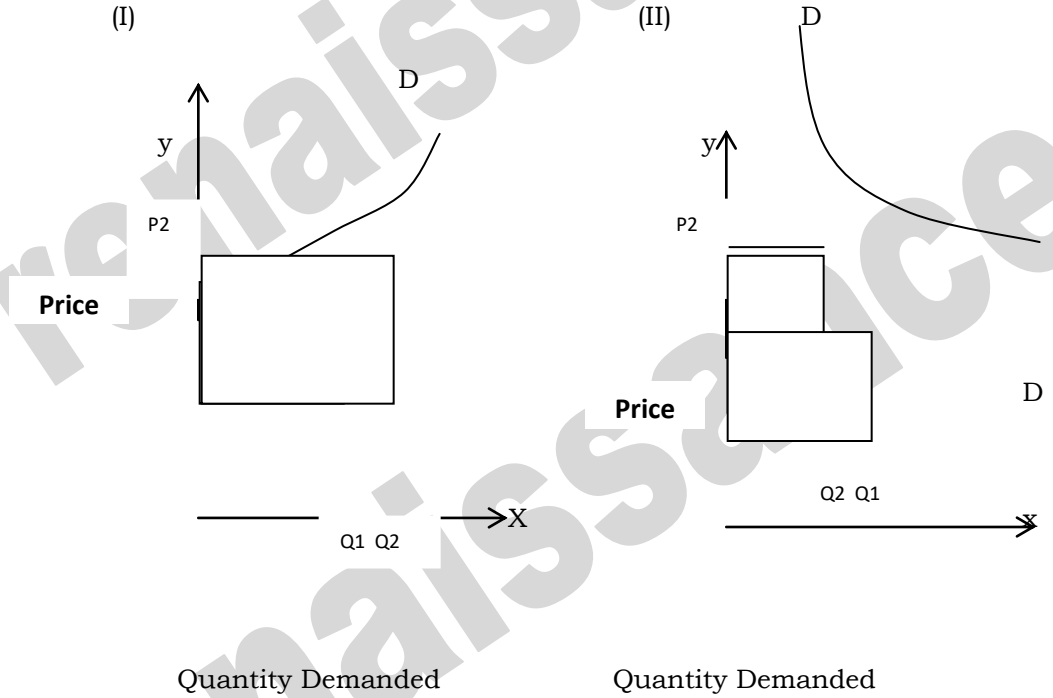
Engel was the first person to study the relationship between income and quantity demanded for the normal and inferior gods.

C] **Price of related goods: -** There are two types of relation between goods.

1st Substitute and 2nd Complimentary.

i. Substitute: - These are the goods which have same effect – as price increase of the first commodity; it results in increase in demand of other commodity. **For ex**: Apple and Pears, Tea and Coffee. Price of Tea increases and demand of Coffee also increase.

ii. Complementary: - These are those goods which have adverse effect on the demand of the commodity. The increases in the price of the first commodity decrease the demand of the other quantity or commodity. **For exp: -** Bread and Butter, Pen and Ink, Tea and Sugar.



Quantity Demanded Quantity Demanded

I. Amount demanded of coffee per week [I Substitute goods case]

II. Amount demanded of butter per day [II Complementary goods case]

D] **Taste and Preference: -** Taste and Preference, if changes in the consumer favors, the demand of commodity increase and vise versa. For e.g.: Jeans will have greater demand now, because of the preference of the consumer. Taste also play important role to change in the demand of the commodity because of the new choice of the consumer. No. of examples are considered for the taste and preference of the consumer like Food articles, dressing sense, luxury products etc.

E] **Advertisement: -** More advertisement creates favorable taste and preference for the demand of a commodity. In present scenario higher the advertising, higher the demand for the product. Every company has to use this concept or philosophies. In present Insurance and banking firm also has great advertising so they can capture more market shares.

F] **Expectations: -** The consumer makes two kinds of expectation:

a. Related to their future income.
b. Related to future price of the good and its related goods.

a. **Related to their future income: -** If the consumer feels that his future income will be more, he will spent more today. Whereas if he feels that his income will be less in the future, he would spend less today and so the demand will decrease. Income of the consumer x demand today in future. Recently in all over the world recession becomes big problem, in this situation, persons who find that their income will cut down, they stop consuming luxury goods. In recent survey, higher society persons sell their luxury hotels or Ship to survive.

b. **Related to future price of the goods and its related goods: -** If the consumer feels that the price of goods is going to increase in the future, they will buy more of it today, thus increasing the demand of the commodity. And if they feel that price will decrease tomorrow, then they postponed their demand right now.

G] Population:

H] Government Policy:

I] Others

Demand Schedule

Demand schedule is a table showing relation between different quantities of a commodity to be purchased at different prices of that commodity. **SAMUELSON** state this as "The table relating to price and quantity demanded is called the demand schedule."

This could be of two major types – Individual Demand Schedule and Market Demand Schedule\

Individual Demand Schedule

Px (Price of Goods)	Qx (Quantity of Goods Demanded)
1	4
2	3
3	2
4	1

It refers to the demand schedule of an individual buyer for a commodity at different possible prices at a given point of time. This table reflects the inverse relationship between price of the commodity and the quantity demanded for the same at a given point of time.

Market Demand Schedule

Px (Price of Good X)	Qx (Consumer A)	Qx (Consumer B)	Qx (Consumer A+ B)
1	4	5	4+5=9
2	3	4	3+4=7
3	2	3	2+3=5
4	1	2	1+2=3

Every market has several consumers of a commodity at a given point of time. This table shows the quantity demanded for Goods X by consumer A and B at different price levels.

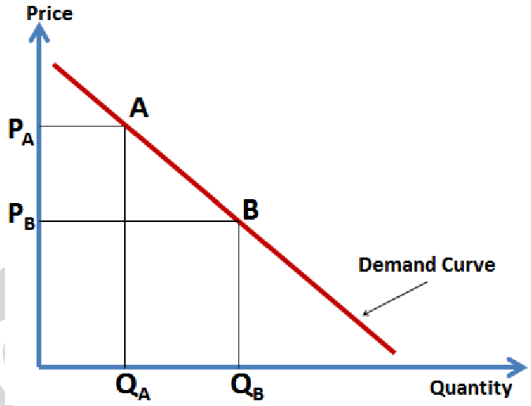
THE LAW OF DEMAND

The law of demand states that other things being constant, there is an inverse relationship between quantities demanded and own price of the commodity.

Explanation

Px (Rs)	Qx (Units)

10	100
9	150
8	200



Nature of Demand

1. Derived demand & autonomous demand.
2. Demand for producer's goods and consumer goods.
3. Demand for durable goods and non durable goods.
4. Industry demand and firm demand.
5. Total demand and market segment demand.
6. Short run and long run demand.

1. Derived demand & autonomous demand: - derived demand means a demand which is created because to produce other commodities or the commodities which are helpful to produce other products. For ex. Machinery, labour, raw material etc. are the example which is demanded as per requirement.
   Autonomous demand is just reverse of derived demand where demand is already exist due to its direct consumption. For ex. Demand for food is direct demand or autonomous demand because it can consume directly by a person or a group of persons.

   In practical there is no distinction between derived and autonomous demand because for same product may be derived demand but the same product can be autonomous demand for other. The autonomous demand is more elastic in nature then the derived demand. It is because derived demand not influences the price effect on others.

2. Demand for producer goods & consumer goods: - producer goods are those goods which are used by a producer for further production e.g. raw material, machinery, semi finished goods and other material.
   In general sense consumer goods demand is more elastic in nature as compare to the producer goods.

   Consumer goods are those goods which are directly consumed by the consumers. E.g. milk, bread and any other product which dire3ctly satisfy the needs of consumers.

3. Demand for durable goods and non durable goods :-As we know that durable goods are those goods which can be store for a long time as well as the demand can be postponed, if it is not required immediately or urgently e.g. machinery, household appliances, books etc are the durable goods.
   The non-durable goods are those which have short life. It is also divided into two parts perishable and non-perishable.

   Demand of durable goods is more elastic in nature then the non durable goods because slight change in price will directly affect the overall demand of the product.

4. Industry demand and firm demand: - firm demand denotes the demand for the products of a particular firm for ex. Demand for steel produced by "TISCO" is a firm demand.
   In contrast to these if all the companies create demand of a particular product that produce similar product is called industry demand. For ex. Demand of steel by all the companies represent s demand of steel industry.

   The firm demand is more elastic in nature as compare to Industry demand. It is because every firm faces the competition with their competitors in the industry.

5. Total demand and market segment demand: - as the name suggests market segment demand is demand of a particular market where as total demand represents demand of whole market.
   For ex. A company has a product which is sold in whole India and the demand of that product is called total demand, but if the same product has different demand in different –different segment then this is called as market segment demand.

   Market segment demand is always more elastic then the total demand.

6. Short run & long run demand: - short run demand refers to demand with its immediate to price changes & income fluctuations where as long run demand is that which will ultimately exist as a result of the changes in pricing, promotion or a product

improvement other enough time is allowed to let the market adjust itself to the new situations.

Long run demand is more elastic than the short run demand.

ELASTICITY OF DEMAND

Elasticity of demand is defined as measurement of percentage changed in quantity demanded in response to a given percentage change in own price of the commodity.

$$E = \frac{\%\text{age change in quantity demanded of good x}}{\%\text{age change in determinant of demand z}}$$

$$\mathbf{E} = \frac{\triangle Q}{\triangle Z} \times \frac{Q1}{Z1}$$

E = Elasticity of demand

△ = To change

Q = to quantity demanded

Z = to a demand determinant

△ Q = Q2 – Q1

△ Z = Z2 – Z1

$$\mathbf{E} = \frac{Q2-Q1/Q1}{\quad}$$

Price Elasticity of Demand

The more the value of the E.O.D. the more responsive is the quantity demanded to changes in the determinant under consideration. Price E.O.D. is the determinant of relative responsiveness of quantity demanded to price of the commodity.

$$E = \frac{\%\text{age change in quantity demanded of good x}}{\quad}$$

%age change in price of commodity x

$$E = \frac{Q2-Q1/Q1}{}$$

$$E = \frac{Q}{\triangle} X \frac{P}{}$$

$\triangle Q = Q2 - Q1$

$\triangle P = P2 - P1$

Q1 and P1 are original quantity and price respectively

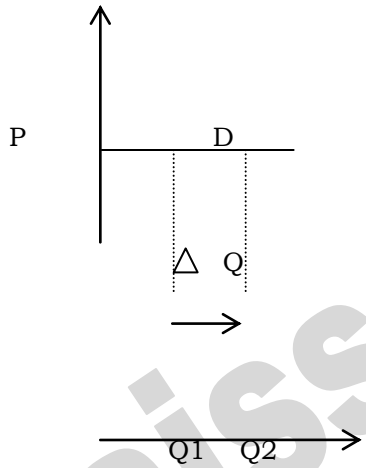
Q2 and P2 are the new quantity and price respectively.

Higher the elasticity of demand, greater will be the %age change in Quantity demanded for every %age change in price.

Since the elasticity of demand is linked to the law of demand, the coefficient of price elasticity of demand E, will always have a negatively sloping demand curve, in order to avoid confusion in interpretation only the absolute value of E is taken i.e. the sigh is ignored

Type of price elasticity

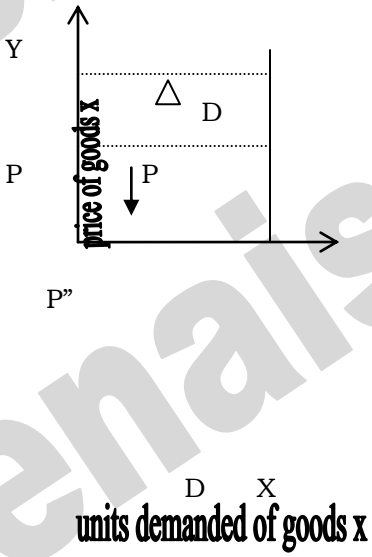
1. Perfectly elastic demand: - where no reduction in price is needed to cause an increase in quantity demand



Example: -

1. Petrol
2. Ice cream
3. Cloths

2. Absolutely (Perfectly) inelastic demand: - where a change in price, however large, causes no change in quantity demanded. (E=0)



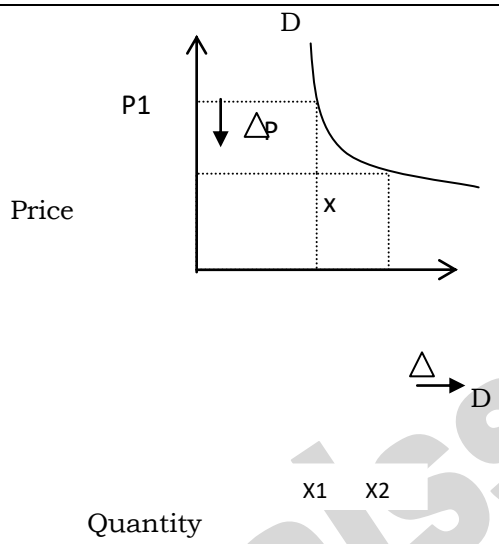
Example: -

1. Salt
2. Match box
3. Ink

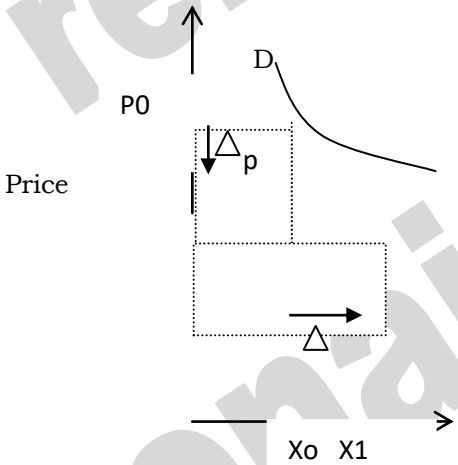
3. Unit Elasticity of demand: - Where a given proportionate change in price causes an equally proportionate change in quality demanded.
(E=1)

Example:-

5. Soap
6. Detergent
7. Tea
8. Milk



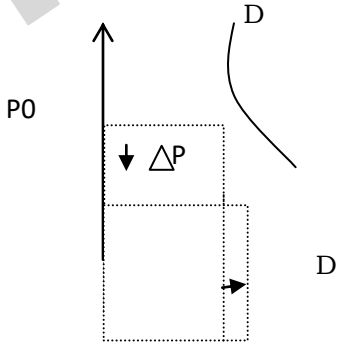
4. Relatively elastic demand quantity: - Where a change in price causes more than proportionate change in quantity demanded. (E>1)



Example: -

- Dry Fruits
- Bear
- Whiskey

5. Relatively inelasticity demand: - where a change in price causes a less than proportionate change in quantity demanded. (E<1)



Example:-

1. Cigarettes
2. Mobile
3. Vegetables

x △

⟶

Xo X1

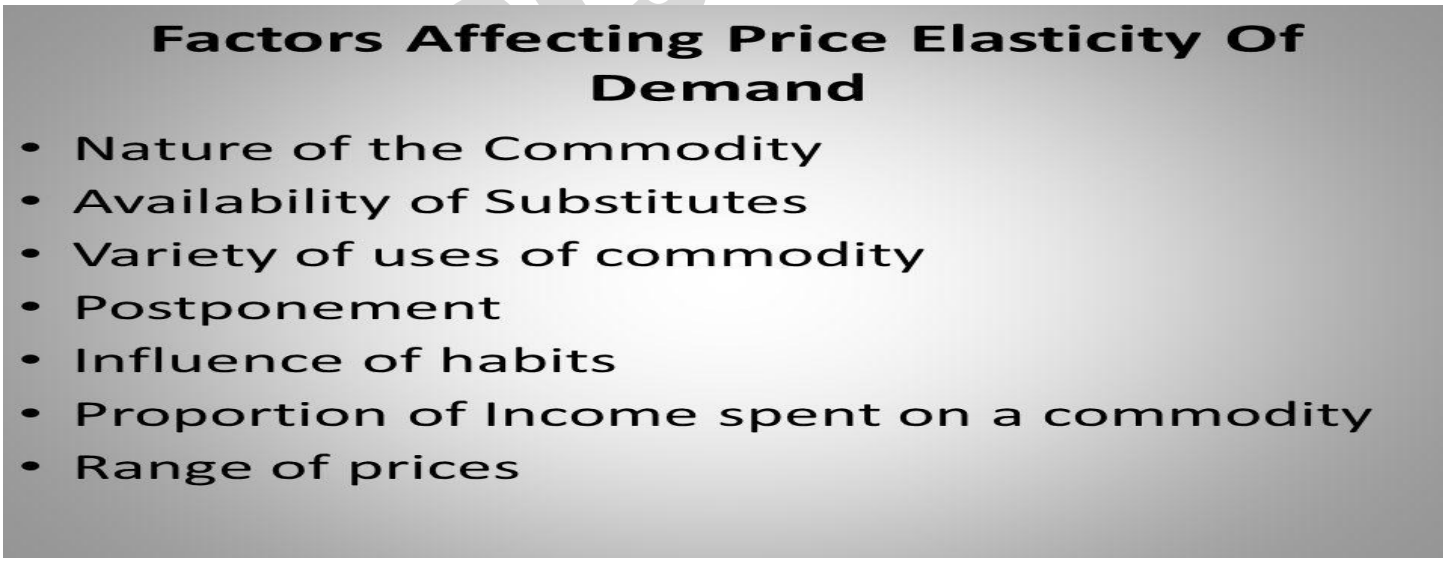
Factors affecting Price elasticity of demand

1. *The Number and Closeness of the Substitutes:* - The availabilities of close substitutes of the commodity are the most important determinant of the degree of price elasticity. In case the product has large no. of close substitutes in price range demand for the product is bound to be highly elastic.

   For e.g.: Demand for cigarettes will be inelastic because there are no close substitutes.

2. *The share of commodity in buyer's budget:* - if the proportion of consumer income, which is spent on the commodity, is very small, demand will tend to be in elastic. The commodities in the category are salt, match- boxes, ink etc.
3. *The nature of the commodity:* - the demand of necessities is inelastic, while these of luxuries are elastic.
4. *Number of uses a commodity can be put to:* - larger the number of user of a commodity, greater will be the elasticity of that commodity. The various uses of the commodity are put in the order of their importance.
5. *Habit-forming characteristics:* - there are some goods which are habit-forming like the use of tobacco and alcohol. Since the consumer forms a habit with their use the demand for such goods will tend to be inelastic.
6. *Time - Period:* - Time is very important in price elasticity of demand. Demand is more elastic in the long run than in the short run.

INCOME ELASTICITY OF DEMAND



It is for a commodity shows the extant to which a consumers demand for the commodity changes as a result of the change in his/her income.

Income elasticity of demand may be defined as a ratio of percentage change in the quality demanded of a good. Say x to the %age change in income of the consumer.

$$Ey = \frac{\%\text{age change in quantity demanded of good x}}{\%\text{age change in Income of Consumer}}$$

$$E \frac{Q}{\triangle} X \frac{\overline{Z1}}{\quad}$$

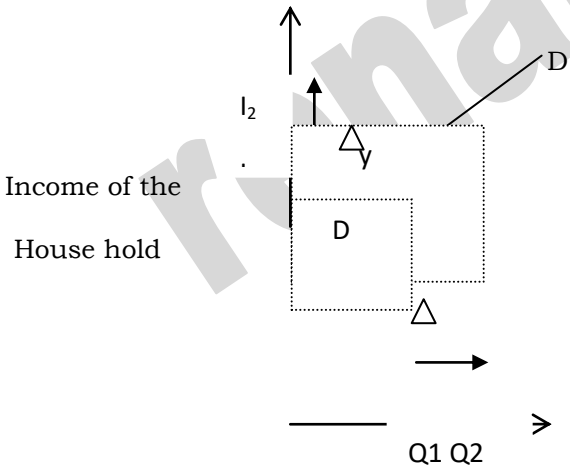
$\triangle Q$ = Q2 – Q1

$\triangle Z$ = Z2 – Z1

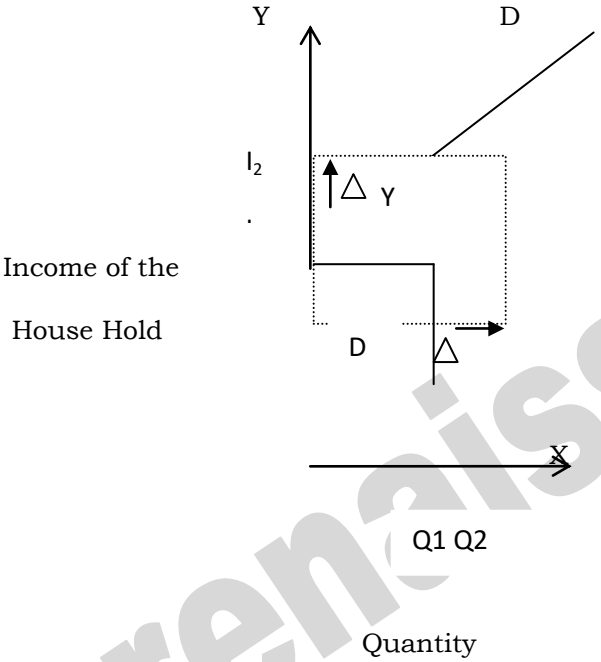
The income elasticity of demand is positive for all normal goods because the consumers demand for a good change in the direction of the change in his income. In the case of an inferior goods the demand for the good various inversely with income. Therefore the income elasticity of demand is negative.

Types of Income Elasticity

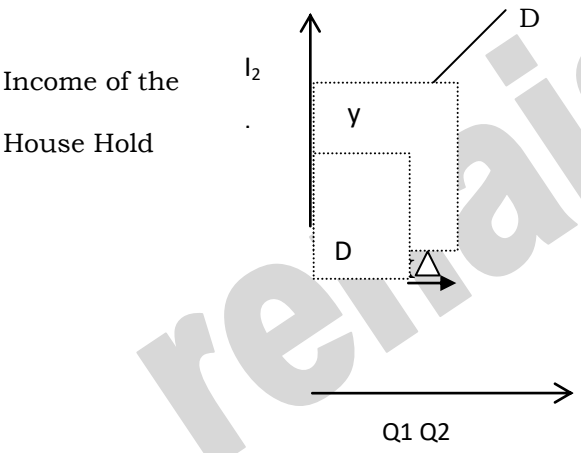
1. <u>High Income elasticity</u>: - when the quantity demanded of good x increases by a larger % age change than the income of the consumer. Ey>1



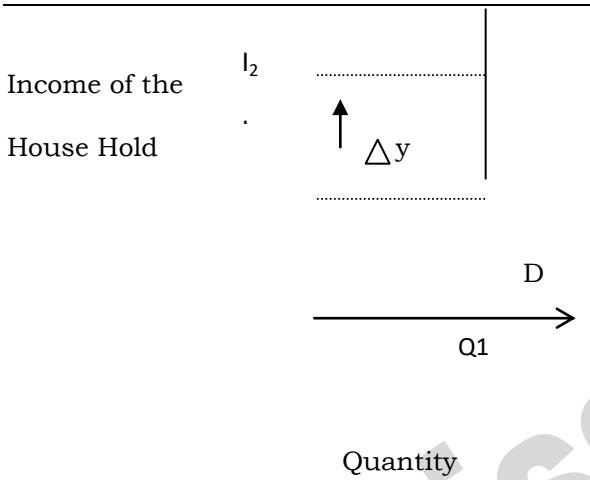
2. Unitary income elasticity: - The %age change in the quality demanded is equal to the %age change in money income. Ey=1



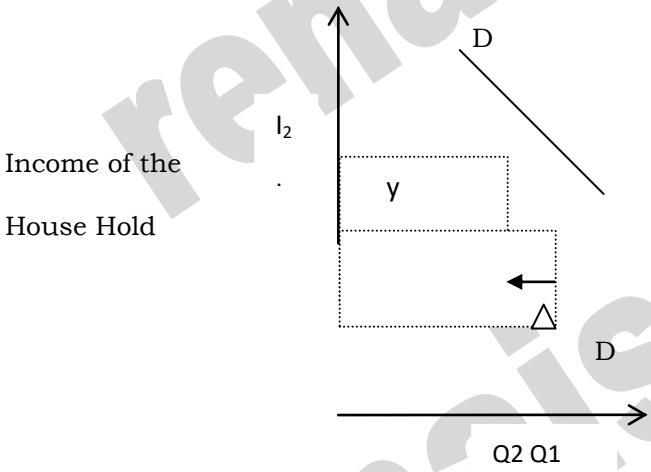
3. Low income elasticity: - income elasticity is low if the relative change in quantity demanded is less then the relative change in money. Ey<1



4. Zero income elasticity: -A change in the income will have effect on the quantity demanded for ex. Salt. Ey=0



5. Negative income elasticity: - as the income increases, the demand decrease because less is bought at higher income and more is bought at lower income. Ey<0



We have high-income elasticity in case of luxury goods and low-income elasticity in case of necessity of goods.

Cross elasticity of demand

It is defined as the ratio of percentage change in demand for me goods due to a change in the price of some other related goods. The concept of cross elasticity is useful in inter commodity demand relation. This change in the demand for one good due to a change in the price of some other goods comes about because often fact that the two goods may be either substitutes or complementary to each other.

$$E = \frac{\%\text{age change in demand of commodity x}}{}$$

%age change in price of commodity y

$$E = \frac{\triangle Qx}{\triangle Py} \times \frac{Py}{Qx}$$

1. If the two goods are **substitutes**, the value of cross-elasticity will be positive.

In the case of **complementary** goods the value of cross elasticity of demand will be negative, because the change in the price of one good cause opposite change in the quality demanded of the other goods.

SUPPLY AND ELASTICITY OF SUPPLY

Meaning of Supply

Supply means the quantities of goods which are offered for sale at particular prices during a giver period of time. Thus, the supply of a commodity may be defined as the amount of that commodity which the sellers (or producers) are able and willing to offer for sale a particular price during a certain period of time.

Factors Affecting Supply

The determinants of supply, other than price, are as follows:

1) Price.
2) Prices of related goods.
3) Objectives o producer
4) Infrastructure
5) The cost of factors of production
6) The State of Technology
7) Factors Outside the Economic Sphere.Weather conditions, floods and droughts, epidemics etc.
8) Tax and Subsidy

Statement of the Law

Law of supply may be stated as "Other things remaining unchanged, the supply of a commodity expends (i.e., rise) with a rise in its price, and contracts (i.e. falls) with a fall in its price."The law, thus, suggests that the supply varies directly with the changes in price. So, a larger amount is supplied at a higher price than at a lower price in the market.

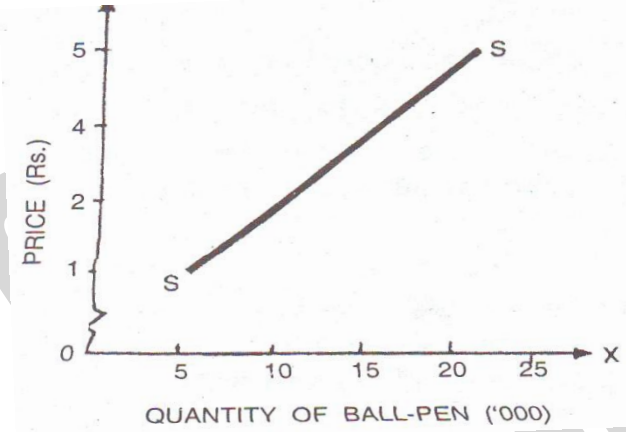
Explanation of the Law

The law can be explained and illustrated with the help of a supply schedule as well as supply curve, based on imaginary data, a follows see table and figure given below. When the data of Table are plotted on a graph, a supply curve can be drawn as shown in Figure From the supply

schedule it appears that the market supply tends to expand with a rise in price and vice versa. Similarly, the upward sloping curve also depicts a direct co-variation between price and supply.

TABLE : Market Supply Schedule

Price of a ball pen (Rs.)	Quantity Supplied (in 000 per week)
1	5
2	10
3	15
4	20
5	25

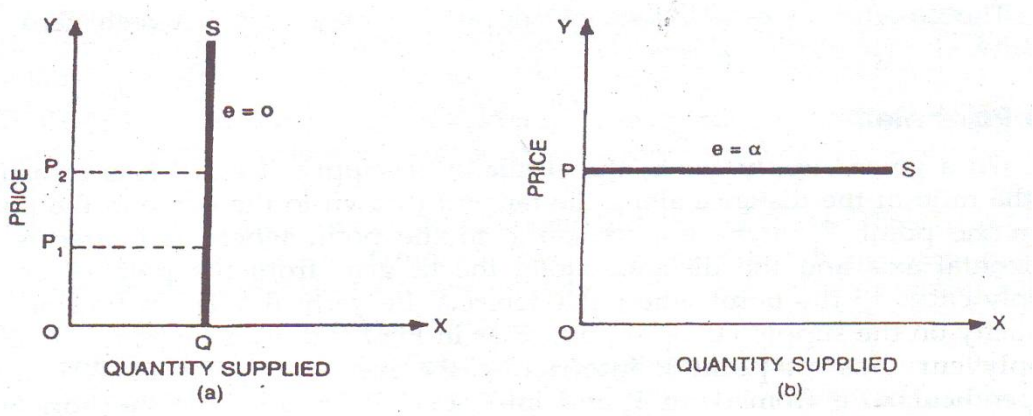


Elasticity of Supply

Elasticity of supply may be defined as the ration of the percentage change or the proportionate change in quantity supplied to the percentage or proportionate change in price. In symbolic terms;

$$Es = \frac{\triangle q}{\triangle p} \times \frac{p_1}{q_1}$$

Where e_s represents elasticity of supply, Q stands for quantity supplied, P for price and the symbols indicates a change.



There are various degrees of elasticity of supply. It may be relatively elastic, relatively or may have perfect elasticity or inelasticity. Different types of supply elasticities have been illustrated in Figure

The panel (a) of Fig. represents the supply curve of zero elasticity. Irrespective of the price, the producer would be supplying OC quantity (es = O). The panel (b) represents the supply curve of infinite elasticity, at OP price the producer would be supplying any amount of the commodity (es = ∞)

Methods of calculating Supply Elasticity

- Proportionate method

  Es = % change in Quantity supplied / Percentage change in price
- Geometric Method

Factors affecting Elasticity of Supply

- Nature and input used
- Natural Constraints
- Risk Taking
- Nature of the commodity
- Cost of Production
- Time Factor
- Technique of production

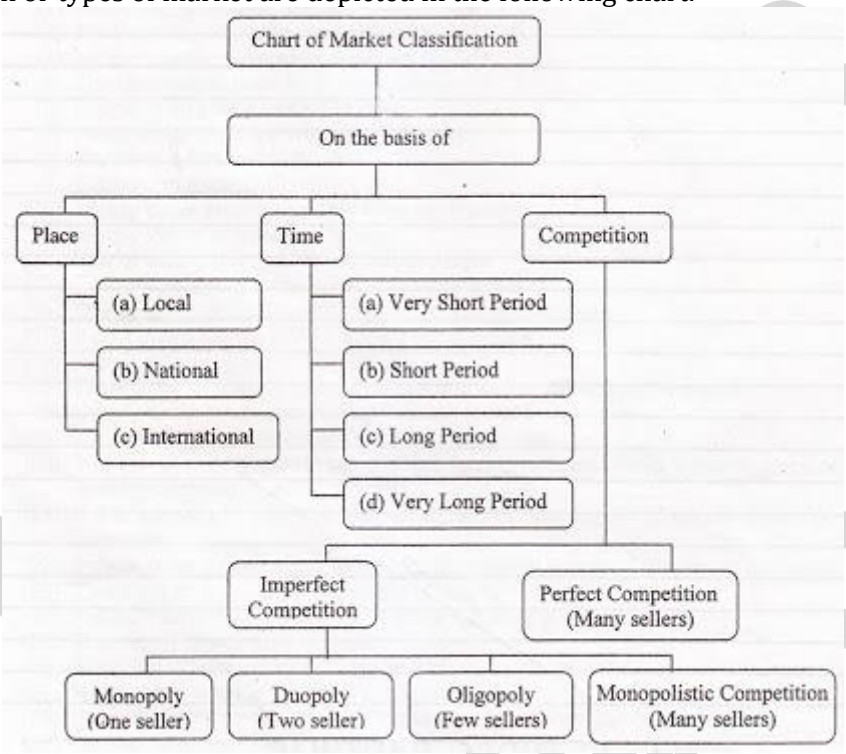
What is Market?
Meaning
"Market refers to an arrangement, whereby buyers and sellers come in contact with each other directly or indirectly, to buy or sell goods."
Thus, above statement indicates that face to face contact of buyer and seller is not necessary for market. E.g. In stock or share market, the buyer and seller can carry on their transactions through internet. So internet, here forms an arrangement and such arrangement also is included in the market.

Characteristics of Market

1. Existence of commodity which is to be bought and sold.
2. The existence of buyers and sellers.
3. A place, be it a certain region, a country or the entire world.
4. Communication between buyers and sellers that only one price should prevail for the same commodity at the same time.

Classification or Types of Market

The classification or types of market are depicted in the following chart.



Generally, the market is classified on the basis of:

1. Place,
2. Time and
3. Competition.

On the basis of **Place**, the market is classified into:

1. Local Market or Regional Market.
2. National Market or Countrywide Market.
3. International Market or Global Market.

On the basis of **Time**, the market is classified into:

1. Very Short Period Market.
2. Short Period Market.
3. Long Period Market.
4. Very Long Period Market.

On the basis of **Competition/Market Structure**, the market is classified into:

1. Perfectly Competitive Market Structure.
2. Imperfectly Competitive Market Structure.

(Market structure refers to number and types of firms operating in the industry.)

Both these market structures widely differ from each other in respect of their features, price, etc. Under imperfect competition, there are different forms of markets like monopoly, duopoly, oligopoly and monopolistic competition.

1. A monopoly has only one or a single (mono) seller.
2. Duopoly has two (duo) sellers.
3. Oligopoly has little or fewer (oligo) number of sellers.
4. Monopolistic competition has many or several numbers of sellers.

The suffix poly has its origin from Greek word *Polus* which means many or more than one.

What is Perfect Competition?

1) Perfect Competition refers to a market situation where there are very large number of buyers and sellers dealing in a homogenous product at a price fixed by the market.
2) Perfect Competition is a market structure where there is a perfect degree of competition and single price prevails.
3) The concept of Perfect Competition was introduced by Dr. Alfred Marshall.
4) Nothing is 100% perfect in this world. So, this states that perfect competition is only a theoretical possibility and it does not exist in reality.

Main Features of Perfect Competition ↓

The following are the characteristics or main features of perfect competition :-

1. Many Sellers

In this market, there are many sellers who form total of market supply. Individually, seller is a firm and collectively, it is an industry. In perfect competition, price of commodity is decided by market forces of demand and supply. i.e. by buyers and sellers collectively. Here, no individual seller is in a position to change the price by controlling supply. Because individual seller's individual supply is a very small part of total supply. So, if that seller alone raises the price, his product will become costlier than other and automatically, he will be out of market. Hence, that seller has to accept the price which is decided by market forces of demand and supply. This ensures single price in the market and in this way, seller becomes price taker and not price maker.

2. Many Buyers

Individual buyer cannot control the price by changing or controlling the demand. Because individual buyer's individual demand is a very small part of total demand or market demand. Every buyer has to accept the price decided by market forces of demand and supply. In this way, all buyers are price takers and not price makers. This also ensures existence of single price in market.

3. Homogenous Product

In this case, all sellers produce homogeneous i.e. perfectly identical products. All products are perfectly same in terms of size, shape, taste, colour, ingredients, quality, trade marks etc. This ensures the existence of single price in the market.

4. Zero Advertisement Cost

Since all products are identical in features like quality, taste, design etc., there is no scope for product differentiation. So advertisement cost is nil.

5. Free Entry and Exit

There are no restrictions on entry and exit of firms. This feature ensures existence of normal profit in perfect competition. When profit is more, new firms enter the market and this leads to competition. Entry of new firms competing with each other results into increase in supply and fall in price. So, this reduces profit from abnormal to normal level.

When profit is low (below normal level), some firms may exit the market. This leads to fall in supply. So remaining firms raise their prices and their profits go up. So again this ensures normal level of profit.

6. Perfect Knowledge

On the front of both, buyers and sellers, perfect knowledge regarding market and pricing conditions is expected. So, no buyer will pay price higher than market price and no seller will charge lower price than market price.

7. Perfect Mobility of Factors

This feature is essential to keep supply at par with demand. If all factors are easily mobile (moveable) from one line of production to another, then it becomes easy to adjust supply as per demand.

Whenever demand is more additional factors should be moved into industry to increase supply and vice versa. In this way, with the help of stable demand and supply, we can maintain single price in the Market.

8. No Government Intervention

Since market has been controlled by the forces of demand and supply, there is no government intervention in the form of taxes, subsidies, licensing policy, control over the supply of raw materials, etc.

9. No Transport Cost

It is assumed that buyers and sellers are close to market, so there is no transport cost. This ensures existence of single price in market.

IMPERFECT COMPETITION

It is an important market category wherein individual firms exercise control over the price to a smaller or larger degree depending upon the degree of imperfection present in a case.

Monopoly

1. The term monopoly is derived from Greek words '*mono*' which means single and '*poly*' which means seller. So, monopoly is a market structure, where there only a single seller producing a product having no close substitutes.
2. This single seller may be in the form of an individual owner or a single partnership or a Joint Stock Company. Such a single firm in market is called monopolist. Monopolist is price maker and has a control over the market supply of goods. But it does not mean that he can set both price and output level. A monopolist can do

either of the two things i.e. price or output. It means he can fix either price or output but not both at a time.

Characteristics / Features of Monopoly

Following are the features or characteristics of Monopoly :-

1. A single seller has complete control over the supply of the commodity.
2. There are no close substitutes for the product.
3. There is no free entry and exit because of some restrictions.
4. There is a complete negation of competition.
5. Monopolist is a price maker.
6. Since there is a single firm, the firm and industry are one and same i.e. firm coincides the industry.
7. Monopoly firm faces downward sloping demand curve. It means he can sell more at lower price and vice versa. Therefore, elasticity of demand factor is very important for him.

Classification / Kinds / Types of Monopoly

1. Perfect Monopoly

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

2. Imperfect Monopoly

It is also called as relative monopoly or simple or limited monopoly. It refers to a single seller market having no close substitute. It means in this market, a product may have a remote substitute. So, there is fear of competition to some extent e.g. Mobile (Cellphone) telcom industry (e.g. vodaphone) is having competition from fixed landline phone service industry (e.g. BSNL).

3. Private Monopoly

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

4. Public Monopoly

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

5. Simple Monopoly

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

6. Discriminating Monopoly

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

7. Legal Monopoly

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

8. Natural Monopoly

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

9. Technological Monopoly

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

10. Joint Monopoly

A number of business firms acquire monopoly position through amalgamation, cartels, syndicates, etc, it becomes joint monopoly. e.g. Actually, pizza making firm and burger making firm are competitors of each other in fast food industry. But when they combine their business, that leads to reduction in competition. So they can enjoy monopoly power in market.

Monopolistic Competition

1. Pure monopoly and perfect competition are two extreme cases of market structure. In reality, there are markets having large number of producers competing with each other in order to sell their product in the market. Thus, there is monopoly on one hand and perfect competition on other hand. Such a mixture of monopoly and perfect competition is called as monopolistic competition. It is a case of imperfect competition.
2. Monopolistic competition has been introduced by American economist Prof. Edward Chamberlin, in his book 'Theory of Monopolistic Competition' published in 1933.

Features of Monopolistic Competition ↓

The following are the features or characteristics of monopolistic competition :-

1. Large Number of Sellers

There are large number of sellers producing differentiated products. So, competition among them is very keen. Since number of sellers is large, each seller produces a very small part of market supply. So no seller is in a position to control price of product. Every firm is limited in its size.

2. Product Differentiation

It is one of the most important features of monopolistic competition. In perfect competition, products are homogeneous in nature. On the contrary, here, every producer tries to keep his product dissimilar than his rival's product in order to maintain his separate identity. This boosts up the competition in market. So, every firm acquires some monopoly power.

3. Freedom of Entry and Exit

This feature leads to stiff competition in market. Free entry into the market enables new firms to come with close substitutes. Free entry or exit maintains normal profit in the market for a longer span of time.

4. Selling Cost

It is a unique feature of monopolistic competition. In such type of market, due to product differentiation, every firm has to incur some additional expenditure in the form of selling cost. This cost includes sales promotion expenses, advertisement expenses, salaries of marketing staff, etc.
But on account of homogeneous product in perfect competition and zero competition in monopoly, selling cost does not exist there.

5. Absence of Interdependence

Large numbers of firms are different in their size. Each firm has its own production and marketing policy. So no firm is influenced by other firm. All are independent.

6. Two Dimensional Competition

Monopolistic competition has two types of competition aspects viz.

i. Price competition i.e. firms compete with each other on the basis of price.
ii. Non price competition i.e. firms compete on the basis of brand, product quality advertisement.

7. Concept of Group

In place of Marshallian concept of industry, Chamberlin introduced the concept of Group under monopolistic competition. An industry means a number of firms producing identical product. A group means a number of firms producing differentiated products which are closely related.

8. Falling Demand Curve

In monopolistic competition, a firm is facing downward sloping demand curve i.e. elastic demand curve. It means one can sell more at lower price and vice versa.

Oligopoly

The term oligopoly is derived from two Greek words: 'oligi' means few and 'polein' means to sell. Oligopoly is a market structure in which there are only a few sellers (but more than two) of the homogeneous or differentiated products. So, oligopoly lies in between monopolistic competition and monopoly.
Oligopoly refers to a market situation in which there are a few firms selling homogeneous or differentiated products. Oligopoly is, sometimes, also known as 'competition among the few' as there are few sellers in the market and every seller influences and is influenced by the behaviour of other firms.

Example of Oligopoly:

In India, markets for automobiles, cement, steel, aluminium, etc, are the examples of oligopolistic market. In all these markets, there are few firms for each particular product.
DUOPOLY is a special case of oligopoly, in which there are exactly two sellers. Under duopoly, it is assumed that the product sold by the two firms is homogeneous and there is no substitute for it.

Examples where two companies control a large proportion of a market are: (i) Pepsi and Coca-Cola in the soft drink market; (ii) Airbus and Boeing in the commercial large jet aircraft market; (iii) Intel and AMD in the consumer desktop computer microprocessor market.

Types of Oligopoly:

1. Pure or Perfect Oligopoly:

If the firms produce homogeneous products, then it is called pure or perfect oligopoly. Though, it is rare to find pure oligopoly situation, yet, cement, steel, aluminum and chemicals producing industries approach pure oligopoly.

2. Imperfect or Differentiated Oligopoly:

If the firms produce differentiated products, then it is called differentiated or imperfect oligopoly. For example, passenger cars, cigarettes or soft drinks. The goods produced by different firms have their own distinguishing characteristics, yet all of them are close substitutes of each other.

3. Collusive Oligopoly:

If the firms cooperate with each other in determining price or output or both, it is called collusive oligopoly or cooperative oligopoly.

4. Non-collusive Oligopoly:

If firms in an oligopoly market compete with each other, it is called a non-collusive or non-cooperative oligopoly.

Features of Oligopoly:

The main features of oligopoly are elaborated as follows:

1. Few firms:

Under oligopoly, there are few large firms. The exact number of firms is not defined. Each firm produces a significant portion of the total output. There exists severe competition among different firms and each firm try to manipulate both prices and volume of production to outsmart each other. For example, the market for automobiles in India is an oligopolist structure as there are only few producers of automobiles.

The number of the firms is so small that an action by any one firm is likely to affect the rival firms. So, every firm keeps a close watch on the activities of rival firms.

2. Interdependence:

Firms under oligopoly are interdependent. Interdependence means that actions of one firm affect the actions of other firms. A firm considers the action and reaction of the rival firms while determining its price and output levels. A change in output or price by one firm evokes reaction from other firms operating in the market.

For example, market for cars in India is dominated by few firms (Maruti, Tata, Hyundai, Ford, Honda, etc.). A change by any one firm (say, Tata) in any of its vehicle (say, Indica) will induce other firms (say, Maruti, Hyundai, etc.) to make changes in their respective vehicles.

3. Non-Price Competition:

Under oligopoly, firms are in a position to influence the prices. However, they try to avoid price competition for the fear of price war. They follow the policy of price rigidity. Price rigidity refers to a situation in which price tends to stay fixed irrespective of changes in demand and supply conditions. Firms use other methods like advertising, better services to customers, etc. to compete with each other.

If a firm tries to reduce the price, the rivals will also react by reducing their prices. However, if it tries to raise the price, other firms might not do so. It will lead to loss of customers for the firm, which intended to raise the price. So, firms prefer non- price competition instead of price competition.

4. Barriers to Entry of Firms:

The main reason for few firms under oligopoly is the barriers, which prevent entry of new firms into the industry. Patents, requirement of large capital, control over crucial raw materials, etc, are some of the reasons, which prevent new firms from entering into industry. Only those firms enter into the industry which is able to cross these barriers. As a result, firms can earn abnormal profits in the long run.

5. Role of Selling Costs:

Due to severe competition 'and interdependence of the firms, various sales promotion techniques are used to promote sales of the product. Advertisement is in full swing under oligopoly, and many a times advertisement can become a matter of life-and-death. A firm under oligopoly relies more on non-price competition.

Selling costs are more important under oligopoly than under monopolistic competition.

6. Group Behaviour:

Under oligopoly, there is complete interdependence among different firms. So, price and output decisions of a particular firm directly influence the competing firms. Instead of independent price and output strategy, oligopoly firms prefer group decisions that will protect the interest of all the firms. Group Behaviour means that firms tend to behave as if they were a single firm even though individually they retain their independence.

7. Nature of the Product:

The firms under oligopoly may produce homogeneous or differentiated product.

i. If the firms produce a homogeneous product, like cement or steel, the industry is called a pure or perfect oligopoly.

ii. If the firms produce a differentiated product, like automobiles, the industry is called differentiated or imperfect oligopoly.

8. Indeterminate Demand Curve:

Under oligopoly, the exact behaviour pattern of a producer cannot be determined with certainty. So, demand curve faced by an oligopolist is indeterminate (uncertain). As firms are inter-dependent, a firm cannot ignore the reaction of the rival firms. Any change in price by one firm may lead to

change in prices by the competing firms. So, demand curve keeps on shifting and it is not definite, rather it is indeterminate.

Duopoly

Duopoly is a limiting case of oligopoly, in the sense that it has all the characteristics of oligopoly except the number of sellers which are only two increase of duopoly as against a few in oligopoly. The main distinguishing feature of duopoly (and also of oligopoly) from other market situating is that the sellers' decisions are not independent of each other.

A change in price and output by our seller affect the former, and now the former may have to react. This process of action- reaction of the sellers may continue. This when a duopolist (or an oligopolist) takes any policy decision he also takes into account the reactions of his rivals. That is, such a market situation is characteristics by the mutual interdependence in policy-making.

Thus, Oligopoly is a situation where a few large firms complete against each other and there is an element of interdependence in the decision making of these firms. Each firm in the oligopoly recognizes this interdependence.

Any decision one firm makes (be it on price, product or promotion) will affect the trade of the competitors and so results in countermoves.

In order to differentiate oligopoly situation from perfect and monopoly situations, it is essential to understand the following main features of oligopoly:

(a) Small number of large sellers.

(b) Interdependence.

(c) Presence of monopoly element—so long products are differentiated, the firms enjoy some monopoly power, as each product will have some loyal customers.

(d) Existence of price rigidity.

(e) Advertising—Given high Gross elasticity demand for products and price rigidity in oligopoly the only way open to oligopolist is to raise his sales volume by either advertising or improving the quality.

Advertisement expenditure is aimed primarily at shifting the demand in favour of the product.

Examples are:

Pepsi and Coca-Cola soft drinks.

Price Determination under Perfect Competition

1. In prefect competition, price is determined by the market forces of demand and supply. All buyers and sellers are price takers and not price makers. Buyer represents demand side in the market. Every rational buyer aims at maximising his satisfaction by purchasing more at lower price and lower at higher price. This is called demand behaviour of buyer i.e. Law of Demand.
2. Seller represents supply side in the market. Every rational seller aims at maximizing his profits by selling more at higher price and lesser at lower price. This is called

supply behaviour of seller i.e. Law of supply. But at a common price, buyer is ready to demand a particular quantity of goods and seller is also ready to supply exactly the same quantity of goods to buyer, such common price is called 'Equilibrium Price' and such quantity is called 'Equilibrium Quantity'.

"***Equilibrium Price is a price which equates both demand and supply***".

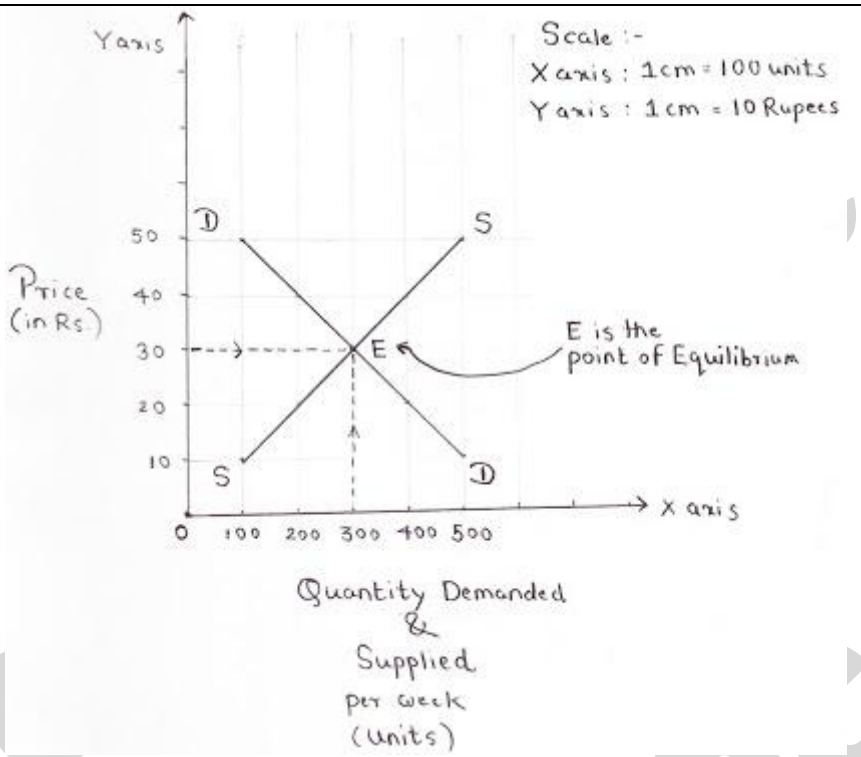
Table - Sample Demand and Supply Schedules

Demand and Supply Schedules

Price per unit of commodity	Quantity demanded per week	Quantity Supplied per week
(Rs.)	(Units)	(Units)
50	100	500
40	200	400
30	300	300
20	400	200
10	500	100

It is the price at which total demand is exactly equal to total supply. Graphically it is the point where DD curve and SS curve intersect each other.

Graph - Equilibrium Price Determination



In the above graphical diagram, the following points have been observed :-

1. On X axis, quantity demand and supplied per week has been given and on Y axis, price has been given.
2. Buyers are purchasing more at lower price and vice versa. This negative relationship is shown by downward sloping DD curve.
3. Sellers are selling more at higher price and vice versa. This positive relationship is shown by upward sloping SS curve.
4. As per the data given in table, Rs. 30 is that price at which demand equates supply (300 units). So, Rs. 30 is an equilibrium price and 300 units is an equilibrium quantity.
5. Suppose, price fails to Rs. 20/-, So this results into increase in demand (as per Law of Demand) and decrease in supply (as per Law of Supply). Since DD > SS, i.e. because of low supply, sellers will be dominant and competition will be among buyers, this leads to rise in price level. (i.e. from Rs. 20 to Rs. 30) Again price will come back at original level i.e. equilibrium price (Rs. 30).
6. Suppose, supply exceeds demand (DD < SS) now buyers become dominant and competition will be among sellers. This leads to downfall in price. (i.e. from Rs. 40 to Rs.30). Again price will come back to original level. i.e. equilibrium price (Rs. 30).
7. Such automatic adjustment by demand and supply forces will keep single price in market.

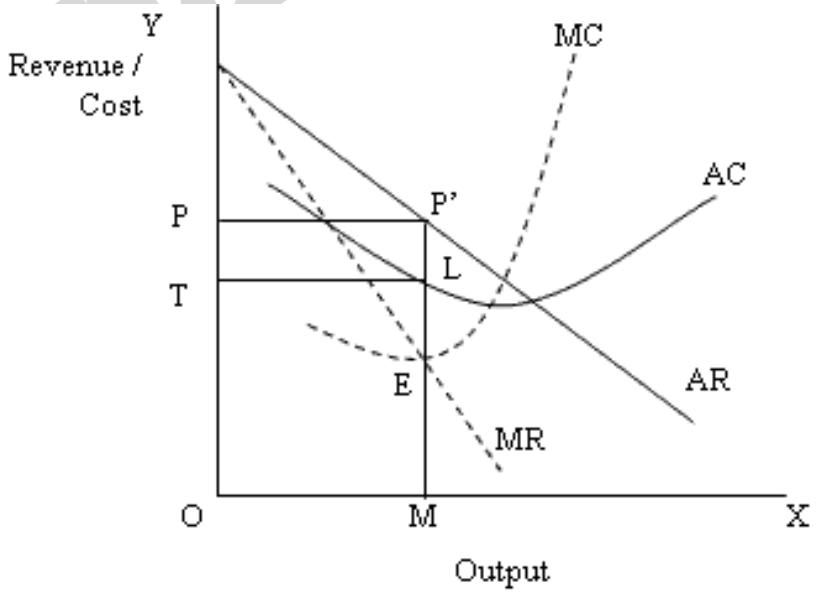
Price Determination under Monopoly

1. *Monopoly is that market form in which a single producer controls the whole supply of a single commodity which has no close substitute.*
2. From this definition there are two points that must be noted:

(i) Single Producer: There must be only one producer who may be an individual, a partnership firm or a joint stock company. Thus single firm constitutes the industry. The distinction between firm and industry disappears under conditions of monopoly.

(ii) No Close Substitute: The commodity produced by the producer must have no closely competing substitutes, if he is to be called a monopolist. This ensures that there is no rival of the monopolist. Therefore, the cross elasticity of demand between the product of the monopolist and the product of any other producer must be very low.

3. A firm under monopoly faces a downward sloping demand curve or average revenue curve. Further, in monopoly, since average revenue falls as more units of output are sold, the marginal revenue is less than the average revenue. In other words, under monopoly the MR curve lies below the AR curve.
4. The Equilibrium level in monopoly is that level of output in which marginal revenue equals marginal cost. The producer will continue producer as long as marginal revenue exceeds the marginal cost. At the point where MR is equal to MC the profit will be maximum and beyond this point the producer will stop producing.



5. It can be seen from the diagram that up till OM output, marginal revenue is greater than marginal cost, but beyond OM the marginal revenue is less than marginal cost. Therefore, the monopolist will be in equilibrium at output OM where marginal revenue is equal to marginal cost and the profits are the greatest. The corresponding price in the diagram is MP' or OP. It can be seen from the diagram at output OM, while MP' is the average revenue, ML is the average cost, therefore, P'L is the profit per unit. Now the total profit is equal to P'L (profit per unit) multiply by OM (total output).
6. In the short run, the monopolist has to keep an eye on the variable cost, otherwise he will stop producing. In the long run, the monopolist can change the size of plant

in response to a change in demand. In the long run, he will make adjustment in the amount of the factors, fixed and variable, so that MR equals not only to short run MC but also long run MC.

Price Determination under Monopolistic Competition:

Now the question arises at which price-output level the monopolistic competitive firm will be in equilibrium position? Here we have to remember that every seller, whether a monopolist or one working under perfectly or imperfectly competitive situations, wants to maximise his profits.

The seller will go on producing till the extra receipts to be had from additional production exceed the extra cost incurred in the production process. In other words, profits will be maximised when marginal revenue is equal to marginal cost. So long as marginal revenue is greater than marginal cost, the seller will find it profitable to expand his output, and if marginal revenue is less than marginal cost, obviously it is to his advantage to reduce his output to the point where marginal revenue is equal to marginal cost. In the short run, therefore, the firm will be in equilibrium when it is maximising its profits, i.e., when

Marginal Revenue = Marginal Cost

In the short run, a monopolistically competitive firm may either realise abnormal profits or be faced with losses. But, in the long run, such supernormal profits disappear. This is because we assume that entry is free and new firms will enter the industry if the existing firms are making supernormal profits.

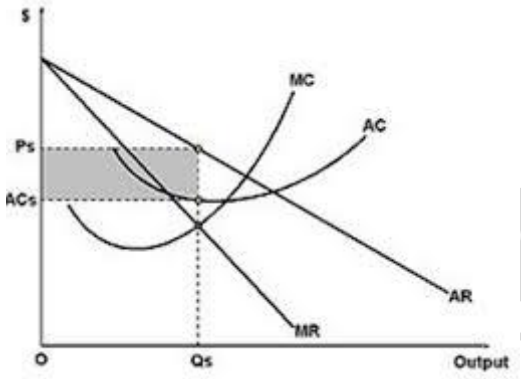
As new firms enter and start production, the demand curve or average revenue curve faced by the firms will fall (shift to the left) and, therefore, the supernormal profits will be competed away, and the firms will be earning only normal profits.

Similarly, if in the short run firms are suffering losses, then in the long run some firms will leave the industry so that the remaining firms are able to earn normal profits. Another point which is to be noted in regard to the long-run equilibrium under monopolistic competition is that average revenue curve in the long run will be more elastic, since large number of substitutes will be available in the long run. Therefore, in the long run, equilibrium is restored when firms are earning only normal profits. Now, profits are normal only when

Average Revenue = Average Cost.

Therefore, equilibrium in the long run under imperfect competition holds when

Average Revenue = Average Cost.

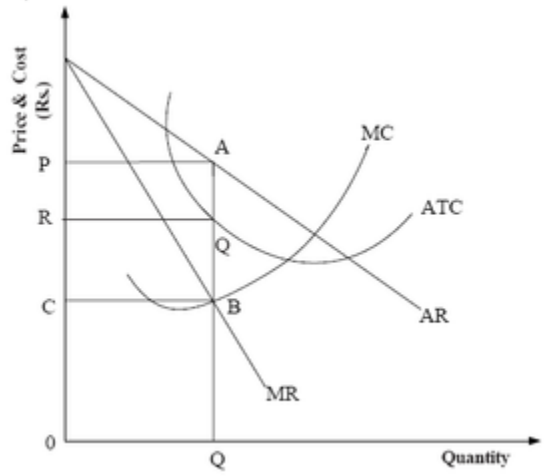


Price determination under Oligopoly:
In an oligopoly, the number of sellers is small as against a sole seller under monopoly and many sellers under monopolistic completion.

Principal Characteristics of Oligopoly
The principal features of oligopoly are as under:
(i) Interdependence:
Owing to a small number of sellers, the price-output decisions of one firm are taken note of by other firms and affect their decisions too.
(ii) Indeterminate Demand Curve:
Since no firm is able to predict the reaction or behaviour of other firms consequent on price output decision of one firm, there is uncertainty, and no firm can be sure of the quantity of the commodity it can sell at a price. The demand curve is thus indeterminate.
(iii) High Pressure Salesmanship:
There being only a small number of firms in the field, there is a tendency for a firm in oligopoly to increase its selling costs and indulge in advertisement so that it may capture as much of the market as possible. There is a counter-campaign by the rivals.

(iv) Sticky Prices:
In order to avoid adverse reaction by the rivals, there is a tendency for the firms to avoid changing the price of their products. Hence comparative price stability rules in the oligopolistic market.

How is Price Determined under Oligopoly?
Since price-output decisions by one firm affect the decisions of other firms, nobody can be sure of their reaction. As pointed out above, the demand curve is indeterminate and no single price-output decision is possible.



What Is Utility?

Utility is a term in economics that refers to the total satisfaction received from consuming a good or service. Economic theories based on rational choice usually assume that consumers will strive to maximize their utility. 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. In practice, a consumer's utility is impossible to measure and quantify. However, some economists believe that they can indirectly estimate what is the utility of an economic good or service by employing various models.

Understanding Utility

The utility definition in economics is derived from the concept of usefulness. An economic good yields utility to the extent to which it's useful for satisfying a consumer's want or need.1 Various schools of thought differ as to how to model economic utility and measure the usefulness of a good or service. Utility in economics was first coined by the noted 18th-century Swiss mathematician Daniel Bernoulli.2 Since then, economic theory has progressed, leading to various types of economic utility.

Ordinal Utility

Early economists of the Spanish Scholastic tradition of the 1300s and 1400s described the economic value of goods as deriving directly from this property of usefulness and based their theories on prices and monetary exchanges. This conception of utility was not quantified, but a qualitative property of an economic good.3 Later economists, particularly those of the Austrian School, developed this idea into an ordinal theory of utility, or the idea that individuals could order or rank the usefulness of various discrete units of economic goods.

Cardinal Utility

To Bernoulli and other economists, utility is modeled as a quantifiable or cardinal property of the economic goods that a person consumes.2 To help with this quantitative measurement of satisfaction, economists assume a unit known as a "util" to represent the amount of psychological satisfaction a specific good or service generates for a subset of people in various situations.5 The concept of a measurable util makes it possible to treat economic theory and relationships using mathematical symbols and calculations.

However, it separates the theory of economic utility from actual observation and experience, since “utils” cannot actually be observed, measured, or compared between different economic goods or between individuals.6

If, for example, an individual judges that a piece of pizza will yield 10 utils and that a bowl of pasta will yield 12 utils, that individual will know that eating the pasta will be more satisfying. For the producers of pizza and pasta, knowing that the average bowl of pasta will yield two additional utils will help them price pasta slightly higher than pizza.

Additionally, utils can decrease as the number of products or services consumed increases. The first slice of pizza may yield 10 utils, but as more pizza is consumed, the utils may decrease as people become full. This process will help consumers understand how to maximize their utility by allocating their money between multiple types of goods and services as well as help companies understand how to structure tiered pricing.

The Definition of Total Utility

If utility in economics is cardinal and measurable, the total utility (TU) is defined as the sum of the satisfaction that a person can receive from the consumption of all units of a specific product or service.1 Using the example above, if a person can only consume three slices of pizza and the first slice of pizza consumed yields ten utils, the second slice of pizza consumed yields eight utils, and the third slice yields two utils, the total utility of pizza would be twenty utils.

The Definition of Marginal Utility

Marginal utility (MU) is defined as the additional (cardinal) utility gained from the consumption of one additional unit of a good or service or the additional (ordinal) use that a person has for an additional unit.1 Using the same example, if the economic utility of the first slice of pizza is ten utils and the utility of the second slice is eight utils, the MU of eating the second slice is eight utils. If the utility of a third slice is two utils, the MU of eating that third slice is two utils. In ordinal utility terms, a person might eat the first slice of pizza, share the second slice with their roommate, save the third slice for breakfast, and use the fourth slice as a doorstop.

an indifference curve connects points on a graph representing different quantities of two goods, points between which a consumer is indifferent. That is, any combinations of two products indicated by the curve will provide the consumer with equal levels of utility, and the consumer has no preference for one combination or bundle of goods over a different combination on the same curve. One can also refer to each point on the indifference curve as rendering the same level of utility (satisfaction) for the consumer. In other words, an indifference curve is the locus of various points showing different combinations of two goods providing equal utility to the consumer. Utility is then a device to represent preferences rather than something from which preferences come.The main use of indifference curves is in the representation of potentially observable demand patterns for individual consumers over commodity bundles.

An example of an indifference map with three indifference curves represented

There are infinitely many indifference curves: one passes through each combination. A collection of (selected) indifference curves, illustrated graphically, is referred to as an indifference map. The slope of an indifference curve is called the MRS (marginal rate of substitution), and it indicates how much of good y must be sacrificed to keep the utility constant if good x is increased by one unit. Given a utility function u(x,y), to calculate the MRS, we simply take the partial derivative of the function u with respect to good x and divide it by the partial derivative of the function u with respect to good y. If the marginal rate of substitution is diminishing along an indifference curve, that is the magnitude of the slope is decreasing or becoming less steep, then the preference is convex.

Assumptions of consumer preference theory

Preferences are complete. The consumer has ranked all available alternative combinations of commodities in terms of the satisfaction they provide him.

Assume that there are two consumption bundles A and B each containing two commodities x and y. A consumer can unambiguously determine that one and only one of the following is the case:

A is preferred to B, formally written as A p B

B is preferred to A, formally written as B p A

A is indifferent to B, formally written as A I B

This axiom precludes the possibility that the consumer cannot decide,[8] It assumes that a consumer is able to make this comparison with respect to every conceivable bundle of goods.

Preferences are reflexive

This means that if A and B are identical in all respects the consumer will recognize this fact and be indifferent in comparing A and B

$A = B \Rightarrow A \ I \ B$

Preferences are transitive

If A p B and B p C, then A p C.

Also if A I B and B I C, then A I C.

This is a consistency assumption.

Preferences are continuous

If A is preferred to B and C is sufficiently close to B then A is preferred to C.

$A \ p \ B$ and $C \rightarrow B \Rightarrow A \ p \ C$.

"Continuous" means infinitely divisible - just like there are infinitely many numbers between 1 and 2 all bundles are infinitely divisible. This assumption makes indifference curves continuous.

Preferences exhibit strong monotonicity

If A has more of both x and y than B, then A is preferred to B.

This assumption is commonly called the "more is better" assumption.

An alternative version of this assumption requires that if A and B have the same quantity of one good, but A has more of the other, then A is preferred to B.

It also implies that the commodities are good rather than bad. Examples of bad commodities can be disease, pollution etc. because we always desire less of such things.

Indifference curves exhibit diminishing marginal rates of substitution

The marginal rate of substitution tells how much 'y' a person is willing to sacrifice to get one more unit of 'x'.

This assumption assures that indifference curves are smooth and convex to the origin.

This assumption also set the stage for using techniques of constrained optimization because the shape of the curve assures that the first derivative is negative and the second is positive.

Another name for this assumption is the substitution assumption. It is the most critical assumption of consumer theory: Consumers are willing to give up or trade-off some of one good to get more of another. The fundamental assertion is that there is a maximum amount that "a consumer will give up, of one commodity, to get one unit of another good, in that amount which will leave the consumer indifferent between the new and old situations"[9] The negative slope of the indifference curves represents the willingness of the consumer to make a trade off

.

What is Consumer Surplus?

Consumer surplus, also known as buyer's surplus, is the economic measure of a customer's excess benefit. It is calculated by analyzing the difference between the consumer's willingness to pay for a product and the actual price they pay, also known as the equilibrium price. A surplus occurs when the consumer's willingness to pay for a product is greater than its market price.

Consumer surplus is based on the economic theory of marginal utility, which is the additional satisfaction a person derives by consuming one more unit of a product or service. The satisfaction varies by consumer, due to differences in personal preferences. According to the theory, the more of a product a consumer buys, the less willing he/she is to pay more for each additional unit due to the diminishing marginal utility derived from the product.

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The point where the demand and supply meet is the equilibrium price. The area above the supply level and below the equilibrium price is called product surplus (PS), and the area below the demand level and above the equilibrium price is the consumer surplus (CS).

While taking into consideration the demand and supply curves, the formula for consumer surplus is CS = ½ (base) (height). In our example, CS = ½ (40) (70-50) = 400.

Consumer Surplus and the Price Elasticity of Demand

Consumer surplus for a product is zero when the demand for the product is perfectly elastic. This is because consumers are willing to match the price of the product. When demand is perfectly inelastic, consumer surplus is infinite because a change in the price of the product does not affect its demand. This includes products that are basic necessities such as milk, water, etc.

Demand curves are usually downward sloping because the demand for a product is usually affected by its price. With inelastic demand, consumer surplus is high because the demand is not affected by a change in the price, and consumers are willing to pay more for a product.

In such an instance, sellers will increase their prices to convert the consumer surplus to a producer surplus. Alternatively, with elastic demand, a small change in price will result in a large change in demand. It will result in a low consumer surplus as customers are no longer willing to buy as much of the product or service with a change in price.

Law of Diminishing Marginal Utility

According to economist Alfred Marshall, the more you consume a certain commodity, the lower the satisfaction derived from each additional unit of consumption. For example, if you buy one apple for $0.50, you are not willing to pay more for the second apple. At the same time, the utility derived from consuming the second apple is lower than it was for the first apple. The concept is described in the table below:

According to Alfred Marshal: Consumer Surplus = Total Utility – (Price x Quantity)

Assumptions of the Consumer Surplus Theory

1. Utility is a measurable entity

The consumer surplus theory suggests that the value of utility can be measured. Under Marshallian economics, utility can be expressed as a number. For example, the utility derived from an apple is 15 units.

2. No substitutes available

There are no available substitutes for any commodity under consideration.

3. Ceteris Paribus

It states that customers' tastes, preferences, and income do not change.

4. Marginal utility of money remains constant

It states that the utility derived from the income of a consumer is constant. That is, any change in the amount of money a consumer has does not change the amount of utility they derive from it. It is required because without it, money cannot be used to measure utility.

5. Law of diminishing marginal utility

It states that the more a product or service is consumed, the lower the marginal utility is derived from consuming each extra unit**.**

6. Independent marginal utility

The marginal utility derived from the product being consumed is not affected by the marginal utility derived from consuming similar goods or services. For example, if you

consumed orange juice, the utility derived from it is not affected by the utility derived from apple juice.

UNIT IV

THEORIES OF WAGES, INTEREST AND EMPLOYMENT

THEORY OF WAGES

Wages

1) A wage is monetary compensation (or remuneration) paid by an employer to an employee in exchange for work done. Payment may be calculated as a fixed amount for each task completed (a task wage or piece rate), or at an hourly or daily rate, or based on an easily measured quantity of work done.

2) Wages is best associated with employee compensation based on the number of hours worked multiplied by an hourly rate of pay. For example, an employee working in an assembly plant might work 40 hours during the work week. If the person's hourly rate of pay is Rs.15, the employee will receive a paycheck showing *gross wages* of Rs. 600 (40 x Rs. 15)

Salary

1) Salary is a fixed amount of money or compensation paid to an employee by an employer in return for work performed. Salary is commonly paid in fixed intervals, for example, monthly payments of one-twelfth of the annual salary.
2) Salary is best associated with employee compensation quoted on an annual basis. For example, the manager of the assembly plan might earn a *salary* of Rs.120,000 per year. If the salaried manager is paid semi-monthly (perhaps on the 15th and last day of each month), her or his paycheck will show gross *salary* of Rs. 5,000 for the half-month.
3) Salary is typically determined by comparing market pay rates for people performing similar work in similar industries in the same region.

Wages V/s salary

1) Wage earners are paid by the hour whereas Salary earners are paid by the year.
2) Salary earners usually receive paid time when they are not working whereas Wage earners often have to give up pay for time off, Salaries are often calculated as packages

3) Wage earners get paid more for working more than 40 hours per week, Salary workers are rarely offered overtime pay.
4) Salaries can contain all kinds of benefits and perks whereas wage doesn't.

THE SUBSISTENCE THEORY OF WAGES

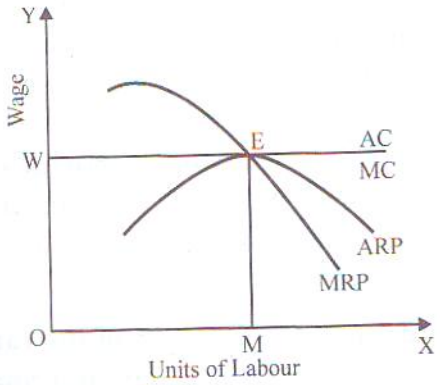
1) This theory was originated with the Physiocratic School of the French economists and was developed by Adam Smith and the later economists of the classical school. The German economist Lassalle called it the Iron Law of Wages or the Brazen Law of Wages. Karl Marx made it the basis of his theory of exploitation.
2) According to this theory, wages tend to settle at the level just sufficient to maintain the worker and his family at the minimum subsistence level. If wages rise above the subsistence level, the workers are encouraged to marry and to have large families. The large supply of labour brings wages down to the subsistence level. If wages fall below this level, marriages and births are discouraged and under-nourishment increases death rate. Ultimately, labour supply is decreased, until wages rise again to the subsistence level. It is supposed that the labour supply is infinitely elastic, that is, its supply would increase if the price (i.e. wage) offered rises.

Criticism of subsistence theory

1) This theory is almost completely outdated and has no such practical application, especially in advanced countries. The theory was based on the Malthusian Theory of Population. It is inappropriate to say that every increase in wages must inevitably be followed by an increase in birth rate. An increase in wages may be followed by a higher standard of living.
2) Ricardo was one of the exponents of the subsistence theory. He stressed the influence of custom and habit in determining what was necessary for the workers. But habits and customs change over time. Hence, the theory cannot hold good for a longer period of time, especially of a world characterised by fast changing habits. Ricardo, therefore, admitted that wages might rise above the subsistence level for an indefinite period in an improving society.
3) The second criticism against this theory is that the subsistence level is more or less uniform for all working classes with certain exceptions. The thoery, thus, does not explain differences of wages in different employment.
4) The third criticism is that the theory explains wages only with reference to supply; the demand side has been entirely ignored. On the demand side, the employer has to consider the amount of work which the employee gives him and not the subsistence of the worker.
5) The fourth criticism is that the theory explains the adjustment of wages over the lifetime of a generation and does not explain wage fluctuations from year to year.
6) The fifth and the final criticism is that the term 'subsistence' has a very vague impression. Does it refer to the minimum requirements of a modern man or of a tribal savage?

MARGINAL PRODUCTIVITY THEORY OF WAGES

1) The marginal productivity theory was first stated by Von-Thunen. The theory has been developed by Wicksteed Walras J.B. Clark and many others.
2) Statement of the theory: Marginal productivity theory of wage explains that under perfect competition a worker's wage is equal to marginal as well as average revenue productivity. In other words marginal revenue productivity and average revenue productivity (ARP) of a worker determine his wages.
3) According to this theory wage of a laborer is determined by his marginal productivity. In other words MRP= M.W. Marginal productivity is the addition made total productivity by employing one more unit of labour. As the laborers are given money wage their marginal productivity is calculated in terms of money. This is called marginal revenue productivity (MRP). MRP is the addition made to the total revenue by employing one more unit of a worker. A producer will maximize his profit when the wage of a laborer is equal to the marginal revenue product.
4) If MW is greater than MRP (MW > MRP) wage is greater than marginal revenue product. The producer will sustain loss then. If MW for labour is higher than its marginal revenue product then the employers get less and pay more. Thus he loses.
5) On the other hand if the producer pays wage less than MRP. (ME < MRP) he will gain. But his gain will not be maximized. Thus he will gain by employing workers so long when MW = MRP. Thus the wage of a laborer will be determined where MRP - M.W.



VMP = MPP x P.

In Perfect competition MRP = VMP

In imperfect competition MRP ≠ VMP

Point E in the diagram is the point of equilibrium where MRP = ARP = MC = AC

Assumptions of marginal productivity theory

(1) Perfect competition prevails in both product and factor market.
(2) Law of diminishing marginal returns operates on the marginal productivity of labour.
(3) Labour is homogeneous.

(4) Full employment prevails.
(5) The theory is based on long run.
(6) Modes of production in constant.

Criticism of marginal productivity theory:

1. The theory is based on the assumption of perfect competition. But perfect competition is unreal and imaginary. Thus theory seems in practicable.
2. The theory puts too much on demand side. It ignores supply side.
3. Production is started with the combination of four factors of production. It is ridiculous to say that production has increased by the additional employment of one worker. Employment of an additional laborer amounts nothing in a big scale industry.
4. The theory is static. It applies only when no change occurs in the economy. Under depression wage cut will not increase employment.
5. This, theory explains that wages will be equal to MRP and ARP.
6. It is difficult to measure MRP because any product is a joint product of both fixed and variable factors.
7. According to Watson the theory is cruel and harsh. This theory never takes into consideration the marginal product of old, aged, blind etc.

THE WAGES-FUND THEORY OF WAGES

1) Wages Fund Theory: This theory is associated with the name of J.S. Mill. According to Wages Fund Theory wages depend upon two quantities, viz.:
   (i) The wage fund or the circulating capital set aside for the purchase of labour, and
   (ii) The number of labourers seeking employment.
2) Since, the theory takes the wage fund as fixed, wages could rise only by a reduction in the number of workers. According to this thoery, the efforts of trade unions to raise wages are futile. If they succeeded in raising wages in one trade, it can only be at the expense of another, since the wage fund is fixed and the trade unions have no control over population. According to this theory, therefore, trade unions cannot raise wages for the labour class as a whole.
3) This theory has been widely criticised and stands rejected now. Even J.S. Mill himself recanted it in the second edition of his book 'Principles of Political Economy'. Mill thought that wages were paid out of circulating capital alone. Whether the source of wages is capital or the present products, has been the subject of a keen controversy in the past. The fact is that in some cases, where the process of production is short (e.g., final stages of the productive process), wages are paid out of the present production. On the other hand, when a process of production is long, the labourer obviously does not obtain wages from the product of his labour either directly or through exchange. In such cases, wages mainly come out of capital. This theory is inapplicable in highly industrialized countries, but, it is applicable in an under-developed country suffering from capital deficiency, where the wages cannot be increased unless national income is increased and capital accumulated through industrialisation.

MODERN OR SUPPLY –DEMAND THEORY OF WAGES

Modern Theory of Wages:

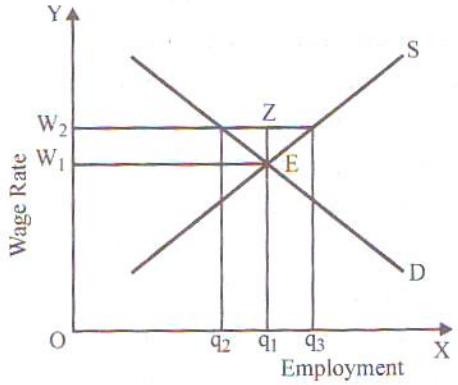
1) According to this theory, the wages are determined by the interaction of demand and supply as in the case of ordinary commodity. Thus, this theory is also referred to demand and supply theory.
2) Demand for Labour: According to the modern theory of wages, the demand for labour reflects partly labourer's productivity and partly the market value of the product at different levels of production.
3) **Demand of Labour**: The demand of labour depends on:
   a) Derived Demand: The demand for labour is a derived demand. It is derived from the demand for the commodities it helps to produce. Greater the consumer demand for the product, greater the producer demand for labour required to produce that commodity. It may be observed that it is expected demand and not existing demand for the product that determines demand for labour. Hence, the expected increase in the demand for a product will increase the demand for labour.
   b) Elasticity of Demand for Labour: The elasticity of demand for labour depends on the elasticity of demand for commodity. According to this theory, the demand for labour will generally be inelastic if their wages form only a small proportion of the total wages. The demand, on the other hand, will be elastic if the demand for product is also elastic or if cheaper substitutes are available.
   c) Prices & Quantities of Co-Operating Factors: The demand for labour also depends on the prices and the quantities of the co-operating factors. If the machines are costly, the demand for labour will be increased. The greater the demand for the co-operating factors the greater will be the demand for labour, and vice versa.
   d) Technical Progress: Another factor that influences the demand for labour is technical progress. In some cases labour and machineries are used in definite proportions.
   e) After considering all relevant factors as discussed above, the employer is governed by one fundamental factor, viz., marginal productivity.
4) **Supply of Labour**: The supply of labour depends on:
   (a) The number of workers of a given type of labour which would offer themselves for employment at various wage rates, and
   (b) The number of hours per day or the number of days per week they are prepared to work,

Over a short period of time, reduction in wages may not cause any reduction in the supply of labour. But if wages are driven too low, competition among employers themselves will push them up. Even over a long period, the supply of labour is not very elastic.

Thus, the supply of labour will depend on the elasticity of demand for income which will vary according to the worker's temperament and social environment. When the workers' standard of living is low, they may be able to satisfy their wants with a small income and when they have made

that much, they may prefer leisure to work. That is why it happens that sometimes increase in wages leads to a contraction of the supply of labour.

5) Interaction of Demand and Supply: The final wage rate is determined by the equilibrium of demand & supply.



THEORY OF INTEREST

MODERN THEORY OF INTEREST / THE HICKS-HANSEN THEORY OR IS-LM MODEL

In expounding the modern theory of interest, Professor Hansen, in his Monetary Theory and Fiscal Policy, points out that there are four determinants of the rate of interest:
1. The investment demand schedule;
2. The consumption function;
3. The liquidity preference schedule; and
4. The quantity of money.

Using the classical terminology, there are, four determinants of income and the rate of interest:
(1) productivity;
(2) thrift;
(3) the desire for holding cash; and
(4) the quantity of money or money supply.

The equilibrium condition of these four variables together determines the rate of interest. According to Hansen, "an equilibrium condition is reached when the desired volume of cash balances equals the quantity of money.

When the marginal efficiency of capital is equal to the rate of interest, and finally, when the volume of investment is equal to the normal or desired volume of saving. And these factors are interrelated."

In short, according to the modern theory of interest, when the four variables, viz. saving, investment, liquidity preference and the quantity of money, are integrated with income, we get a fairly satisfactory explanation of the rate of interest.

For this purpose, a synthesis between the loanable funds formulation and the liquidity preference theory is evolved by neo-Keynesian economists (Hicks, Lerner and Hansen).

In fact, the aim of such a synthesis was to combine the real sector and the monetary sector as well as the flow and stock variables of these distributive theories (loanable funds and liquidity preference) together as an explanation of interest rate determination.

Thus, the neo-Keynesian synthesis evolved two schedules, the IS schedule and the LM schedule the former showing the equilibrium between the flow variables in the real sector and the latter representing the equilibrium of the stock variables.

When the IS and LM schedules are plotted graphically, their respective curves (the IS curve and the LM curve) give us the equilibrium rate of interest at the point of their intersection. At this equilibrium rate of interest:
(i) Total saving = total investment;
(ii) Total demand for money = total supply of money; and
(iii) The real as well as the monetary sectors are in equilibrium.
Let us now see, how these two schedules (IS and LM) and the respective curves are constructed.

The IS Schedule:

1. From the loanable funds formulation, we get a family of loanable fund schedules or saving schedules at various income levels. These together with the investment demand schedule gives us the IS schedule, and when represented diagrammatically we get the IS curve.
2. The IS curve denotes equilibrium in the real sector, showing various combinations of the levels of income (Y) and interest rate (r) at which there is equilibrium between aggregate real saving and real investment.
3. Now, in order to derive the IS schedule, we have to find out those rates of interest and those levels of income corresponding to which investment is equal to saving from a given investment schedule and a given saving schedule. For this, let us construct hypothetical schedules.To present the above schedules diagrammatically in a generalised form, let Y_1, Y_2, Y_3, Y_4 and V_5 represent respectively the income levels of Rs.1000, 1500, 2000, 2500 and 3000 crores in the economy.
4. We may assume that at these income levels, S_1, V_1, S_2, Y_2, S_3, V_3, S_4, Y_4, and S_5, V_5 curves represent volumes of savings of Rs. 100, 200, 300, 400 and 500 crores respectively.

   It is the investment curve when the income level is Y_1; the equilibrium between saving and investment is established at $R_1 M_1$ rate of interest (7% in the given illustration).

Or at Y_1 income level, R_1M_1 is the equilibrium rate of interest which brings about equality between saving and investment (in our example, at 7% rate of interest S = 100 crores and / = 100 crores. (S - I).

Likewise, at the income level Y_3, R_2M_2 rate of interest establishes equilibrium between saving and investment. And in the same manner, at income levels Y_2, Y_4 and Y_5, the equilibrium between saving and investment is established by R_3M_3, and R_4M_4 and R_5M_5 rates of interest respectively.

Now, connecting together the various rates of interest equalising saving and investment at the corresponding levels of income, Y_1, Y_2 Y_5 etc., we then get a curve called the IS.

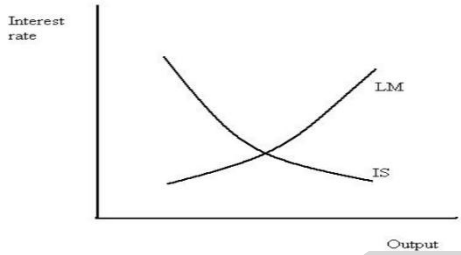
5. It is easy to see from the diagram that each point along the IS curve gives different income levels at which the savings and investment are in equilibrium.
6. The IS curve slopes downward to the right for the simple reason that at higher levels of income, saving is greater, but the greater the saving, the lower the rate of interest.Thus, as the level of income rises, the rate of interest declines, with increasing saving. And, as the rate of interest declines, investment rises till saving equals investment.

The LM Schedule:

1. In order to observe the monetary sector equilibrium in the theory, neo-Keynesians have derived the LM schedule or curve from Keynes' liquidity preference theory.
2. It has been pointed out that the liquidity preference function L and the money supply M also establish a relation between the income and the rate of interest. Hansen states that from the Keynesian formulation we get a family of liquidity preference schedules at various income levels.These, together with the supply of money fixed by the monetary authority, give us the LM schedule. The LM schedule tells us what the various rates of interest will be (given the quantity of money and the family of liquidity preference schedules) at different levels of income.
3. In fact, the LM schedule shows the relation that (given a certain liquidity or demand schedule for money) and a certain quantity of money fixed by the monetary authority; the rate of interest will be low when income is low and high when income is high.
4. Thus, the LM schedule is the schedule showing the relation between income and interest (given the L function and the supply of M) when the desired cash equals the actual cash, or when L - M.This means, the LM schedule presupposes equilibrium between L and M, just as the IS schedule presupposes equilibrium between I and S [4].

Determination of the Rate of Interest:

According the modem theory of interest, the intersection of the IS and LM curves determines the rate of interest. Y" is how the real sector and the monetary sector are integrated by the neo-Keynesian synthesis in explaining interest rate determination.



It appears from this figure that:

1. With a given LM curve, when the IS is shifted to the right, income rises and the rate of interest also rises.
2. When the IS curve is constant and the LM curve is shifted to the right, the rate of interest falls and so on.

Thus, for a determinate theory of interest, we should view the interaction of the following factors: (1) the investment-demand function, (2) the saving function, (3) the liquidity preference function, and (4) the supply of money. Hansen, states that the Keynesian analysis, in a broad sense, involves all these.

In this sense, Keynes, unlike the neo-classicists, did formulate a determinate interest theory. But he failed to bring all the elements together in a comprehensive manner to formulate plainly an integrated theory of interest.

He, however, did not realise that liquidity preference plus the quantity of money can furnish not the rate of interest but only an LM schedule.

Thus, the credit goes to Professor Hicks for using the Keynesian tools in a proper manner to construct a comprehensive and determinate theory of interest.

In short, the modern theory of interest holds that productivity, thrift, liquidity preference, and the money supply are all important determinants of the rate of interest.

THE LIQUIDITY PREFERENCE THEORY OF INTEREST

1) What is liquidity preference : Liquidity means shift ability without loss. It refers to easy convertibility. Money is the most liquid assets. Money commands universal acceptability. Everybody likes to hold assets in form of cash money. If at all they surrender this liquidity they must be paid interest. As water is liquid and it can be used for anything at will, so also money can be converted to anything immediately.

Demand for money:

(a) The transaction motive:-

An individual for his day to day transaction demand money. A man has to buy food and medicines in his day to day life. For this purpose people want to keep some cash with them.

(b) The precautionary motive:

People demand to hold money with them to meet the unforeseen contingencies. An individual may become unemployed; he may fall sick or may meet serious accident. For all these misfortune, he demands money to hold with him. The amount of money under the precautionary motive depends on the individual's condition, economic as well as political which he lives.

(c) Speculative motive:

Under speculative motive people want to keep each with them to take advantage of the charges in the price of bonds and securities. People under speculative motive hold money in order to secure profit from the future speculation of the bond market. Money under the above three motives constitute the demand for money. An increase in the demand for money leads to a rise in the late of interest, a decrease in the demand for money leads to a fall in the rate of interest.

Supply of Money:

The supply of money is different from the supply of ordinary commodity. The supply of commodity is a flow whereas the supply of money is a stock. The aggregate supply of money in a community at any time is the sum of money stock of all the members of the society. The supply of money is controlled by the govt. The supply of money in existence consists of legal tender money, bank money and credit money. The supply of money is determined by the central bank of a country. The total supply of money is fixed at a particular point of time. The supply of money is not influenced by the rate of interest.

Equilibrium rate of interest:

The rate of interest is determined by the demand for money and supply of money. The equilibrium rate of interest is fixed at that point where supply of and demands for money are equal. If the rate of interest is high peoples demand for money (liquidity preference) is low. The liquidity preference function or demand curve states that when interest rate falls, the demand to hold money increases and when interest rate raises the demand for money, diminishes.

THEORY OF UNEMPLOYMENT

Types of unemployment

1) **Frictional unemployment** :Frictional unemployment is a kind of unemployment that occurs when people are "between jobs" or are looking for their first jobs. It is a kind of unemployment that occurs when the economy is trying to match people and jobs correctly. So, if you get fired for poor work, if you quit because you dislike your job, or if you are just looking for your first job, you are frictionally unemployed.

2) **Seasonal unemployment** : Seasonal unemployment occurs when people are not working because their jobs only exist at some times of the year. Agricultural and construction workers are examples of this type of unemployment.

3) **Structural unemployment** Structural unemployment occurs when a given set of skills is no longer needed in a given economy. For example, E.g. closure of mines, left many miners struggling to find suitable work. For example, there may be jobs available in the service sector, but unemployed miners don't have the relevant skills to be able to take the jobs

4) **Cyclical unemployment** : Cyclical unemployment, which economists say is the worst kind. In this kind of unemployment, people are out of work because the economy has slowed and there is no demand for whatever the workers make. This sort of unemployment occurs during recessions.

5) **Voluntary unemployment:** is a situation when a person is unemployed because of not being able to find employment of his/her own choice. It is a situation when a person is unemployed. Sometimes people reject employment opportunities if they do not receive desired wages or if they are not offered the kind of work they wish to do.

6) **Disguised Unemployment:** Disguised unemployment is the most widespread type of unemployment in under-developed countries. In under-developed countries, the stock of capital does not grow fast. The capital stock has not been growing at a rate fast enough to keep pace with the growth of population, the country's capacity to offer productive employment to the new entrants to the labour market has been severely limited. This manifests itself generally in two ways: (i) the prevalence of large-scale unemployment in the urban areas; and (ii) in the form of growing numbers engaged in agriculture, resulting in 'disguised unemployment'

CLASSICAL THEORY OF UNEMPLOYMENT

The classical theory of employment is based on the following assumptions.

1. There is existence of full employment without inflation.
2. There is a closed laissez-faire capitalistic economy.
3. There is perfect competition in labor market and product market.
4. Labor is homogenous.
5. Total output of the economy is divided between consumption and investment expenditure.

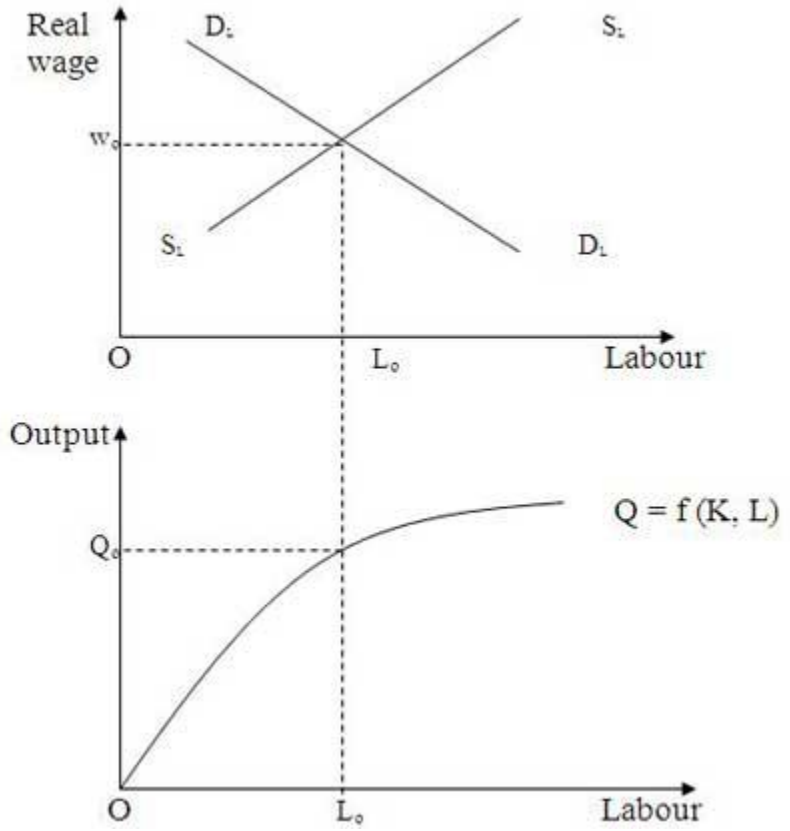
6. The quantity of money is given.
7. Wages and prices are flexible.
8. Money wages and real wages are directly related and proportional.

The main Postulates of classical theory are:

1) The basic contention of classical economists was that if wages and prices were flexible, a competitive market economy would always operate at full employment. That is, economic forces would always be generated so as to ensure that the demand for labour was always equal to its supply.

2) In the classical model the equilibrium levels of income and employment were supposed to be determined largely in the labour market. At lower wage rate more workers will be employed. That is why the demand curve for labour is downward sloping. The supply curve of labour is upward sloping because the higher the wage rate, the greater the supply of labour.

In the following figure the equilibrium wage rate (w_0) is determined by the demand for and the supply of labour. The level of employment is OL_0.



The lower panel of the diagram shows the relation between total output and the quantity of the variable factor (labour). It shows the short-run production function which is expressed

as Q = f (K, L), where Q is output, K is the fixed quantity of capital and L is the variable factor labour. Total output Q_o is produced with the employment of Lo units of labour. According to classical economists this equilibrium level of employment is the 'full employment' level. So the existence of unemployed workers was a logical impossibility. Any unemployment which existed at the equilibrium wage rate (W_o) was due to frictions or restrictive practices in the economy in nature.

3) The classical economists believed that aggregate demand would always be sufficient to absorb the full capacity output Q_o. In other words, they denied the possibility of under spending or overproduction. This belief has its root in Say's Law.

(a) Say's Law: According to Say's Law supply creates its own demand, i.e., the very act of producing goods and services generates an amount of income equal to the value of the goods produced. Say's Law can be easily understood under barter system where people produced (supply) goods to demand other equivalent goods. So, demand must be the same as supply. Say's Law is equally applicable in a modern economy. The circular flow of income model suggests this sort of relationship. For instance, the income created from producing goods would be just sufficient to demand the goods produced.

(b) Saving-Investment Equality: There is a serious omission in Say's Law. If the recipients of income in this simple model save a portion of their income, consumption expenditure will fall short of total output and supply would no longer create its own demand. Consequently there would be unsold goods, falling prices, reduction of production, unemployment and falling incomes.

However, the classical economists ruled out this possibility because they believed that whatever is saved by households will be invested by firms. That is, investment would occur to fill any consumption gap caused by savings leakage. Thus, Say's Law will hold and the level of national income and employment will remain unaffected.

(c) Saving-Investment Equality in the Money Market: The classical economists also argued that capitalism contained a very special market – the money market – which would ensure saving investment equality and thus would guarantee full employment. According to them the rate of interest was determined by the demand for and supply of capital. The demand for capital is investment and its supply is saving. The equilibrium rate of interest is determined by the saving-investment equality. Any imbalance between saving and investment would be corrected by the rate of interest. If saving exceeds investment, the rate of interest will fall. This will stimulate investment and the process will continue until the equality is restored. The converse is also true.

(d) Price Flexibility: The classical economists further believed that even if the rate of interest fails to equate saving and investment, any resulting decline in total spending would be neutralized by proportionate decline in the price level. That is, Rs 100 will buy two shirts at Rs 50, but Rs 50 will also buy two shirts if the price falls to Rs 25. Therefore, if

households saves more than firms would invest, the resulting fall in spending would not lead to decline in real output, real income and the level of employment provided product prices also fall in the same proportion.

(e) Wage Flexibility: The classical economists also believed that a decline in product demand would lead to a fall in the demand for labour resulting in unemployment. However, the wage rate would also fall and competition among unemployed workers would force them to accept lower wages rather than remain unemployed. The process will continue until the wage rate falls enough to clear the labour market. So a new lower equilibrium wage rate will be established. Thus, involuntary unemployment was logical impossibility in the classical model.

Keyne's Criticism of Classical Theory:

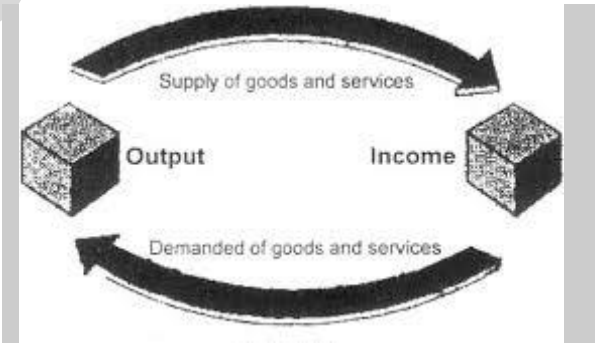
J.M. Keynes criticized the classical theory on the following grounds:

1. According to Keynes saving is a function of national income and is not affected by changes in the rate of interest. Thus, saving-investment equality through adjustment in interest rate is ruled out. So Say's Law will no longer hold.
2. The labour market is far from perfect because of the existence of trade unions and government intervention in imposing minimum wages laws. Thus, wages are unlikely to be flexible. Wages are more inflexible downward than upward. So a fall in demand (when S exceeds I) will lead to a fall in production as well as a fall in employment.
3. Keynes also argued that even if wages and prices were flexible a free enterprise economy would not always be able to achieve automatic full employment.

SAYS LAW OF MARKET

1) Say's Law is the foundation of classical economics. Assumption of full employment as a normal condition of a free market economy is justified by classical economists by a law known as 'Say's Law of Markets'. It was the theory on the basis of which classical economists thought that general over-production and general unemployment are not possible.

2) Say's law states that the production of goods creates its own demand



The basic consumptions of says law are :

(a) Perfectly competitive market and free exchange economy.

(b) Free flow of money incomes. All the savings must be immediately invested and all the income must be immediately spent.

(c) Savings are equal to investment and equality must bring about by flexible interest rate.

(d) No intervention of government in market operations, i.e., a laissez faire economy, and there is no government expenditure, taxation and subsidies.

(e) Market size is limited by the volume of production and **aggregate demand is equal to aggregate supply.**

(f) It is a **closed economy.**

The Says law has the following implications:

1. **Production creates market (demand) for goods**: when the producer obtained the various inputs to be used in the production process they generate the necessary income.

2**. Barter system is its basis**: in its original form the law is applicable to a barter economy where goods are ultimately sold for goods. Therefore, whatever produced is ultimately consumed in the economy.

3. **General over production is impossible**: if the production process is continuing under normal condition, then there will be no deficiency for the producer in the market. According to say, work being unpleasant no person will work to make a product unless he wants to exchange it for some other product which he desires therefore the very act of supplying goods implies a demand for them. In such a situation there cannot be general overproduction because the supply of goods will not exceed demand as a whole.

4**. Saving investment Equality**: Income occurring to the factors owners in the form of rent, wages and interest is not spent on consumption but some proportion out of it is saved which is automatically invested for further production.

5**. Rate of interest as a determinant factor**: If there is any gap between saving and investment, the rate of interest brings about the equality between two

6. **Flexibility between interest and wage rate**: The theory assumes the part of income is saved and available for investment. If at any point of time saving is more then investment, the rate of interest will fall, which will result in low savings and more investments. At a lower rate of interest, household will like to save less, where as producers will like or invest more and economy will be in equilibrium.If there are unemployed persons in an economy, wage rate will fall. This will induce entrepreneurs to demand more labor. Ultimately all labor will be absorbed. The economy will be in full employment equilibrium.

This view suggests that the key to economic growth is not increasing demand, but increasing production. Say's views were expanded on by classical economists, such as James Mill and David Ricardo.

Pigou's Formulation of Says law

1. According to Professor Pigou, the unemployment which exists at any time is because of the fact that changes in demand conditions are continually taking place and that frictional resistances prevent the appropriate wage adjustment from being made instantaneously.
2. Thus, according to classical theory, there could be small amounts of 'frictional unemployment' attendant on changing from one job to another but there could not be 'involuntary unemployment' for a long period.
3. According to Professor Pigou, if people were unemployed, wages would fall until all seeking employment were in fact employed.
4. Involuntary unemployment which was found at times of depression was because of the fact that wages were kept too high by the actions of labour unions and governments. Therefore, Professor Pigou advocated that a general cut in money wages at a time of depression would increase employment.
5. According to Pigou, perfectly elastic wage policy would abolish fluctuations of employment and would ensure full employment.

Criticism of Classical Theory

1. **Supply may not create its own demand** when a part of the income is saved. Aggregate demand is not always equal to aggregate supply.
2. **Employment in a country cannot be increased by cutting general wages.**
3. **There is no direct relationship between wages and employment.**
4. **Interest rate adjustments cannot solve savings-investment problem.**
6. Classical economists have made the economy completely self-adjusting and self-reliant. **An economy is not so self-adjusting and government intervention is unobvious.**
7. Classical economists have made the wages and prices so much flexible. **In practical, wages and prices are not so flexible. It will create chaos in the economy.**
8. **Money is not a mere medium of exchange.** It has an essential role in the economy.
9. **The classical theory has failed to explain the occurrence of trade cycles.**

KEYNESIAN THEORY OF EMPLOYMENT

1) Keynes has strongly criticised the classical theory in his book 'General Theory of Employment, Interest and Money'. His theory of employment is widely accepted by modern economists. Keynesian economics is also known as 'new economics' and 'economic revolution'. Keynes has invented new tools and techniques of economic analysis

such as consumption function, multiplier, marginal efficiency of capital, liquidity preference, effective demand, etc.

2) In the short run, it is assumed by Keynes that capital equipment, population, technical knowledge, and labour efficiency remain constant. That is why, according to Keynesian theory, volume of employment depends on the level of national income and output. Increase in national income would mean increase in employment. The larger the national income the larger the employment level and vice versa. That is why, the theory of Keynes is known as 'theory of employment' and 'theory of income'.

Keynes Theory can be explained as:

1) **Effective Demand:** According to Keynes, the level of employment in the short run depends on aggregate effective demand for goods in the country. Greater the aggregate effective demand, the greater will be the volume of employment and vice versa. According to Keynes, the unemployment is the result of deficiency of effective demand. Effective demand represents the total money spent on consumption and investment. The equation is:

Effective demand = National Income (Y) = National Output (O)

The deficiency of effective demand is due to the gap between income and consumption. The gap can be filled up by increasing investment and hence effective demand, in order to maintain employment at a high level.

2) According to Keynes, the level of employment in effective demand depends on two factors:

(a) Aggregate supply function, and
(b) Aggregate demand function.

(a) Aggregate supply function:

1. According to Dillard, the minimum price or proceeds which will induce employment on a given scale, is called the 'aggregate supply price' of that amount of employment.
2. If the output does not fetch sufficient price so as to cover the cost, the entrepreneurs will employ less number of workers.
3. Therefore, different numbers of workers will be employed at different supply prices.
4. Thus, the aggregate supply price is a schedule of the minimum amount of proceeds required to induce varying quantities of employment.
5. We can have a corresponding aggregate supply price curve or aggregate supply function, which slopes upward to right.

(b) Aggregate demand function:

1. The essence of aggregate demand function is that the greater the number of workers employed, the larger the output. That is, the aggregate demand price increases as the amount of employment increases, and vice versa.

2. The aggregate demand is different from the demand for a product. The aggregate demand price represents the expected receipts when a given volume of employment is offered to workers.
3. The aggregate demand curve or aggregate demand function represents a schedule of the proceeds of the output produced by different methods of employment.

Significance of Keynesian Theory:

1. Keynes has given a new approach, i.e., **Macro-approach** to the field of economics. His theory has several names: theory of income and employment, demand-side theory, consumption theory, and macro-economic theory. In fact, he has brought about a revolution in economic analysis, often known as 'Keynesian Revolution'.
2. Keynes' theory has **completely demolished the idea of full-employment** and forwards the idea of under-employment equilibrium. He states that employment level in the economy can only be increased by increasing investment.
3. The **new economic tools and techniques** developed by Keynes have enabled the today's economists to draw correct conclusions on the economic situation of a country. Such tools are consumption function, multiplier, investment function, liquidity preference, etc.
4. Keynes has **integrated the theory of money with the theory of value and output.**
5. Keynes has first time introduced a **dynamic economic theory**, in order to depict more realistic situation of the economy.
6. He also states the reasons of excess or deficiency of aggregate demand through **inflationary and deflationary gap analysis**.
7. Keynes' theory is a general theory and therefore, can be **applied to all types of economic systems.**
8. Keynes **influenced on practical policies** and criticised the policy of surplus budget. He advocated deficit financing, if that sited the economic situation in the country.
9. Keynes has **emphasised on suitable fiscal policy** as an instrument for checking inflation and for increasing aggregate demand in a country. He advocated extensive public work programmes as an integral part of government programmes in all countries for expanding employment.
10. He **advised several monetary controls** for the central bank, which in turn will act as the instrument of controlling cyclical fluctuations.
11. Keynesian theory has played **a vital role in the economic development** of less-developed countries.
12. He **rejected the theory of wage-cut** as a means of promoting full-employment.
13. Keynes' theory has given rise to the **importance of social accounting or national income accounting.**

PRODUCTION FUNCTION

1) Production is the process of conversion of inputs into outputs.
2) It is the creation of utility and addition of value
3) Production function is the relationship between inputs & output of a commodity
4) The mathematical expression of production function is –

$Q_x = f(x_1, x_2, x_3, \ldots\ldots x_n)$

$O_x \rightarrow$ Output of commodity X.

f = Function of

$x_1, x_2, x_3, \ldots\ldots x_n \rightarrow$ Inputs

5) The inputs/resources used for production are called factors of production. These are namely land, labour, capital & entrepreneur.

Attributes of production function

1. It indicates a functional relationship between physical inputs and physical outputs. For example, if we have two factors, say, labour (L) and capital (K) then the production function Q = f (L, K)
2. The production function is always in relation to a period of time. It denotes the flow of inputs resulting in a flow of outputs during a particular period of time. This is due to the fact when the firm wants to increase the production, it can either employ "some factors" additionally or increase "all the factors" in accordance with availability of the time period. Later we will study it as short period and long period.
3. The production function can specify either the maximum quantity of output that can be produced by a given set of input or the minimum quantity of inputs required for producing certain level of output.
4. The quantity of inputs is dependent upon the state of technology available and firm's managerial ability to use them. In order to simplify things the state of technology is considered to be given.
5. Production function takes into account the most efficient technology and methodology available at a time.
6. Production function is purely a technology relationship between input and output. It has nothing to do with the nominal relationship between input and output. It has nothing to do with the nominal price of factors; or value of quantity produced by them.

Fixed factors & variable factors:

1) Fixed Factor (FF)

a. Fixed factors refer to those factors of production which cannot be changed during short run.
b. These are used in a fixed quantity in the short run.
c. These factors can be changed only in the long run.
d. Example-land, plant and machinery, factory building etc.

2) Variable Factor (VF)

a. Variable factor refer to those factors of production which can be changed during short period.
b. The quantity of variable inputs varies according to the level of output.
c. Example-labour, raw material etc.

Time Element in Production Function
Short Run and Long Run
Short Run: Short refer to a period of time in which a firm cannot change its fixed factors of production only variable factors can be changed.
Long Run: Long run refers to a time period during which a firm can change all the factors of production. In the long run, all inputs are variable. Therefore the distinction between fixed factors and variable factors will disappear.

Basic Concepts of Production

1. **Total product or Total physical product (TP or TPP)**
   Total product refers to the total volume of a commodity produced by a firm with given inputs during a given period.
2. **Average product or Average physical product (AP or APP)**
   Average product is per unit product of a variable input
   It is obtained by dividing the total product (TP) by the units of a variable factor.
   Symbolically, $\boldsymbol{AP = \frac{TP}{L}}$
3. **Marginal product or Marginal physical product (MP or MPP)**

Marginal product is an addition to the total product when an additional unit of variable factor (labour) is employed.

Law of Variable Proportions

The Law of Variable Proportions (also called as returns to factor or Laws of Returns) is discussed under the situation of having one factor variable and another factor being used in fixed quantity if there are only two factors of production. This alters the proportions between factors; therefore, it is called as Law of Variable Proportions. The law is applicable for short run. Here $Q_x=f(L)$.

The law can be explained with the help of below table:

Units of Capital (K)	Units of Labour (L)	TP (Units) (Q)	AP $\left(\frac{Q}{L}\right)$	MP $\left(\frac{\Delta Q}{\Delta L}\right)$	
1	0	0	0	0	
1	1	70	70	70	Stage I
1	2	160	80	90	
1	3	270	90	110	
1	4	360	90	90	
1	5	430	86	70	
1	6	498	83	68	Stage II
1	7	546	78	48	
1	8	546	68.25	0	
1	9	522	58	-24	
1	10	470	47	-52	Stage III

First Stage- Stage of Increasing Returns

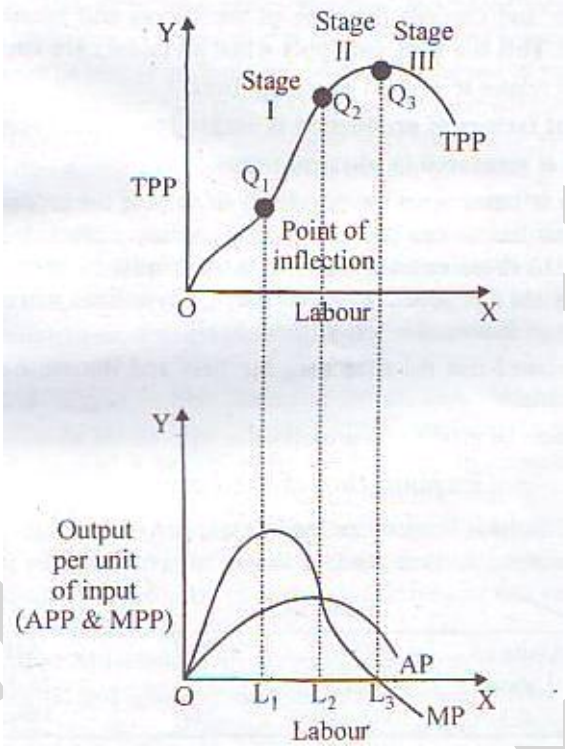
- In this stage as the input of variable factor (labour) increases, marginal product (MP) tends to increase and total product (TP) increases at increasing rate because there is underutilization of the fixed input
- MP also tends to rise alongwith AP.

Second Stage- Stage of Diminishing Returns

- In this stage, increase in the input of variable factor (Labour) is followed by a decrease in MP but it remains positive and TP increases at decreasing rate because there is pressure on fixed input.

Third Stage- Stage of Negative Returns

- In this stage, increase in the units of variable factor (labour) renders MP negative and TP starts declining because there is too much of variable input in relation to the fixed input.



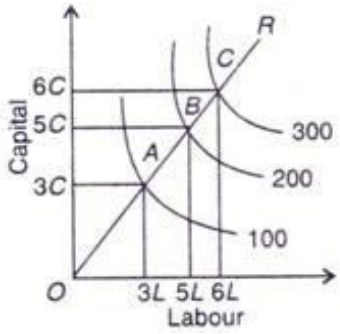
THE LAWS OF RETURNS TO SCALE: PRODUCTION FUNCTION WITH TWO VARIABLE INPUTS

The laws of returns to scale refer to the effects of a change in the scale of factors (inputs) upon output in the long run when the combinations of factors are changed in the same proportion.

If by increasing two factors, say labour and capital, in the same proportion, output increases in exactly the same proportion, there are constant returns to scale. If in order to secure equal increases in output, both factors are increased in larger proportionate units, there are decreasing returns to scale. If in order to get equal increases in output, both factors are increased in smaller proportionate units, there are increasing returns to scale.

Increasing Returns to Scale:

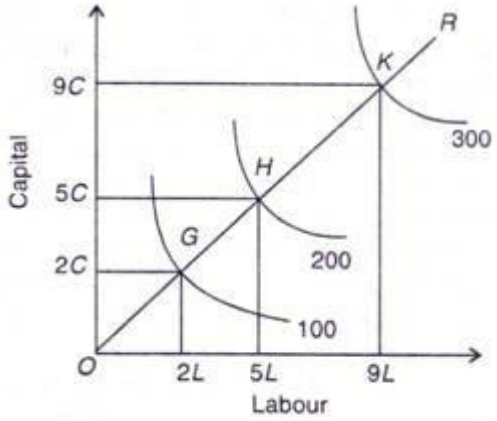
Below figure shows the case of increasing returns to scale where to get equal increases in output, lesser proportionate increases in both factors, labour and capital, are required.



It follows that in the figure:
100 units of output require 3C + 3L
200 units of output require 5C + 5L
300 units of output require 6C + 6L
So that along the expansion path OR, OA > AB > BC. In this case, the production function is homogeneous of degree greater than one. The increasing returns to scale are attributed to the existence of indivisibilities in machines, management, labour, finance, etc. Some items of equipment or some activities have a minimum size and cannot be divided into smaller units. When a business unit expands, the returns to scale increase because the indivisible factors are employed to their full capacity.
Increasing returns to scale also result from specialisation and division of labour. When the scale of the firm expands there is wide scope for specialisation and division of labour. Work can be divided into small tasks and workers can be concentrated to narrower range of processes. For this, specialized equipment can be installed.

Thus with specialization efficiency increases and increasing returns to scale follow:
Further, as the firm expands, it enjoys internal economies of production. It may be able to install better machines, sell its products more easily, borrow money cheaply, procure the services of more efficient manager and workers, etc. All these economies help in increasing the returns to scale more than proportionately.
Not only this, a firm also enjoys increasing returns to scale due to external economies. When the industry itself expands to meet the increased long-run demand for its product, external economies appear which are shared by all the firms in the industry. When a large number of firms are concentrated at one place, skilled labour, credit and transport facilities are easily available.
Subsidiary industries crop up to help the main industry. Trade journals, research and training centres appear which help in increasing the productive efficiency of the firms. Thus these external economies are also the cause of increasing returns to scale.

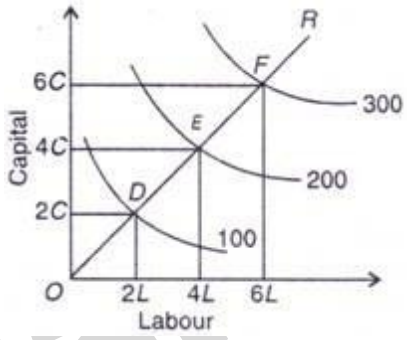
Decreasing Returns to Scale:
Below Figure shows the case of decreasing returns where to get equal increases in output, larger proportionate increases in both labour and capital are required.



It follows that:
100 units of output require 2C + 2L

200 units of output require 5C + 5L
300 units of output require 9C + 9L
So that along the expansion path OR, OG < GH < HK.
In this case, the production function is homogeneous of degree less than one. Returns to scale may start diminishing due to the following factors. Indivisible factors may become inefficient and less productive. Business may become unwieldy and produce problems of supervision and coordination.
Large management creates difficulties of control and rigidities. To these internal diseconomies are added external diseconomies of scale. These arise from higher factor prices or from diminishing productivities of the factors. As the industry continues to expand the demand for skilled labour, land, capital, etc. rises.
There being perfect competition, intensive bidding raises wages, rent and interest. Prices of raw materials also go up. Transport and marketing difficulties emerge. All these factors tend to raise costs and the expansion of the firms leads to diminishing returns to scale so that doubling the scale would not lead to doubling the output.

Constant Returns to Scale:
Below Figure shows the case of constant returns to scale. Where the distance between the isoquants 100, 200 and 300 along the expansion path OR is the same, i.e., OD = DE = EF. It means that if units of both factors, labour and capital, are doubled, the output is doubled. To treble the output, units of both factors are trebled.



It follows that:
100 units of output require
1 (2C + 2L) = 2C + 2L
200 units of output require
2 (2C + 2L) = 4C + 4L
300 units of output require
3 (2C + 2L) = 6C + 6L
The returns to scale are constant when internal economies enjoyed by a firm are neutralised by internal diseconomies so that output increases in the same proportion. Another reason is the balancing of external economies and external diseconomies.
Constant returns to scale also result when factors of production are perfectly divisible, substitutable, homogeneous and their supplies are perfectly elastic at given prices. That is why, in the case of constant returns to scale, the production function is homogeneous of degree one.

ECONOMIES AND DISECONOMIES OF SCALE

Economies of scale are advantages that arise for a firm because of its larger size, or scale of operation. These advantages translate into lower unit costs (or improved **productive efficiency**), although some economies of scale are not so easy to quantify.

In some markets, firms have to be of at least a certain size to be able to compete at all, because of the minimum level of investment required; economists call this **minimum efficient scale**.

On the other hand, inefficiencies can also creep in because of increased size, known as **diseconomies of scale**

In the correct sense of the term, **economies and diseconomies of scale** relate to advantages and disadvantages of an ***increase*** in the firm's productive capacity – such as moving to a larger factory or installing completely new technology. Do not confuse these terms with **capacity utilisation**, which is the degree to which the***current*** scale of operations is actually being used.

Economies of scale can be 'internal' (specific to an individual firm) or external (advantages that benefit the industry as a whole).

The main kinds of *internal* **Economies of Scale** are:

Purchasing – firms producing on a larger scale should be able to *bulk buy* raw materials or product for resale in larger quantities. They may be able to cut out wholesalers by buying direct from producers, and transport costs per unit may also be reduced. The firm might also be buying in large enough quantities to make very specific demands about product quality, specifications, service and so on, so that supplies exactly match their needs.

Technical – it may be cost-effective to invest in more advanced production machinery, IT and software when operating on a larger scale.

Managerial – larger firms can afford to have specialist managers for different functions within a business – such as Marketing, Finance and Human Resources. Furthermore, they may be able to pay the higher salaries required to attract the best people, leading to better planning and decision making.

Specialisation – with a larger workforce, the firm may be better able to divide up the work and recruit people whose skills very closely match the requirements of the job.

Marketing – more options are available for larger firms, such as television and other national media, which would not be cost-effective for smaller producers. The marketing cost for selling 10 million items might be no greater than to sell 1 million items. Larger firms might find it easier to gain publicity for new launches simply because of their existing reputation.

Financial – there is a wider range of finance options available to larger firms, such as the stock market, bonds and other kinds of bank lending. Furthermore, a larger firm is likely to be perceived by banks as a lower risk and the cost of borrowing is likely to be lower.

Risk bearing – a larger firm can be safer from the risk of failure if it has a more diversified product range. A larger firm may have greater resilience in the case of a downturn in its market because of larger reserves and greater scope to make cutbacks.

Social and welfare – larger firms are more likely to be able to justify additional benefits for employees such as pension funds, healthcare, sports and social facilities, which in turn can help attract and retain good employees.

External economies of scale

External economies of scale arise from firms in related industries operating in a concentrated geographical area; suppliers of services and raw materials to all these firms can do so more efficiently. Infrastructure such as roads and sophisticated telecommunications are easier to justify.

There is also likely to be a growing local pool of skilled labour as other local firms in the industry also train workers. This gives a larger and more flexible labour market in the area.

Diseconomies of scale

These are inefficiencies that can creep in when a firm operates on a larger scale (do not confuse with high capacity utilisation). The main diseconomies of scale are:

Lack of motivation – in larger firms, workers can feel that they are not appreciated or valued as individuals - see **Mayo** and **Herzberg**. It can be more difficult for managers in larger firms to develop the right kind of relationship with workers. If motivation falls, productivity may fall leading to inefficiencies.

Poor communication – it can be easier for smaller firms to communicate with all staff in a personal way. In larger firms, there is likely to be greater use written of notes rather than by explaining personally. Messages can remain unread or misunderstood and staff are not properly informed.

Co-ordination – a very large business takes a lot of organising, leading to an increase in meetings and planning to ensure that all staff know what they are supposed to be doing. New layers of management may be required, adding to costs and creating further links in the chain of communication.

COST CONCEPTS

Cost may be defined as price paid for different factors of productions involved in producing certain commodities.

ELEMENTS OF COST

(1) Money Cost:- It is the cost which is expressed or calculated in monetary terms and is based on accountant's point of view.

Money cost has three elements:-

(a) **Explicit Cost: -** Cost consist of all the payments made on basis of contract to various factors of production employed by a firm namely prices paid for raw materials, rent, wages, salaries etc.

(b) **Implicit Cost: -** Payment made to owned factors of production like owned capital, owned labour etc are called implicit cost. These factors of production are personally owned by the producer/ firm used for the business purpose.

(c) Normal Cost: - It is the minimum profit a firm should get in order to remain in an industry. It is over explicit and implicit cost of a firm.

Money Cost = Explicit cost+ Implicit Cost + Normal Profit

(2) Real Cost:- This type of cost is calculated by a sociologist. He is concerned with pains, sacrifices and efforts made by the society in production of a commodity.

(3) Opportunity Cost:- It is also called alternative cost or transfer cost. Opportunity cost is the cost sacrificed for one alternative for obtaining the next best possible alternative. For ex. Commodity x is produced by sacrificing the production of y commodity so opportunity cost of x will be the cost of production of y commodity.

(4) Direct Cost And Indirect Cost :- Direct cost is the cost directly concerned with the production of commodity. ex:- Cost on raw material, wages, fuel etc. where as indirect cost is the cost which is not directly concerned with the production of commodity. For ex: supervision, administration cost, rent, office overheads etc.

(5) Incremental Cost And Sunk Cost:- Cost incurred when a business firm changes its business activities or nature of business operation is called on incremental cost.

Incremental Cost = Changed total cost – Initial total cost

Sunk cost are those cost which are not affected by the changes in the level of business activity or nature of business firm. These costs once incurred cannot be recovered easily.
Ex.;- Depreciation

(6)Fixed Costs And Variable Costs:- Fixed cost are those costs which are fixed weather production is being carried or not. Variable cost are those costs which vary with the change in production process. If there will be no production these costs will not incurred.

(7) Short Run And Long Run Costs :- Short run cost are those which are concerned with short run production of a firm i.e. fixed cost and variable costs.
Long run cost are concerned with long run production of a firm where all factors of production are variable and all cost are variable costs.

COST – OUTPUT RELATION DURING SHORT RUN

During short run time period two types of factors of production are employed under which one is fixed factor an others are variable factors of production. Raw material, semi finished material, unskilled labour, energy etc are variable inputs which can be changed during short run, Machines, Capital, Infrastructure, Salaries of managers etc are fixed inputs.

SHORT RUN COST

1. **Total Fixed Cost (TFC):-** Those cost which remain constant when the output is zero as well as it does not increases with increase in production are called total fixed cost (TFC).
   For Ex:- Plant, Land, Building, Machinery, Tools, Equipments, Insurance, Salaries of manager etc.
2. **Total Variable Cost (TVC):-** Those costs vary with the production of a commodity during short period and have direct relation with the change in production a called total variable costs (TVC). These costs are also called prime cost are direct costs. It increases with increase in production of output.
3. **Total Cost:-** Aggregate of total fixed cost and total variable cost increased by a firm in the production of any commodity is called total cost.
   Total cost (TC) = Total Fixed cost + Total Variable Cost (TVC)
   Total cost increases with change in output.

AVERAGE OR PER UNIT COST

1. **Average Fixed Cost:-** Average fixed cost is total fixed cost divided by the volume of output. AFC has inverse relation with output and it decreases with increase and increases with decrease in output. AFC curve in rectangular hyperbola in shape.
   AFC = TFC / Output

   i.e. $\frac{\text{Total Fixed Cost}}{\text{Output (in Units)}}$

2. **Average Variable Cost (AVC):-** Average variable cost is total variable cost divided by the volume of output. AVC falls with increase in output reaches its minimum and then starts rising. It is due to operation of law of returns. Shape of AVC curve is U shaped because of

operation of law of returns where at 1st stage i.e. during law of increasing returns production rises and cost decreases then at 2nd stage i.e. laws of constant & diminishing returns cost reaches at minimum and remains constant and at 3rd stage i.e. law of negative returns cost starts increasing.

AVC = TVC / Output

$$\text{i.e. } \frac{\text{Total Variable Cost}}{\text{Output (in Units)}}$$

3. **Average Costs (AC):-** Average cost or average total cost (ATC) is the aggregate of AFC & AVC.

AC = TC / Output i.e. = Total cost / Output Or AC = AFC + AVC

AC curve decreases with increase in output remains constant up to a point and then increases with increase in output.

4. **Marginal Cost (MC):-** Marginal cost is additional cost incurred in producing an additional unit of output.

MC = Δ TC / Δ Output

Marginal cost changes with the change in AVC and is independent of fixed cost. MC falls in beginning reaches at its minimum and there after rises. MC is also a U shaped curve.

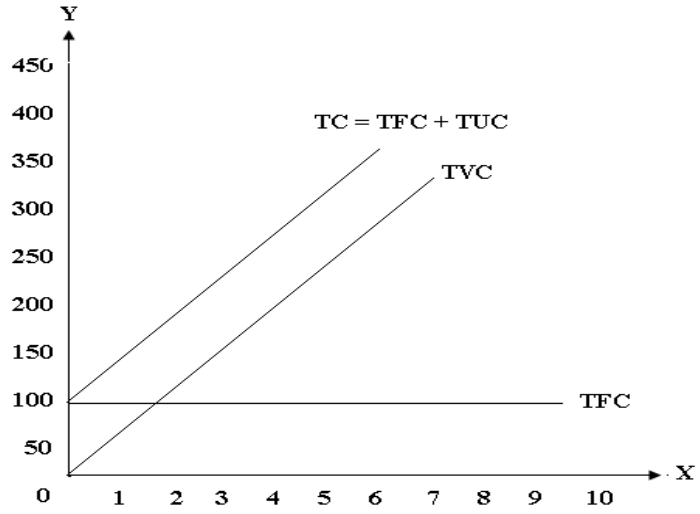
Output	Total Cost			Average Costs			
	TFC	TVC	TC	AFC	AVC	AC	MC
0	100	0	100	0	0	0	---
1	100	30	130	100	30	130	30
2	100	60	160	50	30	80	30
3	100	80	180	33.3	26.7	60	20
4	100	90	190	25	22.5	47.5	10
5	100	100	200	20	20.0	40.0	10
6	100	120	220	16.66	20.0	36.6	20
7	100	150	250	14.3	21.4	35.7	30
8	100	190	290	12.5	23.7	36.2	40
9	100	240	340	11.1	26.6	37.7	50
10	100	320	420	10	32.0	42.0	80

In above table TFC remains constant and TVC goes on increasing and TC is also increasing with increase in output. AFC is decreasing with increase in output. AVC decreases reaches to minimum and then increasing. AC decreases reach to minimum and then increase. MC decreases reach to minimum remains constant and then increases.

DIAGRAM 1st

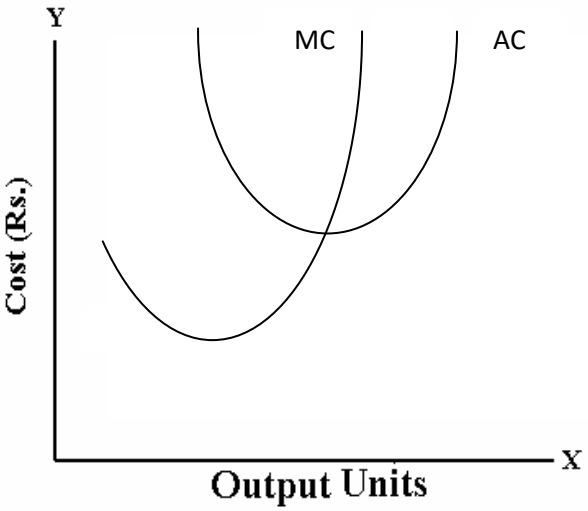
Output (In Units)

TFC remains constant weathers production is zero or 10units. TVC starts from O units and increases with increase in output. TC is the total of TVC and TFC.



AC, MC and AVC are U shaped curves because of the operations of law of returns. AFC curve shows a decreasing trend. MC curve passes through minimum point, point of AC and AVC.

RELATIONSHIP BETWEEN AC AND MC



(1) AC and MC fall in beginning but MC falls more rapidly than AC and MC is below AC or vice versa (AC > MC).
(2) When AC rises MC also rises but rises rapidly than AC and MC is more than AC or vice versa.(MC > AC)
(3) When AC is minimum it is equal to MC curve cuts AC curve at its minimum point.(MC=AC)

COST OUTPUT RELATION DURING LONG RUN

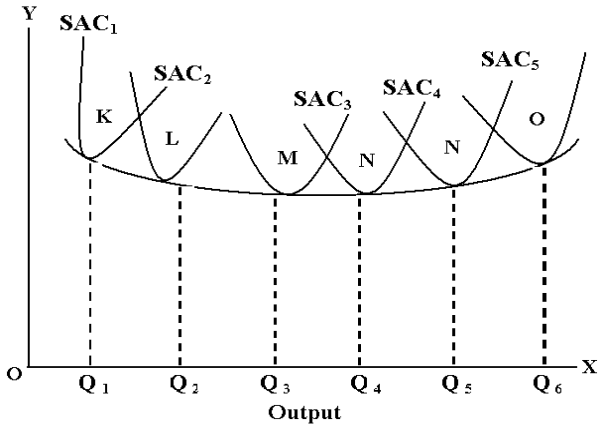
Long period gives sufficient time to business managers to change even the scale of production. All the factors of production are variable. All cost are variable and there is no fixed cost. In long run there is long run average cost curve and long run marginal cost curve.

Long Run Total Cost (Ltc) :- The long run total cost of production is the least possible cost of producing any given level of output when all inputs are variable.

Long Run Average Cost (Lac):- Long run average cost curve shows the lowest average cost of producing output when all inputs can be varied. LAC is also known by fallowing names:-

(1) **Envelope Curve**:- LAC is also known as envelop curve because it envelopes all the SAC curves. It indicates that LAC cannot exceed SAC and it will be surrounding the SAC, and does not rise upwards. Long run cost cannot be more than than short run cost.

(2) **Planning Curve:-** Lac is also known as planning curve as firm or a producer can decide that which plant size should be used to produce different quantities of output so that production is done at minimum cost .Usually rational produce selects plant size where LAC is at its minimum for the output production.



In above fig. LAC is shown which is tangent to all SAC curves.

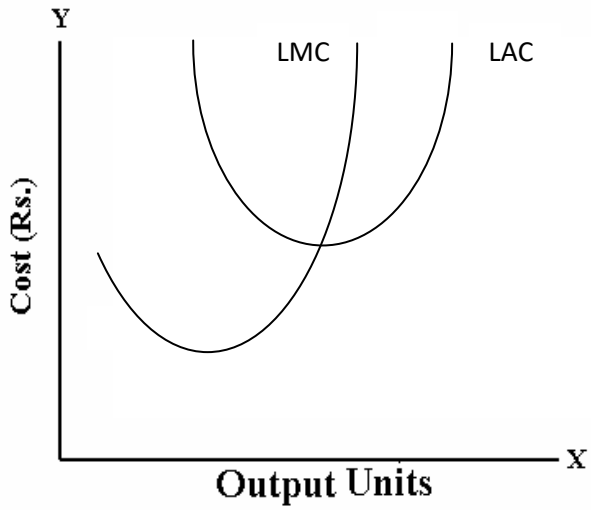
In order to produce OQ3 level of output corresponding point an LAC is K which is tangent to SAC_1 and therefore.

LONG RUN MARGINAL COST (LAC)

Long – run marginal cost curve is that which shows the extra cost incurred in producing one more unit of output when all inputs can be changed.

$$LMC = \frac{\Delta LTC}{\Delta Q}$$

RELATION BETWEEN LAC AND LMC



Relation between long-run marginal cost and long-run average cost is similar to that of what it is in short run AC and MC. The only difference in long run AC and MC is that long run MC and AC curve are more flat to than that of SAC and SMC, it is so because in long run all factors of production are variable and firm selects appropriate scale of production at minimum cost so cost increase in long run is gradual in comparison to short run curves. LAC is also a expanded U Shaped curve because of operation of laws of returns to scale.
As firm expend their output scale of operation also increased by firm so they will enjoy economies of scale but if these firm produce beyond their installed capacity of scale that results in increase in cost gradually.

FACTORS OF PRODUCTION

FACTORS OF PRODUCTION

1) Production is the process of conversion of inputs into outputs.
2) By production, we mean the process by which man utilizes or converts the natural resources, working upon them so as to make them satisfy human wants.
3) It is the creation of utility and addition of value. This creation of utility may be by way of creating goods in physical terms (called commodities) or non-physical terms (called services).
4) Production of all goods and services require the use of certain factors (or inputs). The inputs/resources used for production are called factors of production. These are namely land, labour, capital & entrepreneur.

LAND –

The term 'Land' in economics is often used in a wider sense. It does not mean only the surface of the soil, but it also includes all those natural resources which are the free gifts of nature.

It, therefore, means all the free gifts of nature. These natural gifts include: (i) rivers, forests, mountains and oceans; (ii) heat of sun, light, climate, weather, rainfall, etc. which are above the surface of land; (iii) minerals under the surface of the earth such as iron, coal, copper, water, etc. According to Marshall, "By land is meant… materials and forces which nature gives freely for man's aid in land, water, air, light and heat." Therefore, land is a stock of free gifts of nature

Characteristics of Land:

Land possesses the following characteristics:

1. Free Gift of Nature:

Man has to make efforts in order to acquire other factors of production. But to acquire land no human efforts are needed. Land is not the outcome of human labour. Rather, it existed even long before the evolution of man.

2. Fixed Quantity:

The total quantity of land does not undergo any change. It is limited and cannot be increased or decreased with human efforts. No alteration can be made in the surface area of land.

3. Land is Permanent:

All man-made things are perishable and these may even go out of existence. But land is indestructible. Thus it cannot go out of existence. It is not destructible.

4. Land is a Primary Factor of Production:

In any kind of production process, we have to start with land. For example, in industries, it helps to provide raw materials, and in agriculture, crops are produced on land.

5. Land is a Passive Factor of Production:

This is because it cannot produce anything by itself. For example, wheat cannot grow on a piece of land automatically. To grow wheat, man has to cultivate land. Labour is an active factor but land is a passive factor of production.

6. Land is Immovable:

It cannot be transported from one place to another. For instance, no portion of India's surface can be transported to some other country.

7. Land has some Original Indestructible Powers:

There are some original and indestructible powers of land, which a man cannot destroy. Its fertility may be varied but it cannot be destroyed completely.

8. Land Differs in Fertility:

Fertility of land differs on different pieces of land. One piece of land may produce more and the other less.

9. Supply of Land is Inelastic:

The demand for a particular commodity makes way for the supply of that commodity, but the supply of land cannot be increased or decreased according to its demand.

10. Land has Many Uses:

We can make use of land in many ways. On land, cultivation can be done, factories can be set up, roads can be constructed, buildings can be raised and shipping is possible in the sea and big rivers.

LABOUR

Labour includes both physical and mental work undertaken for some monetary reward. In this way, workers working in factories, services of doctors, advocates, ministers, officers and teachers are all included in labour. Any physical or mental work which is not undertaken for getting income, but simply to attain pleasure or happiness, is not labour.

For example, the work of a gardener in the garden is called labour, because he gets income for it. But if the same work is done by him in his home garden, it will not be called labour, as he is not paid for that work. So, if a mother brings up her children, a teacher teaches his son and a doctor treats his wife, these activities are not considered 'labour' in economics. It is so because these are not done to earn income.

Characteristics of Labour:

Labour has the following peculiarities which are explained as under:

1. Labour is Perishable:

Labour is more perishable than other factors of production. It means labour cannot be stored. The labour of an unemployed worker is lost forever for that day when he does not work. Labour can neither be postponed nor accumulated for the next day. It will perish. Once time is lost, it is lost forever.

2. Labour cannot be separated from the Labourer:

Land and capital can be separated from their owner, but labour cannot he separated from a labourer. Labour and labourer are indispensable for each other. For example, it is not possible to bring the ability of a teacher to teach in the school, leaving the teacher at home. The labour of a teacher can work only if he himself is present in the class. Therefore, labour and labourer cannot be separated from each other.

3. Less Mobility of Labour:

As compared to capital and other goods, labour is less mobile. Capital can be easily transported from one place to other, but labour cannot be transported easily from its present place to other places. A labourer is not ready to go too far off places leaving his native place. Therefore, labour has less mobility.

4. Weak Bargaining Power of Labour:

The ability of the buyer to purchase goods at the lowest price and the ability of the seller to sell his goods at the highest possible price is called the bargaining power. A labourer sells his labour for wages and an employer purchases labour by paying wages. Labourers have a very weak bargaining power, because their labour cannot be stored and they are poor, ignorant and less organised.

Moreover, labour as a class does not have reserves to fall back upon when either there is no work or the wage rate is so low that it is not worth working. Poor labourers have to work for their subsistence. Therefore, the labourers have a weak bargaining power as compared to the employers.

5. Inelastic Supply of labour:

The supply of labour is inelastic in a country at a particular time. It means their supply can neither be increased nor decreased if the need demands so. For example, if a country has a scarcity of a particular type of workers, their supply cannot be increased within a day, month or year. Labourers cannot be 'made to order' like other goods.

The supply of labour can be increased to a limited extent by importing labour from other countries in the short period. The supply of labour depends upon the size of population. Population cannot be increased or decreased quickly. Therefore, the supply of labour is inelastic to a great extent. It cannot be increased or decreased immediately.

6. Labourer is a Human being and not a Machine:

Every labourer has his own tastes, habits and feelings. Therefore, labourers cannot be made to work like machines. Labourers cannot work round the clock like machines. After continuous work for a few hours, leisure is essential for them.

7. A Labourer sells his Labour and not Himself:

A labourer sells his labour for wages and not himself. 'The worker sells work but he himself remains his own property'. For example, when we purchase an animal, we become owners of the services as well as the body of that animal. But we cannot become the owner of a labourer in this sense.

8. Increase in Wages may reduce the Supply of Labour:

The supply of goods increases, when their prices increase, but the supply of labourers decreases, when their wages are increased. For example, when wages are low, all men, women and children in a labourer's family have to work to earn their livelihood. But when wage rates are increased, the labourer may work alone and his wife and children may stop working. In this way, the increase in wage rates decreases the supply of labourers. Labourers also work for less hours when they are paid more and hence again their supply decreases.

9. Labour is both the Beginning and the End of Production:

The presence of land and capital alone cannot make production. Production can be started only with the help of labour. It means labour is the beginning of production. Goods are produced to satisfy human wants. When we consume them, production comes to an end. Therefore, labour is both the beginning and the end of production.

10. Differences in the Efficiency of Labour:

Labourer differs in efficiency. Some labourers are more efficient due to their ability, training and skill, whereas others are less efficient on account of their illiteracy, ignorance, etc.

11. Indirect Demand for Labour:

The consumer goods like bread, vegetables, fruit, milk, etc. have direct demand as they satisfy our wants directly. But the demand for labourers is not direct, it is indirect. They are demanded so as to produce other goods, which satisfy our wants. So the demand for labourers depends upon the demand for goods which they help to produce. Therefore, the demand for labourers arises because of their productive capacity to produce other goods.

12. Difficult to find out the Cost of Production of Labour:

We can easily calculate the cost of production of a machine. But it is not easy to calculate the cost of production of a labourer i.e., of an advocate, teacher, doctor, etc. If a person becomes an engineer at

the age of twenty, it is difficult to find out the total cost on his education, food, clothes, etc. Therefore, it is difficult to calculate the cost of production of a labourer.

13. Labour creates Capital:

Capital, which is considered as a separate factor of production is, in fact, the result of the reward for labour. Labour earns wealth by way of production. We know that capital is that portion of wealth which is used to earn income. Therefore, capital is formulated and accumulated by labour. It is evident that labour is more important in the process of production than capital because capital is the result of the working of labour.

14. Labour is an Active Factor of Production:

Land and capital are considered as the passive factors of production, because they alone cannot start the production process. Production from land and capital starts only when a man makes efforts. Production begins with the active participation of man. Therefore, labour is an active factor of production.

DIVISION OF LABOUR AND EFFICIENCY OF LABOUR

Division of labour first originated from the division of workers in different occupations. Now, when the production is done on a large scale with the help of heavy machines, it is split up into a number of processes and many people join to produce an article.

It is called the division of labour. For instance, in a large scale readymade garment factory, a man does cutting of cloth, the second man stitches clothes with machines, the third buttons, the fourth makes folding and packing, etc.

This way of doing the work is called division of labour because different workers are engaged in performing different parts of production. In the words of Watson, "Production by division of labour consists in splitting up the productive process into its component parts."

In fact, one cannot produce all the goods he requires. Production has become so technical and complex that different workers are put to different tasks according to their capacity and ability. One becomes specialised in the production of those goods for which he or she is best suited. Different workers perform different parts of production on the basis of their specialisation.

The result is that goods come to the final shape with the cooperation of many workers. Thus, division of labour means that the main process of production is split up into many simple parts and each part is taken up by different workers who are specialised in the production of that specific part.

Forms of Division of Labour:

The division of labour has been divided into different forms by the economists which can be explained as follows:

1. Simple Division of Labour:

When the production is split up into different parts and many workers come together to complete the work, but the contribution of each worker cannot be known, it is called simple division of labour. For example, when many persons carry a huge log of wood, it is difficult to assign how much labour has been contributed by an individual worker. It is simple division of labour.

2. Complex Division of Labour:

When the production is split up into different parts and each part is performed by different workers who have specialised in it, it is called complex division of labour. For example, in a shoe factory one worker makes the upper portion, the second one prepares the soles, the third one stitches them, the

fourth one polishes them, and so on. In this way, shoes are manufactured. It is a case of complex division of labour.

3. Occupational Division of Labour:

When the production of a commodity becomes the occupation of the worker, it is called occupational division of labour. Thus, the production of different goods has created different occupations. The caste system in India is perhaps the best example of the occupational division of labour. The work of farmers, cobblers, carpenters, weavers and blacksmiths isknown as occupational division of labour.

4. Geographical or Territorial Division of Labour:

Sometimes, due to different reasons, the production of goods is concentrated at a particular, place, state or country. This particular type of division of labour comes into being when the workers or factories having specialised in the production of a particular commodity are found at a particular place. That place may be the most suitable geographically for the production of that commodity. This is called the geographical or territorial division of labour. For example, Assam has specialised in the production of tea, whereas the textile industry is localised in Mumbai and the jute production in West Bengal.

Merits and Demerits of Division of Labour:

Division of labour possesses the following merits and demerits:

Its Merits:

Division of labour has the following merits:

1. Increase in Production:

With the adoption of division of labour, the total production increases. Adam Smith has explained the advantage of division of labour with the help of an example that a worker can produce only 20 pins daily. If the making of pins in a modern factory is divided into 18 processes, then 18 workers can produce 48,000 pins in a single day.

2. Increase in Efficiency of Labour:

With division of labour, a worker has to do the same work time and again, and he gets specialisation in it. In this way, the division of labour leads to a great increase in efficiency.

3. Increase in Skill:

Division of labour contributes to the development of skill, because with the repetition of the same work, he becomes specialised in it. This specialisation enables him to do the work in the best possible way, which improves his skill.

4. Increase in Mobility of Labour:

Division of labour facilitates greater mobility of labour. In it, the production is split up into different parts and a worker becomes trained in that very specific task in the production of the commodity which he performs time and again. He becomes professional, which leads to the occupational mobility. On the other hand, division of labour implies a large-scale production and labourers come to work from far and near. Thus, it increases geographical mobility of labour.

5. Increase in Use of Machines:

The division of labour is the result of the large-scale production, which implies more use of machines. On the other hand, the division of labour increases the possibility of the use of machines in the small-scale production also. Therefore, in modern times the use of machines is increasing continuously due to the increase in the division of labour.

6. Increase in Employment Opportunities:

Division of labour leads to the diversity of occupations which further leads to the employment opportunities. On the other hand, the scale of production being large, the number of employment opportunities also increases.

7. Work According to Taste:

Workers have their own taste in production. For example, a person can take up that type of job for which he considers himself to be the most suitable and which is in accordance with his taste. Division of labour extends the work to such an extent that every person can find work according to his taste and interest.

8. Work for Disable:

Division of labour splits up the production work in small processes and different persons can work at different places with the help of machines. Certain machines can be operated with the help of hands only and others with the help of foot as well. Therefore, the disabled persons can also find work according to their suitability.

9. Best Use of Tools:

In this system, it is not necessary to provide each worker with a complete set of tools. He needs a few tools only for the job in which he can make their best use. Therefore, the continuous use of tools is possible which are used at different stages.

10. Best Selection of the Workers:

Division of labour helps the employers in the best selection of workers.

As the work is divided into different parts and each part is taken up by such a worker who is more suitable for it, the employer can select very easily the man who is best suited for the work.

11. Saving of Capital and Tools:

Division of labour helps in the saving of capital and tools. It is not essential to provide a complete set of tools to every worker. He needs a few tools only for the job he has to do. Thus there is the saving of tools as well as capital. For instance, if a tailor stitches the shirt, he requires a sewing machine, scissors, etc. But on the basis of division of labour, one can do the cutting and the other can stitch the clothes. In this way, two tailors can work with the help of one pair of scissors and one machine only.

12. Goods of Superior Quality:

Division of labour is beneficial in making goods of superior quality. When the worker is entrusted with the work for which he is best suited, he will produce superior quality goods.

13. Saving of Time:

There is no need for the worker to shift from one process to another. He is employed in a definite process with certain tools. He, therefore, goes on working without loss of time, sitting at one place. Continuity in work also saves time and helps in more production at less cost.

14. Right Man at the Right Job:

Division of labour implies splitting up of production into a number of processes. Each person is given the job for which he is best suited. There will be no round pegs in square holes. In this way, a right man is placed at the right job.

15. Reduction in the Cost of Production:

If a shoe-maker makes himself two pairs of shoes daily, then four shoe-makers can make more than eighth pairs of shoes if they work in cooperation with each other. In this way, division of labour increases production which reduces the average cost of production. Saving of capital, tools and machinery, etc. also help in the reduction of cost of production.

16. Cheap Goods:
Division of labour helps in mass production. Thus production becomes less expensive and more economical. Therefore, cheaper goods are turned out, which improve the standard of living of the people.

17. Saving of Time and Expenses in Training:
Under division of labour, a worker has to train himself in a small part of production. There is no need to learn the whole process of production. It ensures saving of time as well as expenses in training.

18. Spirit of Co-operation among Workers:
Division of labour gives chances of working under the same roof and with the cooperation of each other. It further gives rise to the feeling of cooperation and trade unionism in their daily lives. The work cannot be completed unless they cooperate with each other. They help each other at the time of adversities as well.

19. Development of International Trade:
Division of labour increases the tendency of specialisation not only in the workers or industries, but in different countries also. On the basis of specialisation, every country produces only those goods in which it has a comparative advantage and imports such goods from those countries which have also greater comparative advantage. Therefore, division of labour is beneficial for the development of international trade also.

Its Demerits:
The division of labour has also certain demerits which are explained below:

1. Monotony:
Under division of labour, a worker has to do the same job time and again for years together. Therefore, after some time, the worker feels bored or the work becomes irksome and monotonous. There remains no happiness or pleasure in the job for him. It has an adverse effect on the production.

2. Loss of Joy:
In the absence of division of labour, he feels a lot of pleasure on the successful completion of his goods. But under division of labour, nobody can claim the credit of making it. The work gives him neither pride nor pleasure. Therefore, there is total loss of joy, happiness and interest in the work.

3. Loss of Responsibility:
Many workers join hands to produce a commodity. If the production is not good and adequate, none can be held responsible for it. It is generally said that 'every man's responsibility is no man's responsibility.' Therefore, the division of labour has the disadvantage of loss of responsibility.

4. Loss of Mental Development:
When the labourer is made to work only on a part of the work, he does not possess complete knowledge of the work. Thus, division of labour proves to be a hurdle in the way of mental development.

5. Loss of Efficiency:
Division of labour is sometimes accounted for the loss of efficiency. For instance, if a cobbler goes on cutting the leather for a long time, he may lose the efficiency of making shoes.

6. Reduction in Mobility of Labour:
The mobility of labour is reduced on account of division of labour. The worker performs only a part of the whole task. He is trained to do that much part only. So, it may not be easy for him to trace out

exactly the same job somewhere else, if he wants to change the place. In this way, the mobility of labour gets retarded.

7. Increased Dependence:

When the production is split up into a number of processes and each part is performed by different workers, it may lead to over-dependence. For instance, in the case of a readymade garments factory, if the man cutting cloth is lazy, the work of stitching, buttoning, etc. will suffer. Therefore, increased dependence is the result of division of labour.

8. Danger of Unemployment:

The danger of unemployment is another disadvantage of division of labour. When the worker produces a small part of goods, he gets specialised in it and he does not have complete knowledge of the production of goods. For instance, a man is expert in buttoning the clothes. If he is dismissed from the factory, it is difficult for him to find the job of buttoning. Thus division of labour has a fear of unemployment.

9. Increased Dependence on Machines:

As division of labour increases, there will be an increased use of machines. Almost all the workers work on different types of machines. It is difficult for them to work without machines. Thus, division of labour increases the dependence on machines.

10. Danger of Over-Production:

Over-production means that the supply of production is comparatively more than its demand in the market. Because of the division of labour, when production is done on a large scale, the demand for production lags much behind its increased supply. Such conditions create overproduction which is very harmful for the producers as well as for the workers when they become unemployed.

11. Exploitation of Labour:

Division of labour is concerned with large scale production in big factories which are owned by the capitalists. No poor worker can afford to start his own production. Therefore, they have to seek employment in big factories of the capitalists. These employers pay less wages to them as compared to their marginal productivity, because there is no other alternative to the workers but to work at very low wages. Therefore, division of labour results in the exploitation of labour.

12. Evils of Factory System:

The modern industrial or factory system has been developed as a result of the division of labour. This system further gives rise to the evils like dense population, pollution, bad habits of gambling and drinking, low standard of living, poor food, clothes and housing, etc.

13. Employment of Women and Children:

Division of labour results in the large scale production in which children and women are also employed. It is because a simple and small part of the whole task can easily be performed by them. Thus the number of employed women and children increases. They are also exploited by the employers by paying them lower wages.

14. Industrial Disputes:

The industrial disputes mean strikes by workers, closure of factory, etc. due to clashes between the employees and the employers. Division of labour results in the division of society into workers and employers. The employer always tries to increase his profits by exploiting the workers and workers form trade unions against the employers to put an end to their exploitation or to make them increase their wages. It gives rise to a severe conflict between the employers and the workers in the form of strikes, closures and lockouts of factories.

Conclusion:
To sum up, we can say that division of labour is beneficial to the workers, to the producers and to the society as a whole. Its merits outweigh its demerits.

EFFICIENCY OF LABOUR :- The working capacity of the labour is called his efficiency being given the same time limit and given the same type of work.

FACTORS DETERMINING THE EFFICIENCY OF LABOUR

1. PERSONAL QUALITIES :- Some people have some personal qualities and they are suitably built foe certain heavy labour. On other hand some people are very suitable for mental labour. Family background also pays very important role in this regard.

2. EDUCATION :- It is the basic and essential element which determines the efficiency of labour. Educated labourer is more efficient as compared to the illiterate worker.

3. TRAINING AND SKILL :- The modern world requires highly skilled labourers. A labourer with sound technical training will be more effective as compared to a labourer who has no training. It increases the efficiency of the labourer.

4. CLIMATIC CONDITIONS :- Climates also plays an important role in increasing or decreasing the efficiency. Hot weather has a vital factor for the low efficiency of labour in Asia and Middle East. On other hand cold weather is an important element for increasing the efficiency in labour in U.S.A and Europe.

5. WAGES AND BENEFITS :- If wages, allowances, bonuses and other frigs benefits are given to the workers, then their working efficiency increases. Labourer works very hard if he has attractive salary. On other hand if wages rate is low then efficiency of the labourer will be also low.

6. COMBINATION OF PRODUCTION FACTORS :- If the other three factors of production combination is ideal then efficiency of labourer will be high otherwise low.

7. WORKING HOURS :- If working hours of labourer are reasonable then the efficiency will be high. If the working time is very long and without extra payment then efficiency of the worker will be low.

8. ENVIRONMENT :- If the working environment is pleasant then efficiency of labourer will be high. It is observed that labourer working in air conditions rooms and healthy conditions are more efficient as compared to others.

9. RACIAL QUALITIES :- By birth some races are very hard working and strong built so they are more efficient as compared to other races.

FACTORS PROMOTING EFFICIENCY OF LABOUR

Following are the important factors which promote the efficiency of labour.

1. INCREASE IN WAGES :- Increase in wages and fringe benefits promote the efficiency of labour. When wages and incentives will increase it will make the labourer hard worker and efficient.

2. TECHNICAL EDUCATION :- Vocational, technical and commercial colleges, should be opened to provide technical skill to the people. Modern industry, agriculture, banking, transport and commerce require highly skilled persons. Such type of training and skill is provided in the colleges and universities.

3. CARE OF HEALTH :- Health facilities should be provided to the labourers. A healthy worker can work more efficiently as compared to sick worker. All the factory owners should opened the health clinics in their factories and regular medical check-up should be compulsory.

4. INCREASES IN ALLOWANCES :- Various types of allowances like dearness and bonus must be increased. Special allownces should be given to the efficient workers.

5. LABOUR LAWS :- Government should also frame the strict labour laws. In case of accident special compensation should be given. In case of industrial dispute courts should be established. This step will provide the security to the labourers and they will work with full concentration.

6. SPECIAL STORES :- To provide the goods on lower rates to the labourers special stores should be opened for the workers.

7. ESTABLISHMENT OF THE CANTEEN :- Lunch and dinner facility should be provided to the workers. On the lower rates food should be provided during the working interval. In this way time of the workers will be saved and their efficiency will increase.

MOBILITY OF LABOUR

Mobility refers to the willingness and actual movement of labour from one place to another-near or far and distant. This mobility may be for searching jobs or for better job prospects. This mobility may be territorial, occupational or intra-regional.

FACTORS AFFECTING MOBILITY OF LABOUR:

1) Means of transport and communication
2) Knowledge and Information
3) Stage of development
4) Family bonds
5) Urge to excel

CAPITAL

Meaning

The term, 'Capital', in economics does not mean merely money as the accountants call it. Capital is that part of wealth which can be used for further production of wealth. According to Marshall, "Capital consists of all kinds of wealth, other than free gifts of nature, which yield income." Therefore, every type of wealth other than land which helps in further production of income is called capital.

In this way, money, machine, factories, etc. are included in capital provided they are used in production. For instance, if a man has an income of Rs 10,000 per month and out of it he invests Rs 6,000 in a business, this amount of Rs 6000 is called capital. In the same way, plough, tractor and other agricultural implements of farmers are also capital. The house in which a man resides is his wealth and the house which is given on rent is his capital.

Characteristics of Capital:

Capital has its own peculiarities which distinguish it from other factors of production. Capital possesses the following main characteristics:

1. Man Produces Capital:

Capital is that wealth which is used in the production of goods. Capital is the result of human labour. Thus, every type of capital such as roads, machines, buildings and factories etc. are produced by man. It is a produced factor of production.

2. Capital is a Passive Factor of Production:

Capital cannot produce without the help of the active services of labour. To produce with machines, labour is required. Thus, labour is an active, whereas capital is a passive factor of production. Capital on its own cannot produce anything until labour works on it.

3. Capital is a Produced Means of Production:

The composition or supply of capital is not automatic, but it is produced with the joint efforts of labour and land. Therefore, capital is a produced means of production.

4. Capital is Variable:

The total supply of land cannot be changed, whereas the supply of capital can be increased or decreased. If the residents of a country produce more or save more from their income, and these savings are invested in factories or capital goods, it increases the supply of capital.

5. Capital is more Mobile than other Factors of Production:

Of all the factors of production, capital is the most mobile. Land is perfectly immobile. Labour and entrepreneur also lack mobility. Capital can be easily transported from one place to another.

6. Capital Depreciates:

As we go on using capital, the value of capital goes on depreciating. When machines are used continuously for some time, these depreciate and their value falls.

7. Capital is Stored-up Labour:

Scholars like Marx admit that capital is stored-up labour. By putting in his labour man earns wealth. A part of this wealth is spent on consumption goods and the rest of it is saved. When saving is invested, it becomes capital. In other words, capital is the result of accumulation of savings of a man. Therefore, capital is stored-up labour.

8. Capital is Destructible:

All capital goods are destructible and are not permanent. Because of the continuous use, machines and tools become useless with the passage of time.

Classification of Capital

The functional classification of capital is as follows:

1) Real capital and financial capital: Real capital refers to physical goods (capital goods as they are known to be) used for further production like, equipments, machinery, structure, plants etc. Financial capital is monetary resources available for investment into these physical goods.
2) Private capital and social capital: Private capital includes the amount and type of investment made by the private sector, usually, for earning some profits. Social capital, on the other hand, is created and developed by the state, for example, construction of roads, bridges, educational institutions and some such economic organizations.

3) Fixed and Floating capital: The long-term capital like plant and machinery is fixed capital whereas cash, inventories required for production is floating or circulating capital.
4) Tangible and Intangible capital: Any capital which has physical manifestation like plant and machinery, building etc. is called tangible capital, Intangible capital is, which is not physically existing but contributing to the production of goods and services like goodwill, brand image etc.
5) Indigenous and Foreign capital: Such capital having its sources from within the country is called indigenous capital whereas the capital, in any form, brought from abroad is called foreign capital.

Capital Formation

Production is an ongoing process. Whatever amount of goods and services are produced in a certain period of time (usually in a year) is not consumed instantaneously. A part of it is set aside for "Some future use" in production. This keeps on increasing and used for further production sometime somewhere. This 'setting aside of a portion of current production' and used for further production is known as 'capital formation'. We may define capital formation as the surplus of production over consumption in a certain period which is used for further production.

Role of Capital:

1) Capital formation plays a very crucial role in the process of economic development of a country. Higher the rate of capital formation higher will be the growth prospects of the economy. The fact is that capital formation shows the potentials of the economy.
2) Another contribution of capital accumulation (or formation) is that it makes the technology development possible in an economy. Without capital formation, new discoveries, inventions will remain unused and efforts in researching and developing them will go waste.
3) Capital formation also creates job opportunities in the economy both at the level of production of capital and at the level of utilization of such capital.

Stages of Capital Formation:

- Stage 1: Savings
- Stage 2: Mobilisation of Savings
- Stage 3: Investment

ORGANIZATION AND ENTERPRISE (ENTREPRENEURSHIP)

Features of Entrepreneurship

The entrepreneur as an organizer of the process of production is the fore-runner of economic development of a country.

1. Scare human resource

Entrepreneurship is a very scarce human factor as it involves specific talent, organizational capacity, innovative sprit and boldness to bear risk which is not found in every person. In developing countries like India lack of entrepreneurship is a major impediment to development.

2. Heterogeneous factor

Entrepreneurship is a heterogeneous factor of production because efficiency, talents, organizing skills, ability to bear risk, foresights and innovating capacities, etc. vary from entrepreneur to entrepreneur. The nature of enterprise varies with various forms of business organizations like sole trading, partnership, co-operatives, Joint Stock Company and public undertakings. In a small business, the same person may work as an entrepreneur, manager and capitalist.

3. Indispensable factor

In modern business entrepreneur is a very important factor of production as he organizes production of goods & services by coordinating the other factors in an optimum way. He is an organiser & owner of the firm. Production is impossible in his absence.

4. Intangible factor

Entrepreneurship is an abstract phenomenon. It is intangible. Entrepreneurial efforts cannot be measured in quantitative terms while we can measure in terms of hours of work and number of days. We can calculate the number of individual workers and their contribution to the firm but it is not possible to measure entrepreneurship as the firm itself is the enterprise.

5. Highly mobile

Of all factors entrepreneur possess a higher degree of mobility as he can easily move from one industry to another or from one region to another. An entrepreneur's ability to move from one industry to another depends upon his knowledge, experience and specialization.

6. Cannot be Bought & Sold

Land labour and capital can be bought and sold in factor markets but it is not possible to deal with entrepreneurs in a factor market. Since enterprise is an intangible factor, it cannot be bought and sold. Hence, like land, labour and capital market there is no entrepreneurial market where entrepreneurship can be bought and sold. Transaction is not possible in case of enterprise.

We cannot derive the demand and supply curves in case of entrepreneur. Hence, the Demand and Supply Theory of value cannot be applied to the factor enterprise or organization to determine its price.

7. Residual reward

Entrepreneurship is a reward in terms of profit which is a residual reward, i.e. an income which is left after meeting all business expenses from the total sales revenue.

Functions of an Entrepreneur:

1) Co-ordinating functions
2) Risk bearing functions
3) Innovating functions

UNIT V

DEFINITIONS OF NATIONAL INCOME

Marshall's Definition

"The labour and capital of a country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterial, including services of all kinds. This is the true net annual income or revenue of the country or national dividend."

Pigou's Definition

"National income is that part of the objective income of the community, including of course income derived from abroad, which can be measured in money."

"A national income estimate measures the volume of commodities and services turned out during a given period counted without duplication."

"The aggregate value of all final goods and services produced by the residents of a country, operating both within the national boundary and abroad, in any particular year, is called the national income of the country."

Characteristics of National Income –

1) National income is estimated in monetary terms. This may be expressed at current prices or some base year prices.
2) Only the value of final goods and services are taken into account for measuring national income.
3) National income is always expressed with respect to a given time period. Hence, it is a 'flow' concept.
4) All types of 'pure exchange transactions' are excluded from national income accounting. In case of pure exchange transactions, nothing new is produced in the current year. For instance, second-hand sales, purchase and sale of securities (shares and debentures), transfer payments (such as unemployment dole, pension payments) etc. are regarded as pure exchange transactions. All such transactions are not concerned with current year production. So, they are excluded from national income estimates.
5) National income is not simply the sum of all personal incomes in a country.

Difference between Domestic Income and National Income –

S.No.	National Income	Domestic Income
1	It includes income earned by the residents only.	It includes income earned by the residents as well as non-residents.
2	It consists of income earned both within and outside the domestic territory of a country.	It consists of income earned only within the domestic territory.
3	It is an economic concept.	It is a geographic concept.

4	It includes net factor income from aborad.	It does not include net factor income from abroad.
5	National income = Domestic income + Net factor income from aborad.	Domestic income = National income – Net factor income from abroad.

Net factor income from abroad is the difference between the income received by the residents from abroad for rendering factor services (e.g., banking and insurance services, other financial services, engineering services, etc.) and the income paid for the factor services rendered by the non-residents in the domestic territory of a country.

CONCEPTS OF NATIONAL INCOME

1) Gross Domestic Product (at market prices):
The gross domestic product at market price (GDPmp) indicates the value of all final goods and services produced within the domestic territory of a country during any particular year. These goods and services are valued at the prevailing market prices of those goods and services.

2) Net domestic product (at market prices):
The Net domestic product at market prices (NDPmp) refers to the value of all final goods and services at the prevailing market prices within the domestic territory of a country during any particular year after making allowance for the consumption of fixed capital or depreciation allowance.

NDPmp = GDPmp – Depreciation allowance

3) Gross National Product (at market price) :
The Gross National Product at market prices (GNPmp) refers to the aggregate market value of all final goods and services produced by the residents of a country during any particular year.

4) Net National Product (at market prices):
The net national product at market prices (NNPmp) refers to the market value of all final goods and services produced by the residents of a country after allowing for the depreciation of fixed capital during any particular year. Thus, if we deduct the consumption of fixed capital or the depreciation allowance from the GNPmp, we get NNPmp.

NNPmp = GNPmp – Depreciation allowance

5) Gross Domestics Product (at factor cost):
The Gross Domestic Product at factor cost (GDPfc) refers to the estimation of GDP in terms of the aggregate earnings of factors of production.

6) Gross National Product (af factor cost):
The Gross National Product at factor cost (GNPfc) refers to the GNP in terms of factor incomes. It is the aggregate earnings received by different factors of production (i.e., wages, rent, interest and profits) supplied by the residents of a country during any particular year.

7) Net Domestic Product (at factor cost):

The net domestic product at factor cost (NDP_{fc}) estimates the NDP in terms of the aggregate factor incomes of the residents and non-residents within the domestic territory of a country during any particular year.

8) Net National Product (at factor cost):

The net national product at factor cost (NNPfc) to the value of the final goods and services produced by the residents of a country, whether operating within the domestic territory or outside it, at their factor costs. It is also termed as the National Income of a country.

9) Private Income

Central Statistical Organization defines Private Income as "the total of factor income from all sources and current transfers from the government and rest of the world accruing to private sector" or in other words the private income refers to the income from socially accepted source including retained income of corporation.

NI+ Transfer payment + Interest on public debt +Social security + Profit and Surplus of public enterprises = Private Income

10) Personal Income

Prof. Peterson defines Personal Income as "the income actually received by persons from all sources in the form of current transfer payments and factor income. In other words, Personal Income is the Total income received by the citizens of a country from all sources before direct taxes in a year.

PI = Private Income + Undistributed Corporate Profits – Direct Taxes

11) Disposable Income

Prof. Peterson defined Disposable Income as "the income remaining with individuals after deduction of all taxes levied against their income and their property by the government."

Disposable Income refers to the income actually received by the households from all sources. The individual can dispose this income according to his wish, as it is derived after deducting direct taxes.

DI = Personal Income - Direct taxes – Miscellaneous receipt of the government.

Methods of calculating National Income

A) Value added or production or output approach

1) The output approach focuses on finding the total output of a nation by directly finding the total value of all goods and services a nation produces.

2) Problem of Double counting: Because of the complication of the multiple stages in the production of a good or service, only the final value of a good or service is included in the total output. This avoids an issue often called 'double counting', wherein the total value of a good is included several times in national output, by counting it repeatedly in several stages of production. In the example of meat production, the value of the good from the farm may be Rs10, then Rs 30 from the butchers, and then Rs 60 from the supermarket. The value that should be included in final national output should be Rs 60, not the sum of all those

numbers, Rs 90. The values added at each stage of production over the previous stage are respectively Rs 10, Rs 20, and Rs 30. Their sum gives an alternative way of calculating the value of final output.

B) Income method

The income approach equates the total output of a nation to the total factor income received by residents or citizens of the nation. The main types of factor income are:

- Employee compensation/ salaries & wages (cost of fringe benefits, including unemployment, health, and retirement benefits);
- Interest received net of interest paid;
- Rental income (mainly for the use of real estate) net of expenses of landlords;
- Royalties paid for the use of intellectual property and extractable natural resources.
- Corporate Profits

C) Expenditure or Consumption method

The expenditure approach is basically an output accounting method. It focuses on finding the total output of a nation by finding the total amount of money spent. This is acceptable, because like income, the total value of all goods is equal to the total amount of money spent on goods

GDP= C+I+G+(X-M)

Where:

C = household consumption expenditures / personal consumption expenditures
I = gross private domestic investment
G = government consumption and gross investment expenditures
X = gross exports of goods and services
M = gross imports of goods and services
Note: (**X - M**) is often written as $\mathbf{X_N}$, which stands for "net exports"

PROBLEMS OF CALCULATING NATIONAL INCOME IN INDIA

1) **Difficulty in defining the nation** – As the world has become a global village, it is very difficult to identify the national boundaries has become difficult.
2) **Non-marketed service** – Services like love, kindness, and mercy has economic value but have no money value.
3) **Possibility of double counting** – The possibility of double counting which arises from the failure to distinguish properly between a final and intermediate product.
4) **Transfer payment** – Individual get pension, unemployment allowance and interest on public loans, but whether these should be included in national income is a difficult problem. The best way to solve the difficulty is to consider only the disposable income of individual or personal income minus all transfer payments.
5) **Capital gains or losses** – Commodity product this year is sold next year if at higher price is capital gain & at loss then capital losses e.g. other example could be selling of shares.
6) **Income earned through illegal activities** –Such as gambling or illicit extortion cannot be included in national income.
7) **Self-consumed production** – In many backward countries, substantial part of the output is not exchanged for money in market it is being either consumed directly by producer or bartered for other goods & services in the unorganized sector.

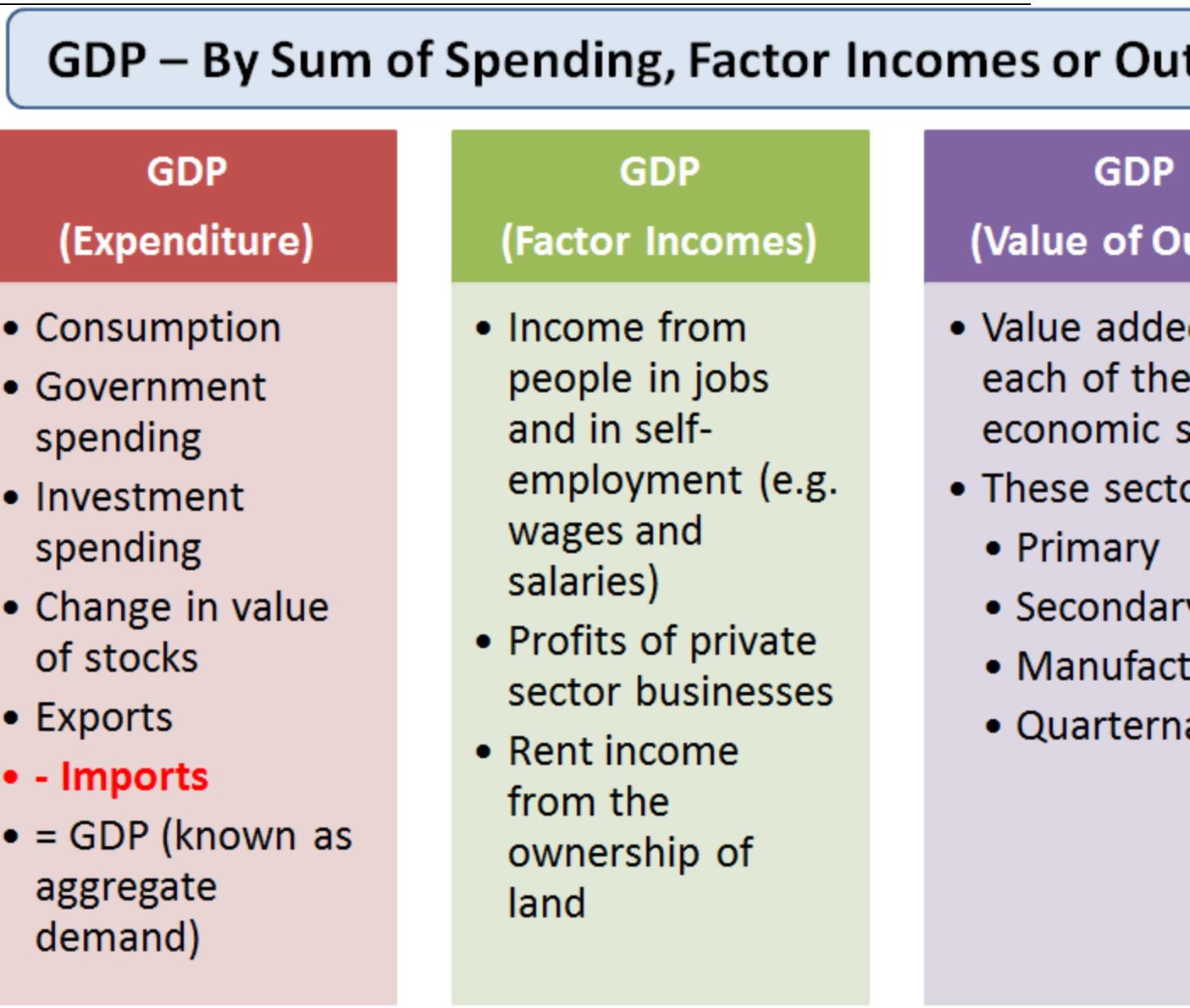
8) **Paucity of statistics** – According to the national income committee of India, the available statistics, especially for agriculture & small scale industry are extremely unreliable & incomplete.
9) **Inflation may give a false impression of growth in national income** – In a country when price rise, inflation rises even though the production falls & vice versa. It leads to mis-measurement of national income. ,
10) **Difficulties in classifying the commodities** – Coal is both household use & industrial use as well ,so is the expenditure on coal consumption , expenditure or an investment.
11) **Multiple occupations** – The production in agri-industrial, in all sectors is highly scattered and unorganized making the calculation of national income very difficult.
12) **Capital depreciation** – Depreciation is charged on profit which lowers national income. But the problem of estimating the current depreciated value of a piece of capital whose expected life is forty year is very difficult.
13) **Data problems** – There are problems of collecting reliable statistical data abort all the productive activities in the underdeveloped countries.
14) **Illiteracy** – The majority of people in the country like India are illiterate & they do not keep any accounts about the production & sole of their products.

Measuring the level and rate of growth of national income (Y) is important for keeping track of:

- **The rate of economic growth**
- **Changes to living standards**
- **Changes to the distribution of income between groups within the population**

Gross Domestic Product

- **Gross domestic product (GDP) is the total value of output produced in a given time period**
- **GDP includes the output of foreign owned businesses that are located in a nation following foreign direct investment. For example, the output produced at the Nissan car plant on Tyne and Wear contributes to the UK's GDP**



Three ways to measure GDP

There are three ways of calculating GDP - all of which in theory should sum to the same amount:

National Output = National Expenditure (Aggregate Demand) = National Income

(i) The Expenditure Method - Aggregate Demand (AD)

The full equation for GDP using this approach is

GDP = C + I + G + (X-M) where

- **C: Household spending on goods and services**
- **I: Capital Investment spending**
- **G: Government spending**
- **X: Exports of Goods and Services**
- **M: Imports of Goods and Services**

The Income Method – adding together factor incomes

GDP is the sum of the incomes earned through the production of goods and services. This is:

- **Income from people in jobs and in self-employment (e.g. wages and salaries)**
- **+**
- **Profits of private sector businesses**
- **+**
- **Rent income from the ownership of land**
- **=**
- **Gross Domestic product (by sum of factor incomes)**

Only those incomes that are come from the production of goods and services are included in the calculation of GDP by the income approach. We exclude:

Transfer payments e.g. the state pension; income support for families on low incomes; the Jobseekers' Allowance for the unemployed and other welfare assistance such housing benefit and incapacity benefits

Private transfers of money from one individual to another

Income not registered with the tax authorities Every year, billions of pounds worth of activity is not declared to the tax authorities. This is known as the shadow economy.

Published figures for GDP by factor incomes will be inaccurate because much activity is not officially recorded – including subsistence farming and barter transactions

Gross Value Added and Contributions to a nation's GDP

- **There are three main wealth-generating sectors in an economy – manufacturing and construction, primary (including oil& gas, farming, forestry & fishing) and a wide range of service-sector industries.**
- **This measure of GDP adds together the value of output produced by each of the productive sectors in the economy using the concept of value added. .**

Value added is *the increase in the value of goods or services as a result of the production process*

Value added = value of production - value of intermediate goods

Say you buy a pizza from Dominos for £9.99. This is the retail price and will count as consumption. The pizza has many ingredients at stages of the supply chain – tomato growers, dough, mushroom farmers and also the value created by Dominos as they put the pizza together and deliver to the consumer.

Some products have a low value-added, for example cheap tee-shirts selling for little more than £5. These are low cost, high volume, low priced products.

Other goods and services are such that lots of value can be added as we move from sourcing the raw materials through to the final product. Examples include designer jewellery, perfumes, meals in expensive restaurants and sports cars. And also the increasingly lucrative computer games industry.

Manufacturing in the UK was 11% of GDP in 2015.

Manufacturing in the World Economy

- **The creative force behind 10bn unique products**
- **It accounts for 15-20 per cent of world economy**
- **It employs about 300m people (roughly 5 pc of world population)**

GDP by Output (Value Added)

- **The majority of UK GDP comes from service industries such as banking and finance, tourism, retailing, education and health.**
- **In 2017, the service industries accounted for 79% of total UK economic output (Gross Value Added) and accounted for 83% of workforce jobs in September 2017.**

Manufacturing

Manufacturing is one of the production industries, which also include mining, electricity, water & waste management and oil & gas extraction. In 2015, the UK manufacturing sector accounted for 10% of total UK GDP and it accounted for 8% of jobs.

Service sector industries

The main service sector industries in the UK are:

- **Hotels and restaurants, and a range of services provided by local government**
- **Transport, logistics, storage and communication**

- **Business services and finance, motor trade, wholesale trades and retail trade**
- **Land transport and air transport, post and telecommunications**
- **Real estate activities, computer and related activities, Education, Health and social work**
- **Sewage and refuse disposal**
- **Recreational, cultural and sporting activities**

Manufacturing Industries

1. The process or business of producing goods in factories
2. The part of a company that is concerned with making goods, rather than designing or selling them

The manufacturing sector accounted for 10% of UK output (Gross Value Added) in 2012

In 2013 there were 2.6 million jobs in the manufacturing sector, this was 8% of all jobs in the UK economy


Food processing


Earth moving equipment


Additive manufacturing (3D)

Manufacturing

Service Industries

1. Services are part of the tertiary sector of the economy
2. There are many different service industries – some focusing on business-to -business and others business-to-consumer products

Hotels and restaurants & retail

Education, health care, legal services

Transport and logistics

In 2012, the service sector accounted for 79% of UK output (Gross Value Added) and for 83% of jobs.

In 2013 there were 27.1 million jobs in the service sector, 83% of all jobs in the UK

Per Capita Gross National Income

How much does each person earn on average? We use per capita measures to give us a guide to this. Income per capita is a way of measuring the standard of living for the inhabitants of a country.

Gross National Income per capita = Gross National Income / Total Population

Measuring National Income Per Capita

Per capita income

- Per capita means income per head of population
- = GDP / total population

Population estimates

- In many countries, the official population data is inaccurate
- There has been a sharp rise in migrant flows

UK Population Forecast

- UK pop is projected to increase by 9.6 million over the next 25 years
- Projected UK pop to reach 70 million in 2027

Year (Mid Year Figure)	UK Population (Millions)
1980	56.3
1990	57.2
2000	58.9
2005	60.2
2010	62.3
2013	63.6

Per capita national income

Problems with using GDP as a measure for standard of living