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INDUSTRIAL ECONOMICS & FOREIGN TRADE (HUT300)

SYLLABUS

MODULE	DETAILS	HOURS
I	**Basic Concepts and Demand and Supply Analysis:** Scarcity and choice- Basic economic problems- PPC– Firms and its objectives– types of firms– Utility– Law of diminishing marginal utility– Demand and its determinants– law of demand– elasticity of demand– measurement of elasticity and its applications– Supply, law of supply and determinants of supply– Equilibrium– Changes in demand and supply and its effects– Consumer surplus and producer surplus (Concepts) – Taxation and deadweight loss.	7
II	**Production and cost:** Production function– law of variable proportion– economies of scale– internal and external economies– Isoquants, isocost line and producer's equilibrium – Expansion path – Technical progress and its implications – Cobb-Douglas production function - Cost concepts – Social cost: private cost and external cost – Explicit and implicit cost – sunk cost - Short run cost curves - long run cost curves – Revenue (concepts) – Shutdown point – Break-even point.	7
III	**Market Structure:** Perfect and imperfect competition – monopoly, regulation of monopoly, monopolistic completion (features and equilibrium of a firm) – oligopoly – Kinked demand curve – Collusive oligopoly (meaning) – Non-price competition – Product pricing – Cost plus pricing – Target return pricing – Penetration pricing – Predatory pricing – Going rate pricing – Price skimming	7
IV	**Macroeconomic concepts:** Circular flow of economic activities – Stock and flow – Final goods and intermediate goods - Gross Domestic Product - National Income – Three sectors of an economy- Methods of measuring national income – Inflation- causes and effects – Measures to control inflation- Monetary and fiscal policies – Business financing- Bonds and shares -Money market and Capital market – Stock market – Demat account and Trading account - SENSEX and NIFTY.	7
V	**International Trade** Advantages and disadvantages of international trade - Absolute and Comparative advantage theory - Heckscher - Ohlin theory - Balance of payments – Components – Balance of Payments - deficit and devaluation – Trade policy – Free trade versus protection – Tariff and non-tariff barriers.	7
	TOTAL HOURS	35

HUT300 Industrial Economics & Foreign Trade

Module 1 (Basic Concepts and Demand and Supply Analysis)

Scarcity and choice - Basic economic problems- PPC – Firms and its objectives – types of firms – Utility – Law of diminishing marginal utility – Demand and its determinants – law of demand – elasticity of demand – measurement of elasticity and its applications – Supply, law of supply and determinants of supply – Equilibrium – Changes in demand and supply and its effects – Consumer surplus and producer surplus (Concepts) – Taxation and deadweight loss

1.1 Microeconomics

The subject matter of Economics has been divided into two parts. - Microeconomics and Macroeconomics. Microeconomics studies the economic behaviour of individual economic units. It includes analyzing the behaviour of households and firms at the micro level. It studies the demand of individual consumers for goods and their equilibrium state. It studies the behaviour of individual firms in regard to the fixation of price and output. It is concerned with how the individual consumer distributes his income among various products and services so as to maximize utility. It is concerned with the theories of product pricing, factor pricing and economic welfare.

Applications of Microeconomics

1. It is helpful in the formulation of economic policies that will promote the welfare of all.
2. It teaches how a free market economy with its millions of consumers and producers work to decide about the allocation of resources among the various goods and services.
3. It studies how goods are distributed among the various people for consumption through the price mechanism.
4. Microeconomic theory shows that optimum welfare is achieved when there is perfect competition in product and factor markets.
5. It also helps in the formulation of economic policies calculated to promote efficiency in production to ensure the welfare of the people.

1.2 Scarcity and Choice

Scarcity

Scarcity is one of the fundamental and basic concept in Economics. The scarcity definition of Economics was put forward by Lionel Robbins. It refers to the lack of resources to satisfy all human wants.

An economy has to decide how to use its scarce resources to produce various commodities. If it decide to use more resources in one line of production, then resources must be withdrawn from the production of some other goods.

Even though it is expected that the problem of scarcity will disappear as an economy grows, the wealthiest economies in the world, even today face the problem of scarcity as their present wants run ahead of their increased resources and capacity to produce.

The scarcity of resources also compels an economy to decide how the different commodities should be produced. The method of production adopted should be one that makes the best possible use of the available resources.

Choice

Choice emanates from scarcity. An economy faces the problem of choice since there are a large number of wants to be satisfied with limited resources. The economy does not have the resources to produce all the commodities in abundant quantities to satisfy all of its people. It has to make a choice regarding the quantity of different commodities that is to be produced.

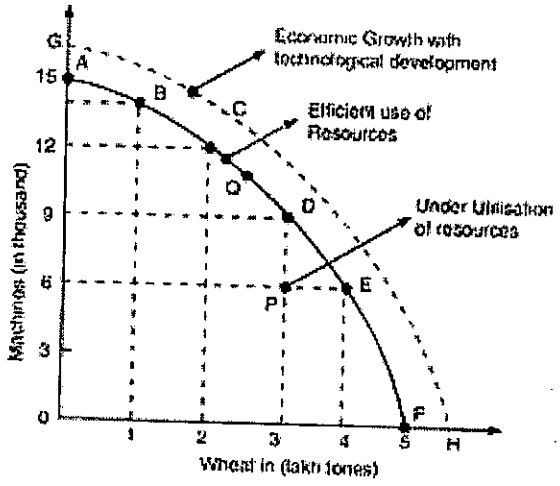
A choice also has to be taken regarding who should get how much from the national output. This means how the national product is distributed among various members of a society.

Explaining scarcity and choice using the Production Possibility Curve

The problem of scarcity and choice can be explained using the PPC. A, B, C, D, E and F represent various combinations of machines and wheat available to the economy.

A and F are possibilities where the economy spends all of its resources on either machines or on wheat. Possibilities B, C, D and E lie in between. The economy must rationally choose where on the PPC they want to be since all points are mutually exclusive. Due to the scarcity of resources, the country has to choose at what point on the PPC it should produce so as to maximize social welfare.

Possibility	Machines	Wheat
A	5	0
B	4	5
C	3	8
D	2	11
E	1	13
F	0	15



1.3 Basic Economic Problems

Every economy faces three basic and fundamental economic problems. The economy must first of all decide what all products are to be produced, how these commodities are made and finally decide for whom these are to be produced. The issue arises due to the scarcity of resources and the ever-increasing quantity of products that are demanded.

1. What to produce

The economy has to decide what all commodities and services it will produce. An economy wants many things but it is not possible to make everything with the available resources. It also has to settle on the quantity of various products that is to be produced. Should it produce food or machines? Should scarce resources be used to produce more electronic gadgets or should it be used to produce electric power plants which will ensure industrial growth tomorrow?

2. How to produce

The second central problem faced by any economy is to determine the production techniques that will be used to produce different products. This problem arises because the same commodity can be produced using different technologies. Should electricity be generated from coal, oil, thermal or nuclear? Should factories use labour intensive or capital-intensive techniques? Commodities would be produced by employing those techniques which maximize output at the minimum cost.

3. For whom to produce

An economy produces commodities for use and hence it has to decide the final users of various commodities. It also has to decide as to who gets the benefit of economic activity. A country may produce a large number of low-cost products meant for all or it may produce a few products meant for luxurious consumption.

This problem is concerned with the distribution of the national product in a fair and equitable manner. An answer to this question depends largely on the policies of the government.

Apart from these fundamental issues, modern economies have to solve three more basic problems.

4. The problem of economic efficiency

Production is said to be efficient if the resources are utilized in such a way that through reallocation it is impossible to produce more of one good without reducing the output of any other.

5. The problem of full employment of resources

Full employment would occur when all the available resources of a country are fully utilized. Countries go through situations where people are searching for work and factories are lying idle but manufacturing does not take place. This is particularly severe during times of recession.

6. The problem of economic growth

An economy has economic growth only when it's productive capacity to produce more and more goods and services increases over time. Such a country will constantly witness an increase in the standard of life of the people.

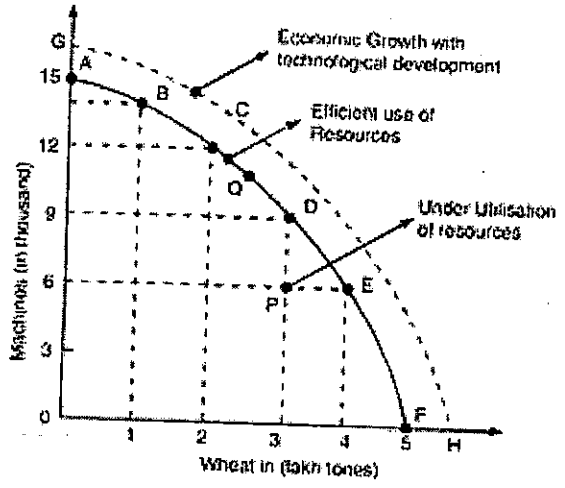
1.4 Production Possibility Curve

The PPC is a graphical representation of the alternative production possibilities facing an economy. Since the total resources of the economy are limited, it has to decide what to produce with the limited resources. It has to make a choice regarding the quantity of different commodities. If there were unlimited resources, the economy could have produced all that it wanted. It is also referred to as the *production possibility frontier* since it shows the maximum that can be produced with the available resources.

For example, consider an economy which produces only two goods, guns and butter. The guns represent military spending and the butter stands for civilian spending. Here there are two extreme cases. If all the resources are utilized for butter, then no guns can be produced and vice versa. The various possibilities of producing the products are represented by the following schedule.

Possibility	Machines	Wheat
A	5	0
B	4	5
C	3	8
D	2	11
E	1	13
F	0	15

In the above schedule A and F are possibilities where the economy either produces 100 percent of machines or 100 percent of wheat. Possibilities B, C D and E lie in between. It can be seen that for an economy to have more machines it must be willing to sacrifice more of wheat. For instance, to reach possibility B from A, the economy produces 5 more units of wheat by sacrificing 1 unit of machine.



The curve represents the production possibilities of an economy and shows the various possible combinations of the two goods. The curve gives the maximum amount of

machines that can be produced in the economy for any given amount of wheat and vice-versa. The production possibility curve is also known as *transformation curve* since it shows the rate of transformation of one product into the other when the economy moves from one possibility point to the other.

All possible combinations lying on the production possibility curve show the combinations of the two goods that can be produced using the available resources. Any combination lying inside the production curve such as P in the figure indicates that resources are not being fully employed in the best-known way. Any point outside the production possibility frontier, such as Q implies that the economy does not have adequate resources to produce this combination.

Shift of the PPC

A shift of the production possibility frontier indicates economic growth and development. In the above instance, the production possibility frontier has shifted to GH on account of improvements in technology or due to an increase in the resources available to the economy.

The PPC is an important tool that can be used to understand basic concepts like scarcity, choice, resource allocation, opportunity cost and trade off.

1.5 Firms and its objectives

A firm is a specialised organisation devoted to managing the process of production. It utilises the factors of production like land, labour, capital and organisation to produce various goods and services.

Objectives of a firm

Each firm decides its own objectives and evolves strategies to fulfil it. The different objectives that firm pursue are:

1. Profit Maximisation

The primary objective of most firms is the maximisation of its profit. No business firm can survive without earning sufficient profits. Profits bring in the resources needed for expansion and diversification. It is the monetary benefit given to the shareholders of the firm. Profit is defined as the difference between total revenue and total costs.

Profit = Total Revenue - Total Costs

The marketing and sales managers try to maximise the total revenue while the production and manufacturing managers try to minimise the total costs.

2. Sales Maximisation

Firms often try to maximise their sales and increase their share of the market. According to Prof. Baumol most managers try to maximise sales revenue since their earnings are more dependent on sales revenue rather than on profits. Such a strategy may be beneficial in the long run since it increase the monopoly of the company in the market enabling the firm to sell at higher prices. However, in the long run this may also result in profit maximisation.

3. Growth Maximisation

Firms also work towards maximising their growth rate. A higher rate of growth automatically increases the level of output of the firm. It will also result in more revenue, profit, number of employees, market share and number of products. Such firms will be more dynamic and competitive since they are always on the lookout for better opportunities. They are also likely to invest more in technology and research.

4. Welfare Maximisation

A firm may also aim to maximise the welfare of the society. Such a firm tries to supply good quality products at fair prices. They will take reasonable steps to protect the environment. Many firms engage in setting up schools, sports complexes charitable organisations, hospitals and take steps to increase employee welfare.

5. Profit Satisficing

It is the economic strategy of focusing on achieving satisfactory profits rather than maximising profits. The primary interest of the shareholders is dividends. They are rarely interested in the day-to-day operations of the company. However, managers do not get a share of dividends and have less motivation to maximise profits. Hence managers may achieve a satisfactory level of profits to keep shareholders happy and then focus on other goals like improvement of working conditions.

6. Stability

Stability is essential for the firm's survival in the long run. A stable firm can easily handle the changing market dynamics and will have a high level of customer and employee satisfaction. It will be able to quickly adapt to difficult situations like falling demand for its products, bad debts, technological obsolescence and declining customer confidence.

To conclude the ultimate objective of all firms is profit maximisation. It can be seen that all of the above objectives go together and a firm which is able to achieve high sales or rapid growth would be rewarded with high profits. In the long run profit maximisation, sales maximisation and growth maximisation will converge into a single objective.

1.6 Types of Firms

1. Sole Proprietorship

It is the type of firm owned, managed and controlled by a single individual or the proprietor. It is suitable where the nature of the market is limited, localised and where customers give importance to personal attention. Most of the small businesses are of this type. The debts of the firm are the personal responsibility of the owner e.g. handicrafts, jewelry, tailoring etc.

Advantages

a. They require low capital investment and offers personalised service.
b. Such firms are able to take quick decisions and have flexible operations.
c. The partners share profits in the ratio as agreed.
d. There are less legal formalities

2. Partnership firms

These are firms owned by two or more individuals who share profits as well as liabilities of the firm. It comes into existence through a legal agreement in which terms and conditions governing the relationship among partners, the manner of conducting the business and sharing of profits and losses are specified. Such firms are suitable for small businesses. e.g. retail trade, small manufacturing units, professional services etc.

Advantages

a. Such firms are able to collect more resources than the proprietorship.

b. Persons with different skill, expertise, managerial talent and resources can come together to form a business.

c. The partners share among themselves the responsibility of decision making.

d. The partners share profits in the ratio as agreed.

3. Joint Stock Company

It is a business organisation owned by a number of individual stockholders. Today most of the business activity in the country is carried out by joint stock companies. It has a separate legal identity and can borrow money and make investments on its own behalf. The ownership of a company is determined by the ownership of the company's shares. The shareholders get dividends in proportion to the shares owned by them. They elect directors and vote on important issues. They are the dominant type of business organisation since they are an extremely efficient way to engage in business.

A company has two basic forms.

(a) Private Limited Company. The maximum number of shareholders is limited to fifty. The shares of the company are transferable only among the members and it cannot raise capital by selling its shares to outsiders.

(b) Public Limited Company. There is no limit on the maximum number of members. It has to annually submit its balance sheet to the Registrar of Joint Stock Companies. It can invite the public to buy shares by issuing a prospectus. However its business cannot be started unless the minimum capital laid down as per law has been subscribed.

e.g. Infosys, Microsoft, Tata Motors

Advantages

a. A company is a legal person that can conduct business.

b. The owners have only a limited liability.

c. The shareholders own the corporation but the managers run it, hence decision making is very quick and precise.

d. Since the number of shareholders is very large, they can collect huge financial resources.

4. The Cooperatives

The cooperative society is a voluntary association of persons who join together for the welfare of the members. Their objective is to protect their economic interests and prevent exploitation. The profit generated is distributed among the members as per the legal agreement. Here decisions are taken by an elected managing committee e.g. AMUL, Kerala State Cooperative Bank, KCMMF etc.

Advantages

a. Each member has only one vote irrespective of the amount of capital contributed.

b. The liability of the members is limited to their capital contribution.

c. Since the producers themselves are members of the society cost of production can

be minimised.

d. The cooperatives enjoy governmental support.

5. The Public Sector

Public sector undertaking (PSU) refers to a government owned company. The primary objective is to provide services to improve the welfare of the people. In most countries government companies provide services like transportation, communication, public roads, infrastructure, education and healthcare.

Advantages

a. Not guided by profit motive.

b. Creation of employment opportunities.

c. Access to huge governmental finances.

d. Investment can be made in sectors which are socially desirable.

1.7 Utility

In ordinary language, utility means usefulness. In Economics, utility is defined as the power of a commodity or a service to satisfy a human want. Alfred Marshall is the chief exponent of the utility approach.

Utility is a subjective concept. The same commodity gives different utilities to different people. Warm clothes have little utility for the people in hot countries. So, utility depends on the consumer and his need for the commodity.

Total Utility

Total Utility refers to the sum of utilities of all units of a commodity consumed. For example, if a consumer consumes 3 cups of coffee, then the total utility is the sum of the utility from all the three cups.

Marginal Utility

Marginal Utility is the addition made to the total utility by consuming one more unit of a commodity. For example, if a consumer consumes 3 cups of coffee, the marginal utility is the utility derived from the 3rd unit. It is the total utility of 3 cups minus the total utility of 2 cups of coffee.

$MUn = TUn - TU\ n\text{-}1$

Law of Diminishing Marginal Utility

The law of diminishing marginal utility explains an ordinary experience of a consumer. If a consumer takes more and more units of a commodity, the additional utility he derives from an extra unit of the commodity goes on declining. i.e. the marginal utility decreases with the increase in the consumption of a commodity. When marginal utility decreases, the total utility increases, but at a diminishing rate.

This Law is also known as Gossen's I Law.

Statement of the law

The Law states that as a person gets more and more units of a commodity, marginal utility from each successive unit will go on falling till it becomes zero or negative. According

to Alfred Marshall, "the additional benefit which a person derives from a given increase of his stock of a thing diminishes with every increase in the stock that he already has".

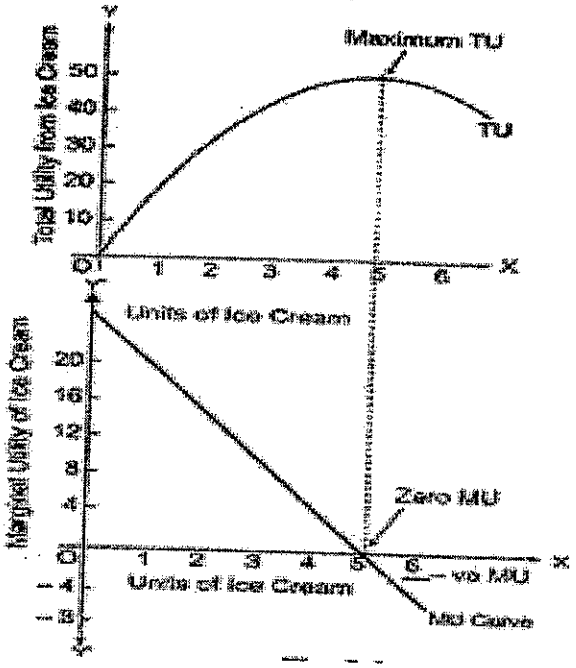
Assumptions of the Law

1. The units of the commodity must be of a standard size.
2. All the units of the commodity must be identical in all aspects like taste, quality, colour and size.
3. The law works only when the process of consumption continues without any time gap.
4. The consumer's taste, habit or preference must remain the same during the process of consumption.
5. The consumer is assumed to be rational. As a rational consumer, he wants to maximise the total utility.
6. Utility is measurable.

Relationship between total and marginal utility

Suppose Mr X purchases the same product one by one continuously. The first unit gives him higher utility, when he buys the second, the extent of his utility will reduce. If he continues to take additional units, the utility derived from the third unit will be less than that of the second one. In this manner, the marginal utility from the extra units will go on decreasing. If the consumer continues to take more units, marginal utility falls to zero and then becomes negative.

Quantity	Total Utility	Marginal Utility
1	20	20
2	30	10
3	38	8
4	45	7
5	45	0
6	41	-4



From the table it is clear that the marginal utility goes on declining when successive unit of the same product is consumed. The consumer derives 20 units of utility from the first unit that he consumes. When he consumes the product continuously, the marginal utility falls to 7 unit for the fourth and becomes zero for the fifth unit. The marginal utility is negative for the 6th unit. Thus, marginal utility declines at first, reaches zero and then becomes negative.

The relationship between Marginal and Total Utility can be summarised as:

When marginal utility declines, total utility is increasing.

When marginal utility reaches zero, total utility is a maximum.

When marginal utility becomes negative total utility starts declining.

Limitation of the Law

1. Deriving utility is a psychological experience. When it is said that a unit of X gives ten units of utility, this means that utility can be measured precisely. In reality, utility cannot be measured.
2. The Law is based on a single commodity consumption mode. That is, a consumer consumes only one good at a time. In real life, a consumer consumes more than one good at a time.
3. According to the Law, a consumer should consume successive units of the same good continuously. This is an unrealistic assumption.
4. The Law assumes that the marginal utility of money is constant. This assumption has been severely criticised.
5. As utility itself varies from person to person, marginal utility derived from the consumption of a good cannot be measured precisely.

Importance of the Law

1. The law of diminishing marginal utility is the foundation for various other economic laws. For example, the law of demand is the result of the operation of this law. As utility falls, the consumer is willing to pay only a lower price for successive purchases.
2. This law is a handy tool for the finance minister for increasing tax rate for the rich.
3. Producers are guided by the operation this law. They constantly change the design, the package of their goods so that the goods become more attractive to the consumers and they appear as new goods.
4. Consumers are also guided by this law when they make their purchases. They always try to purchase a wide variety of products.

1.8 Demand

The demand for a commodity at a given price refers to the quantity of it that will be purchased per unit of time at that price in the market. It is the desire for a product backed by the ability to pay and willingness to purchase it. It depends mainly on the price at which the commodity is sold.

Determinants of Demand (Factors influencing Demand)

1. Price of the product.
2. Level of income of the consumer.
3. Price of related goods.

4. The taste, habits and preferences of the consumer.
5. Changes in technology.
6. Changes in government policy.
7. Population of the region.
8. Advertisement.
9. Climate and weather conditions in the region.

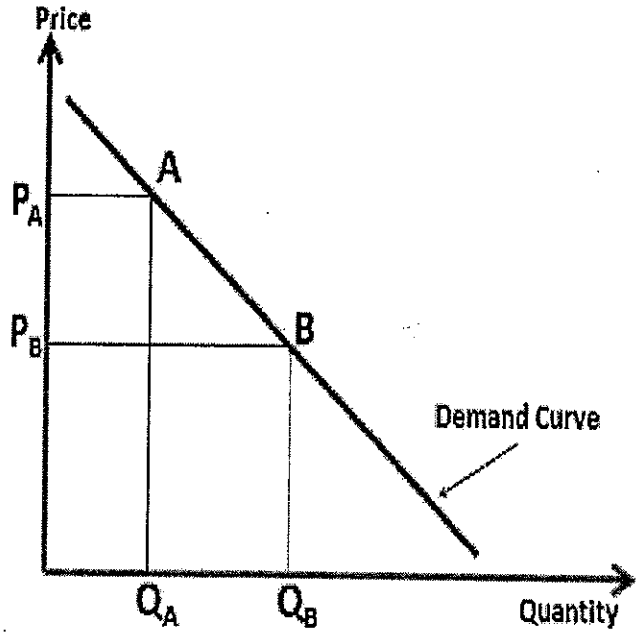
Demand Schedule

It relates the quantity purchased to price. It shows the quantities of a product that is demanded at different alternative prices. The demand schedule given below shows the quantities of commodity X that would be demanded at various prices.

Price of X	Quantity of X
5	175
10	150
15	125
20	100
25	75

Demand Curve

The demand curve is the graphical representation of the demand schedule. It slopes downward from left to right showing that price of a product and its quantity demanded is inversely related. It is seen that at a price of OP_A the demand is OQ_A and when price decreases to OP_B the quantity demanded increases to OQ_B.



Law of Demand

The law expresses the functional relationship between the price and quantity demanded of a commodity. It states that more of a commodity will be purchased at a lower price and less of it at a higher price, other things remaining the same. 'Other thing remaining the same' is known as *ceteris paribus* and refers to the following assumptions.

Assumptions of the Law

1. The income of the consumer remains constant.
2. There is no change in the consumers taste and preferences.
3. The prices of related goods remain unchanged.
4. The commodity does not have any close substitutes.
5. Consumer does not expect future price increases.
6. The commodity does not have a prestige value.

Exceptions of the Law

There are certain rare instances where the law of demand will not hold good.

1. Giffen Paradox: Robert Giffen discovered that poor people will purchase more of certain goods if their prices increase. Such goods are called inferior goods. Inferior goods are those goods which people buy in large quantities when they are poor and in small quantities when they become rich.
2. Veblen Effect: Thorstein Veblen has pointed out that some goods are demanded because of their high price. Such commodities are purchased not because of their usefulness, but because they confer a status or prestige to the buyer. If the price of diamonds were to become very cheap, the rich would stop purchasing it.
3. Speculation: If the price of a commodity is increasing and people expect it to go up still further, they may buy more of the product at higher prices in order to beat the price rise.
4. Bandwagon effect: In some instances, purchase of a commodity is influenced by the social class of the consumers. A person buys a new product because everyone in his social group has purchased one.
5. When people link the higher price of products to their better quality, they may buy the more expensive ones even when cheaper ones are available.

Individual demand & Market demand

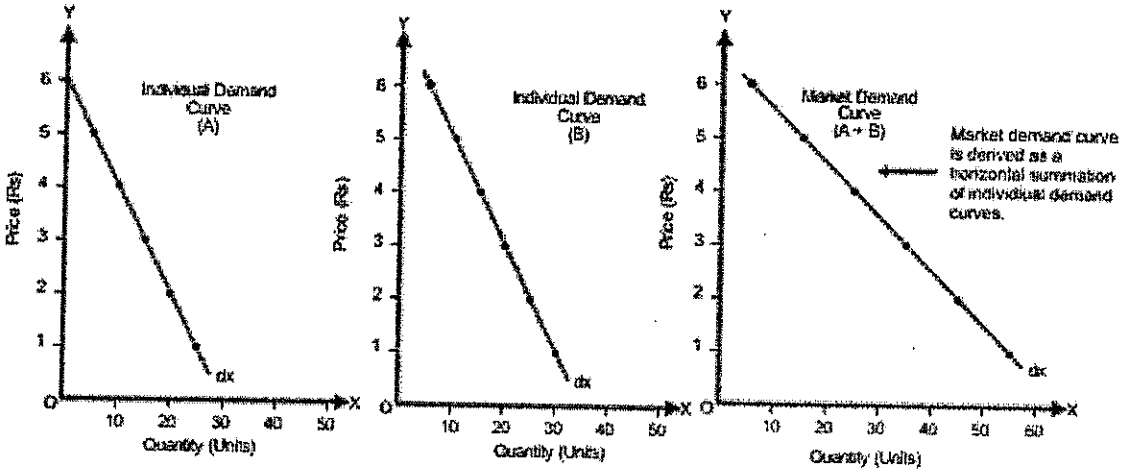
Individual demand refers to the quantity of a commodity that a consumer will purchase at various prices. It shows the individual preferences of the consumer.

Price of X	Quantity of X
5	6
10	5
15	4
20	3
25	2

Market demand is the sum total of the demands of all the individuals in the market. It is obtained by adding together the quantities demanded by all individuals at various prices.

Prices of pen (Rs.)	Quantity demanded by A (units)	Quantity demanded by B (units)	Market Demand (units)
6	0	5	5
5	5	10	15
4	10	15	25
3	15	20	35
2	20	25	45
1	25	30	55

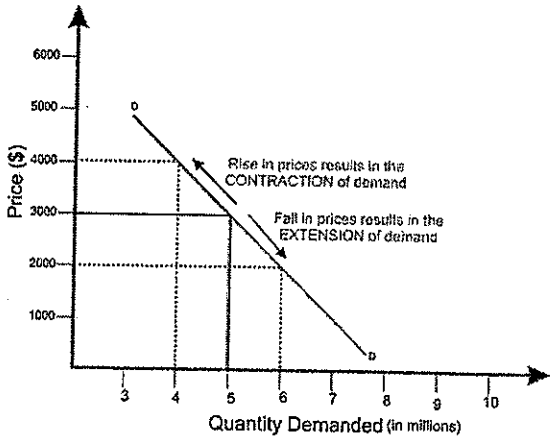
Table 3.1



Assume there are only two consumers in the market. Here at a price of Rs.3, consumer A purchases 15 units of the product while B purchases 20 units. The total demand of the product in the market is for 35 units as shown by the market demand curve.

Extension and Contraction of Demand (Movement along the demand curve)

If a change in the demand of a commodity is solely due to a change in its price, demand is said to extend or contract. It is represented by movements along the demand curve.



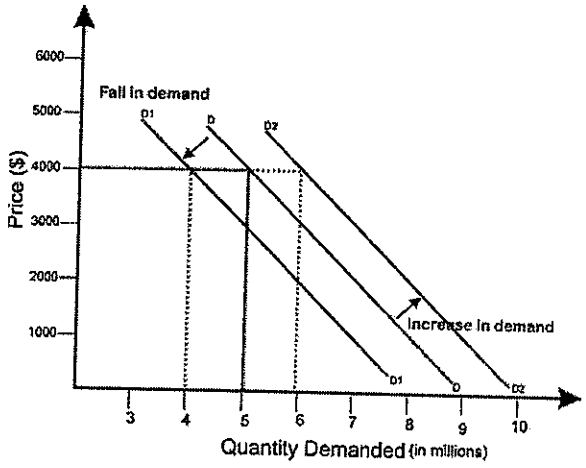
Extension & Contraction of Demand

When the price of the good is $3000, demand is for 5 million units. When the price falls to $2000, demand expands to 6 million. Here the extension in demand is by 1 million.

When the price of the good rises to $4000, the quantity demanded contracts to 4 million and the contraction in demand is by 1million.

Increase and decrease in demand (shifts in demand)

In this case factors other than price influence the demand curve. Changes in income, tastes etc. will cause demand to increase or decrease. Here the demand curve will shift. In the figure, increase in demand is shown by a shift of the demand curve to the right from DD to D_2D_2. The decrease in price causes the curve to shift to the left from DD to D_1D_1.



Shift in Demand Curve

1.9 Elasticity of Demand

The term elasticity expresses the degree of correlation between demand and the factors influencing it. The law of demand explains that demand will change due to a change in the price of the commodity. However, it does not explain the magnitude and rate at which demand changes. The concept of elasticity of demand measures the rate of change in demand. This concept was introduced by Prof. Alfred Marshall.

Types of elasticity of demand

There are three types of elasticity of demand. (a) Price elasticity (b) Income elasticity and (c) Cross elasticity

(A) Price Elasticity

It is the degree of responsiveness in quantity demanded due to a change in price. It is the ratio of the percentage change in quantity demanded to the percentage change in price.

$$e_p = \frac{Percentage\ change\ in\ quantity\ demanded}{Percentage\ change\ in\ price}$$

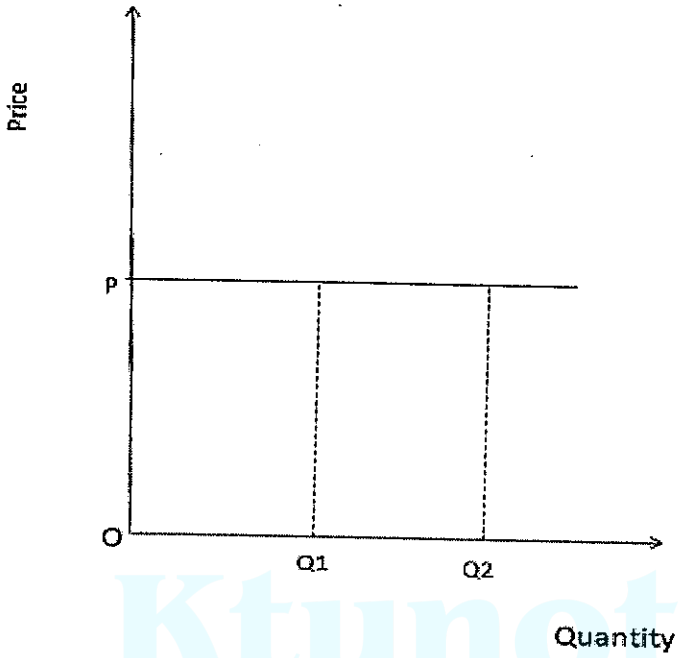
$$e_p = \frac{\frac{\Delta Q}{Q}}{\frac{\Delta P}{P}}$$

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

Types of Price Elasticity

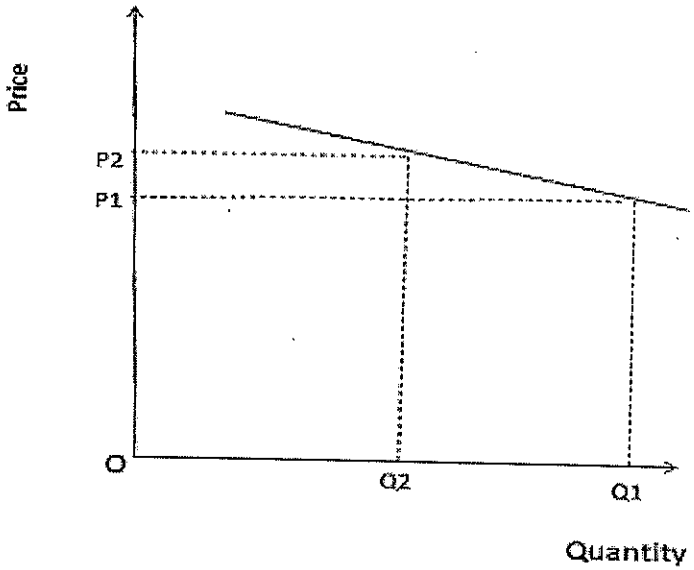
1. Perfectly Elastic

Here even very small changes in price causes an infinite change in quantity demanded. Such commodities have perfectly elastic demand and their demand curve will be a horizontal line. In such cases, the value of $e_p = \infty$.



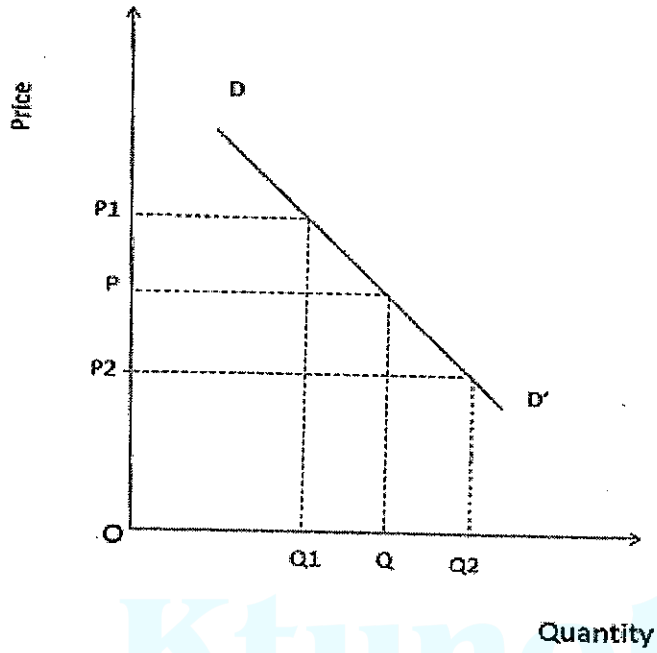
2. Relatively Elastic

Here the percentage change in quantity demanded of a commodity is more than the percentage change in its price. In such cases the value of $e_p > 1$. E.g. luxuries



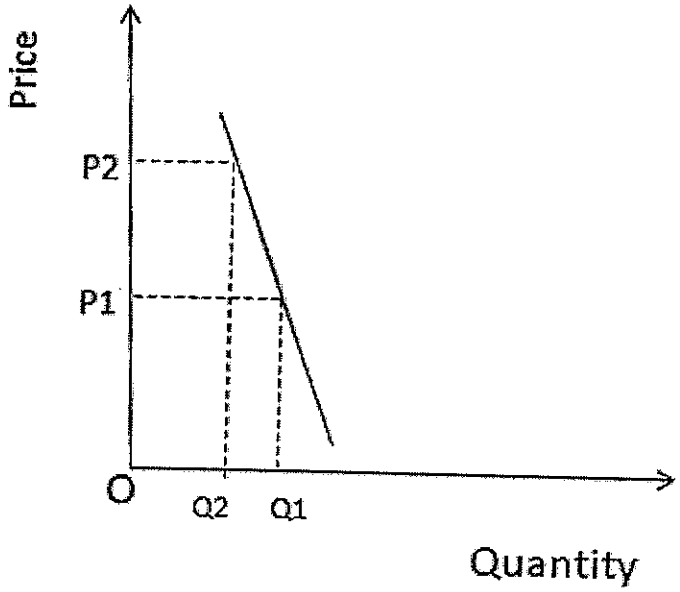
3. Unit Elasticity

Here the rate of change in demand is exactly equal to the rate of change in price. The demand curve for such products will be a rectangular hyperbola. In such cases, the value of $e_p = 1$



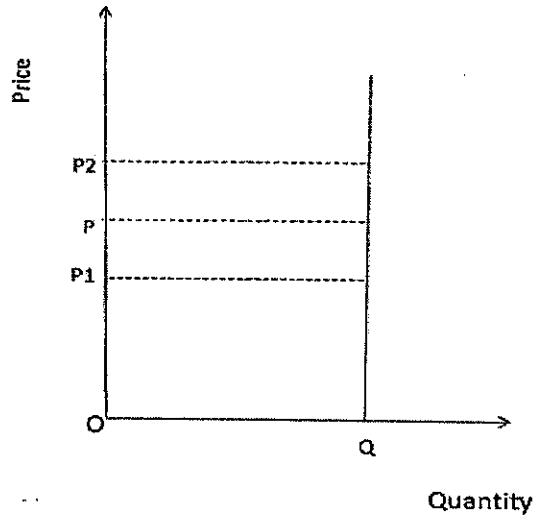
4. Relatively inelastic

In this type of commodities, the proportionate change in quantity demanded is less than the proportionate change in its price. In such cases the value of $e_p < 1$. e.g., necessities



5. Perfectly inelastic

Here even very large changes in price does not cause any change in quantity demanded. Such commodities have perfectly inelastic demand and their demand curve will be a vertical line. In such cases, the value of $e_p = 0$.e.g., salt, matchbox, rare paintings.



1.10 Measurement of Elasticity

There are four methods for measuring price elasticity

1. Percentage Method

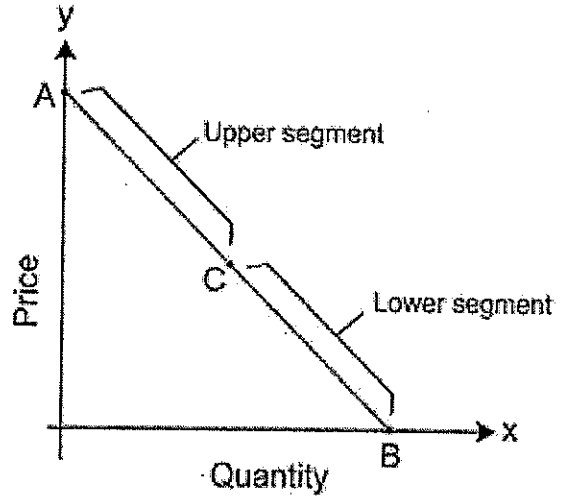
It is the ratio of the percentage change in quantity demanded to the percentage change in price.

$$e_p = \frac{Percentage\ change\ in\ quantity\ demanded}{Percentage\ change\ in\ price}$$

2. Point Method

This method is used to calculate the price elasticity at any point on a linear demand curve.

$$e_p = \frac{Lower\ Segment}{Upper\ Segment}$$



Elasticity at point C is given by

$$e_p = \frac{BC}{CA}$$

Upon using this method it can be seen that at any point on the lower segment $e_p < 1$ and at any point on the upper segment $e_p > 1$.

3. Total Outlay Method

According to this method the change in total outlay or expenditure of the purchaser before and after the variations in price is estimated.

e_p is greater than unity, when, with the fall in price the total amount spent by the consumer on the commodity increases. On the other hand, if price rises, the total amount spent will decrease.

e_p is less than unity, when, with the fall in price the total amount spent by the consumer on the commodity decreases.

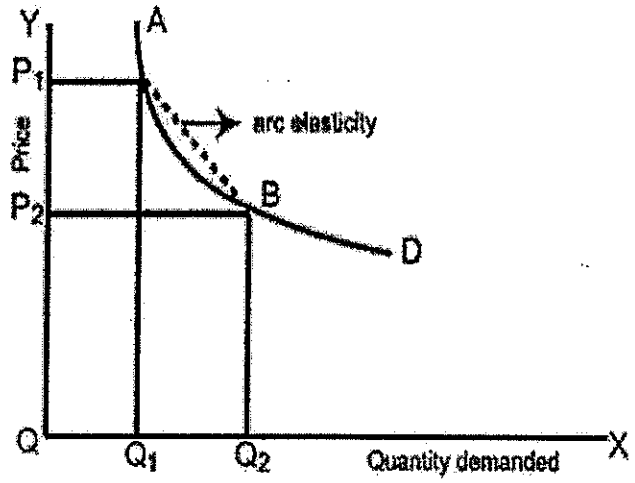
Price	Quantity Demanded	Total Outlay
5	60	300
6	50	300
7	40	280
8	30	240

In the above instance, elasticity serves as a warning signal to the businessman. He increases the price hoping to increase his revenue but due to the inelastic demand for his product, he suffers a decline in his revenue.

4. Arc Method

The demand curves are seldom continuous as there are big gaps in price and quantity. Hence the points on the demand curve are quite apart and elasticity is measured along an arc of the demand curve.

Here within the entire demand curve, two points A and B are considered. Upon joining them an arc is obtained and on average, the elasticity is measured.



$$e_p = \frac{Change\ in\ quantity}{Average\ Quantity} \div \frac{Change\ in\ Price}{Average\ Price}$$

$$e_p = \frac{Q1 - Q2}{(Q1 + Q2)/2} \div \frac{P1 - P2}{(P1 + P2)/2}$$

$$e_p = \frac{\Delta Q}{Q1 + Q2} \div \frac{\Delta P}{P1 + P2}$$

(B) **Income Elasticity**

It is the degree of responsiveness of demand to the change in income.

$$e_y = \frac{Percentage\ change\ in\ quantity\ demanded}{Percentage\ change\ in\ income}$$

$$e_y = \frac{\frac{\Delta Q}{Q}}{\frac{\Delta Y}{Y}}$$

For luxuries, $e_y > 1$

For necessities, $e_y < 1$

For inferior goods, income elasticity is negative. The consumption of inferior goods decrease with a rise in income for they are replaced by the superior substitutes at higher levels of income.

(C) **Cross Elasticity**

It is the degree of responsiveness of demand to the change in the price of related commodities. The relationship between two commodities x and y may be substitutive or complementary.

$$e_c = \frac{Percentage\ change\ in\ quantity\ demanded\ of\ X}{Percentage\ change\ in\ price\ of\ Y}$$

$$e_c = \frac{\frac{\Delta Qx}{Qx}}{\frac{\Delta Py}{Py}}$$

If two commodities are substitutes, e_c will be positive.
If they are complementary, e_c will be negative.
If the commodities are unrelated, e_c will be zero.

Applications of Elasticity of Demand

1. Taxation: The finance minister will tax those commodities with inelastic demand to ensure a stable revenue. As a result of the tax, even when price increases people will continue to purchase the commodity.
2. Determination of employee salary: Salaries are likely to be high in places where the demand for workers is inelastic.
3. International Trade: If the demand for a country's exports is elastic, its trade will always be under pressure and the terms of trade may turn unfavorable.
4. Poverty in Plenty: The concept of elasticity explains the paradox of poverty in the midst of plenty since demand is inelastic for perishable agricultural products. A rich harvest may actually fetch less money to the farmer.
5. Monopoly price: A monopolist often has an inelastic demand for his product and is able to charge a high price.

1.11 Supply

Supply refers to the quantity of a product that will be offered for sale at a particular price at a certain time. The main factor influencing supply is price.

Determinants of supply

1. Production Costs: If the cost of production increases due to an increase in the price of raw materials, supply will decrease.
2. Production Technology: Improvements in technology lowers the cost of production and increases supply.
3. Number of producers of the product.
4. Improvement in transport facilities
5. Mass Production: If products are mass produced in factories, production costs will be lower and more will be supplied into the markets as companies try to sell all of the output.

6. Taxation: A higher rate of taxes on output will result in less being produced by the manufactures.
7. Other Factors: Many factors like political instability, war, climatic factors and natural calamities reduce supply.
8. International Trade: If a country encourages trade more of various products are likely to be available.

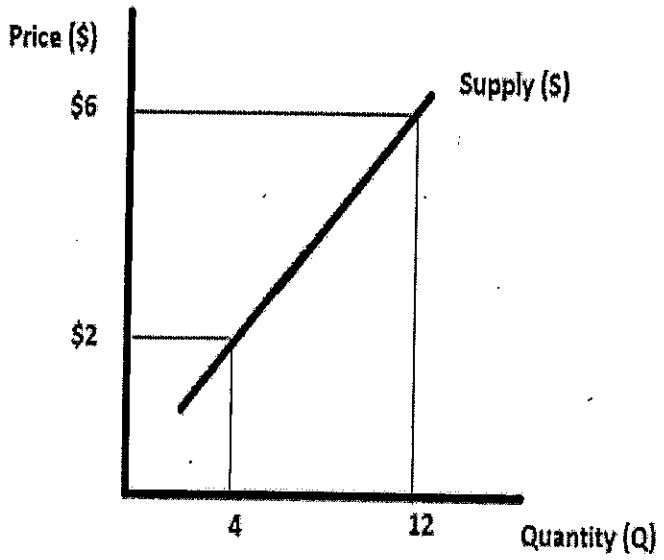
Supply schedule

The supply schedule relates the quantity supplied of a commodity to its market price. It shows the various quantities of a commodity that will be offered for sale at different prices.

Price of X ($)	Quantity of X (units)
1	2
2	4
4	8
5	10
6	12

Supply curve

The supply curve is the graphical representation of the supply schedule. It is positively sloped showing that the price of a product and its quantity supplied is directly related.



It is seen that at a price of $2 the supply is 4 units and when price increases to $6 the quantity supplied also increases to 12 units.

Law of Supply

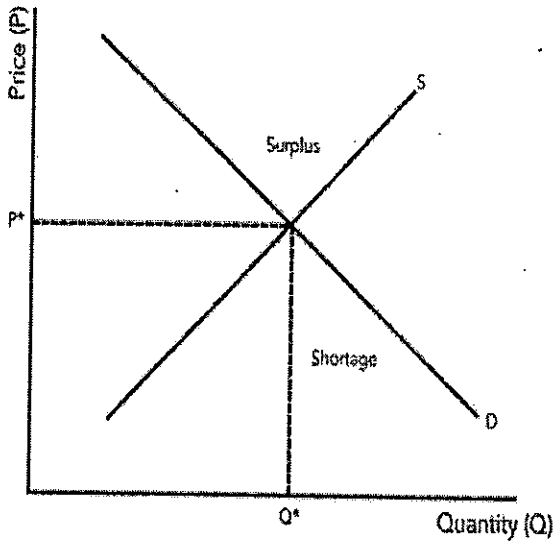
The law of supply states that less of a product will be supplied at a lower price and more of it at a higher price, other things remaining the same. It establishes a direct relationship between price and supply.

1.12 Equilibrium (Determination of equilibrium price in the market)

Consumers purchase a product because it gives them utility and will try to buy it at the lowest possible price. Manufacturers sell a product to maximize their profit and will try to sell at the highest possible price. Thus, the two opposing forces of demand and supply interact to bring about an equilibrium price.

The market equilibrium comes at that price and quantity where the forces of demand and supply are in balance. At the equilibrium price, the amount that buyers want to buy is exactly equal to the amount that sellers want to sell and there is no tendency for the price to rise or fall. The equilibrium price is also called the market clearing price.

Price (Rs)	Demand (units)	Supply (units)	Market Status
30	100	300	Surplus
20	200	200	Equilibrium
10	300	100	Shortage



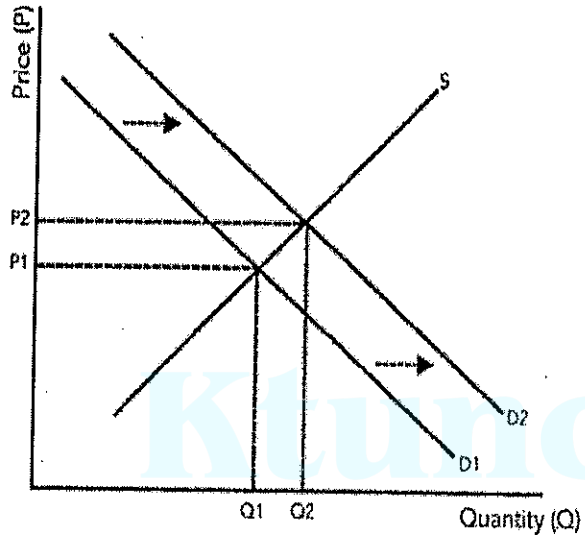
The market is in equilibrium at the point at which the demand and supply curves intersect. Suppose price is increased to Rs.30. At this price there is a surplus of the product and price has the tendency to fall. If price is decreased to Rs.10, there is a shortage of the product and price has the tendency to rise. The market is in equilibrium at a price of Rs.20 when quantity supplied becomes equal to quantity demanded. Neither the seller nor the buyer has any tendency to change the price.

1.13 Changes in demand and supply and its effects

1. Rise in Demand

A rise in demand will cause the demand curve to shift upwards and to the right resulting in higher prices. It may occur due to:

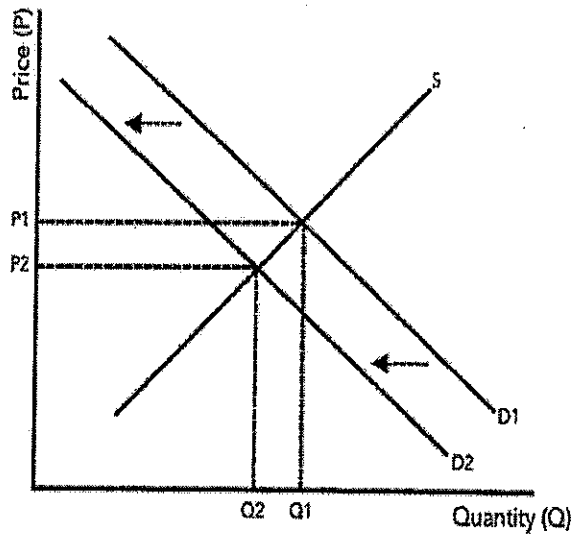
1. Increase in the price of substitutes.
2. Decrease in the price of complementary goods.
3. Increase in the level of income.
4. Changes in taste and preferences in favour of the product.
5. Expectation of future scarcity.



2. Fall in Demand

A fall in demand will cause the demand curve to shift downwards and to the left resulting in lower prices. It may occur due to:

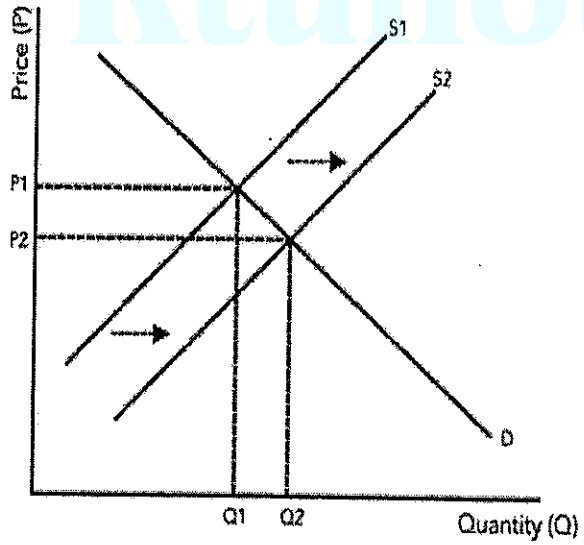
1. Decrease in the price of substitutes.
2. Increase in the price of complementary goods
3. Decrease in the level of income
4. Changes in taste and preferences against the product.
5. Expectation of future surpluses.



3. Rise in Supply

A rise in supply will cause the demand curve to shift downwards and to the right resulting in lower prices. It may occur due to:

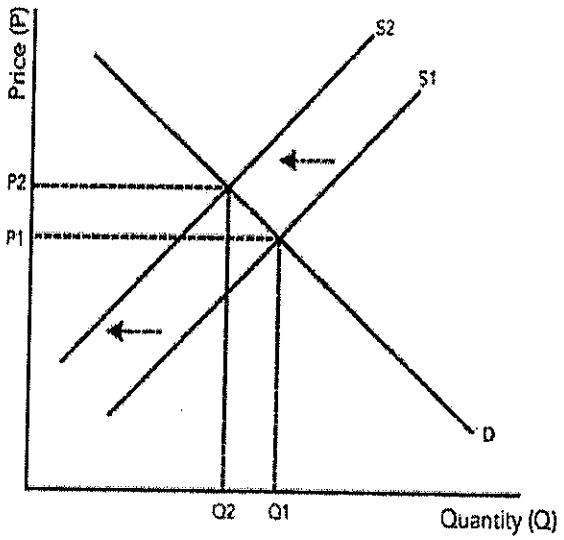
1. Decrease in the price of related goods.
2. Decrease in the cost of production.
3. Increase in the level of technology and skill.
4. Favourable unplanned factors like good weather conditions.



4. Fall in Supply

A fall in supply will cause the demand curve to shift upwards and to the left resulting in higher prices. It may occur due to:

1. Increase in the price of related goods.
2. Increase in the cost of production.
3. Unfavourable unplanned factors like bad weather conditions.

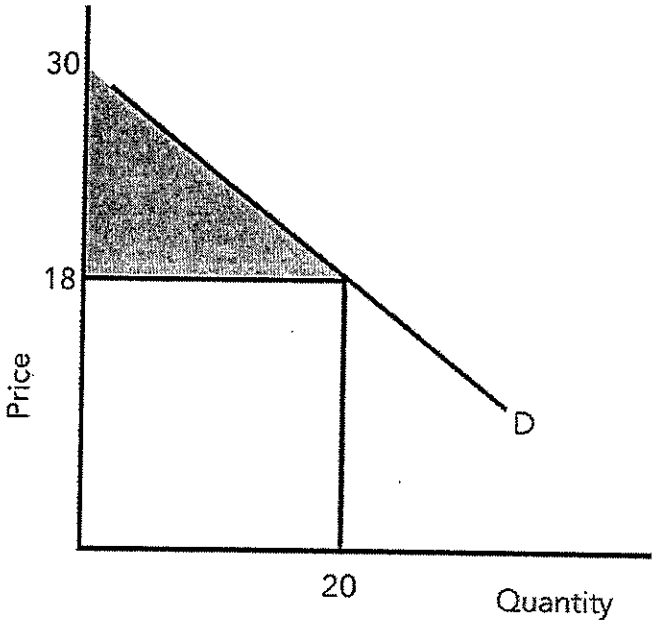


1.14 Consumer surplus

Consumer surplus is the amount a buyer is willing to pay for a good minus the amount the buyer actually pays for it. It is the gap between the utility of a good and its market value. The surplus arises because the consumer receives more value than he pays for.

Consumer surplus can be measured using the demand curve. The demand curve measures the price buyers are willing to pay for the good. The difference between this willingness and the market price is each buyer's consumer surplus. The total area below the demand curve and above the price line measures the consumer surplus of all buyers in the market.

In the example, the price of the good is Rs.18. All the buyers who were willing to buy at prices above Rs. 18 are better off because they now pay only Rs.18 for the good. The total consumer surplus is given by the shaded area.

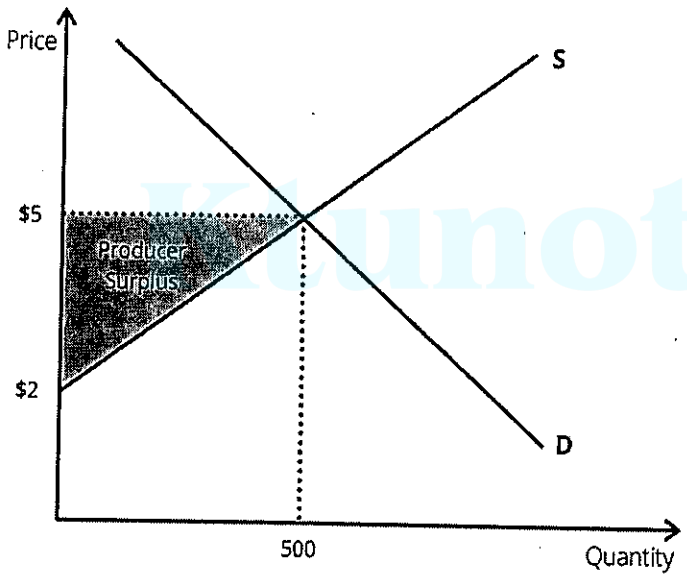


Applications of Consumer Surplus

1. The concept of consumer surplus is useful in evaluating many government projects. A toll-free road or a bridge should be built if its consumer surplus is more than its costs.
2. This concept points to the enormous privileges enjoyed by citizens in modern times. Each person enjoys a wide variety of enormously valuable goods that are purchased at very low prices.
3. It is a measure of the economic wellbeing of a society. A larger consumer surplus provides buyers with immense benefits.
4. It is used in evaluating the loss to the consumer from taxes.
5. It is used to evaluate the gain from subsidies.

1.15 Producer surplus

Producer surplus is the amount a producer is paid for a good minus the producer cost. It measures the benefit that sellers of a product receive. It is the area above the supply curve but under the price line. Here the price of the good is $5 while producers are willing to supply it from $2 onwards. The total producer surplus is shown by the shaded area.



1.16 Taxation

A tax is a compulsory contribution imposed upon persons to meet the expenses of the government. All countries impose different types of taxes to generate revenue. In most poor countries, taxes are the major source of income for the government. The money thus collected is utilized for running the government and for developmental activities.

In the words of Prof. Dalton, a tax is a compulsory contribution imposed by the public authority, irrespective of the service rendered to the taxpayer, in return for which no specific and direct *quid pro quo* is rendered to the payer.

The State has the right to tax. Refusal to pay the tax is punishable. The phrase 'without *quid pro quo*' means the absence of any direct and proportional benefit to the taxpayer from the government.

Direct and Indirect taxes

Taxes can broadly be classified into

a. Direct taxes

b. Indirect taxes

Direct taxes

A direct tax is one whose burden is borne by the person on whom it is levied. The relation between the tax-payer and the revenue authorities is direct and personal. The burden of the tax cannot be transferred to some other person. In such a tax the impact and incidence of the tax is on the same person.

Impact of taxation refers to the immediate burden of the tax. It refers to the person who has to pay the tax to the authorities. Impact is on the person who is responsible for the payment of the tax.

Incidence of taxation refers to the ultimate burden of the tax. It refers to the person on whom the burden of the tax ultimately falls. It is the final resting place of the tax burden.

In the case of a direct tax like income tax the impact and incidence of the tax is on the same person. He cannot transfer the tax to some other person.
E.g. Income tax, wealth tax, gift tax, property tax

Advantages
1. They are economical since the cost of collection is low.
2. They are progressive in nature.
3. They are equitable due to the presence of exemption limit.
4. They are certain. The money burden of the tax is known in advance.
5. Direct taxes create civic consciousness. The tax payer feels that he is contributing towards the State expenditure. He tries to ensure that money is not wasted by the government.

Indirect taxes

Here the tax is levied on one individual but the burden falls on another. The tax depends on the value of the particular commodity purchased. There is an indirect relation between the tax-payer and the revenue authorities since the taxes are collected unofficially through the merchants.

In the case of indirect taxes, the impact and incidence are on different persons. For example, the excise duty on cement is paid by the producers but ultimately, they transfer it to the consumer by increasing the price of the product by an amount equal to the tax.
E.g. value added tax, customs duty, service tax etc.

Advantages
1. Indirect taxes are convenient.
2. Tax evasion is not possible.
3. They are socially desirable since harmful products can be taxed at high rates.
4. Taxation of certain commodities will discourage their production. In this way resources used for the production of luxuries can be diverted to the production of necessities.
5. Income from them goes on increasing with increase in industrial output.

1.17 Principles of taxation (Canons of Taxation)

Canons of taxation refer to principles laid down as a direction to the tax authorities. Governments should ensure that their taxes follow the canons.

1. Canon of Equity. Every person will pay taxes according to his ability to pay. It lays the moral foundation of the tax system. There should be equality in the sacrifice of each person who pays the tax.

2. Canon of Certainty. The tax payer should know in advance how much tax he has to pay. The time and manner of payment must also be known. The tax payer should be able to see why he has to pay a particular amount. The government should also be sure of the amount that will be collected as tax so that it can follow its financial programme.
3. Canon of Convenience. Since the tax payer makes a sacrifice at the time of payment, the mode of payment should be made as convenient as possible. Taxes on consumers are convenient. They are paid when purchases are made and consumers make no special arrangement for paying a tax. The price of the product includes the tax also.
4. Canon of Economy. Cost of tax collection should be kept to the minimum. Taxes should also not retard industrial development. If income taxes are high, savings are likely to suffer. Similarly, taxes on raw materials raise the price of the finished products and weaken the competitive power of companies.
5. Canon of Simplicity. Tax payer should understand the details of the tax without the assistance of experts.
6. Canon of diversity. A single tax will not be enough. There should be a wise mixture of direct and indirect taxes so that all persons who can afford to may contribute to the state revenue.
7. Canon of elasticity. The various taxes and their rates must be varied according to the level of income of the people and the requirements of the country.

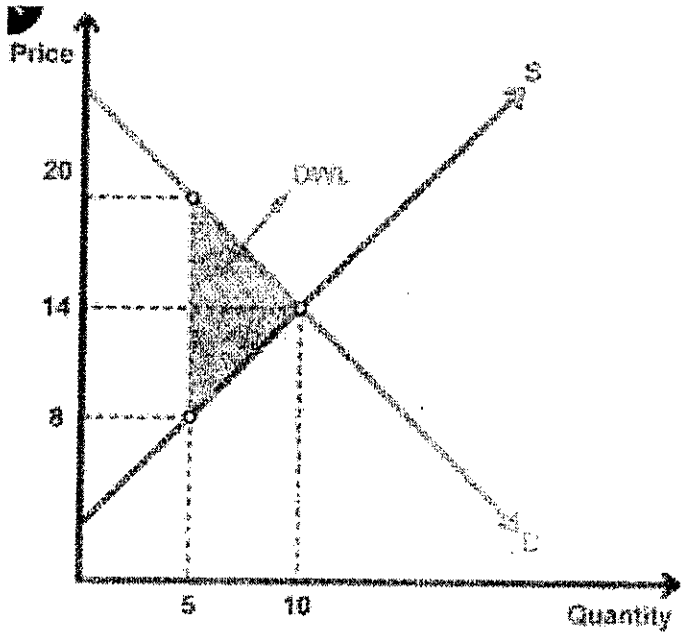
1.18 Goods & Services Tax

GST is one indirect tax for the whole nation which will make India one unified single market. It is the tax system that is now being followed by several countries around the world. It is an indirect tax reform which aims to remove tax barriers between states and create a single market. It is a tax only on the value added at each stage. This system of input tax credit in GST allows sellers to claim the tax already paid, which reduces the final burden on the end consumer.

Advantages
1. GST will result in the creation of a common national market.
2. By avoiding the cascading effect of taxes, GST will result in gains for the end consumer.
3. It will result in a reduction in multiplicity of taxes.
4. It will ensure that indirect tax rates are common across the country,
5. It will bring about transparency in the tax system.
6. To traders, it means a simpler tax regime and ease of payment since the payment can be done online.
7. It will improve the collection of taxes and boost the development of Indian economy by removing the indirect tax barriers between the different States in India.
8. By allowing input tax credit, it will reduce the burden of taxes, and this is expected to bring down prices.
9. GST is mainly technology driven, hence chances of malpractices are minimized.

1.19 Deadweight Loss

The fall in consumer and producer surplus that results due to a tax is the deadweight loss. When a new tax is introduced, the price paid by the buyers rises and the price received by sellers falls. There is a loss in the real income of both buyers and sellers. As the price of a good increases due to the introduction of a new tax, buyers reduce their purchases and the sellers are able to sell less of the good than before. Thus, the size of the market shrinks.



In the figure, initially at the equilibrium point, price is Rs.14 and quantity is 10 units. The consumer surplus is shown by A+B+C while producer surplus is D+E+F. A new tax of Rs. 6 is introduced on the buyers and sellers. The effective price of the good is now Rs. 20. Due to the increase in price, the seller is able to sell only 5 units. The effective price received by the seller is now only Rs. 8 since he has to pay a tax of Rs.6. The tax reduces consumer surplus by the area B+C and producer surplus by the area D+E. The tax revenue of the government is given by B+D. Since the fall in producer and consumer surplus exceeds tax revenue, the tax is said to impose a deadweight loss, given by the area C+E.

Problems:-

1. Suppose hotels and homes have the following demand for ornamental lights.

Price	No. Of units purchased by hotels	No. Of units purchased by homes
150	2100	1000
200	2000	800
250	1900	600
300	1800	400

(a) As the price of tickets rises from 200 to 250, what is the price elasticity of demand for (i) hotels and (ii) homes?
(b) Why might hotels have a different elasticity than homes?

2. A company had spent Rs. 3 crores on advertisement in the previous year and its sales of mobiles were 150 lakh units in that year. In this year, it increased its outlay on advertisement to 4 crores and sales jumped to 280 lakh units. Calculate the advertising elasticity of the company. Is it profitable for the company to spend more on advertising?

3. When the price of product Y was reduced from Rs.10 to Rs.9, the quantity demanded of X fell from 1000 units to 800 units. Calculate the cross elasticity of demand for X. Are the two products substitutes or complements?

4. The supply equation for selling a product is as follows: Q = -5 + 2P. How many units can be sold if the price is Rs.4 per unit? At what price will the manufacturer be no longer willing to sell any unit?

5. The price of a matchbox was Rs. 3 a box, and Mr. X brought 10 boxes. Later, the price went up to 3.75 a box, and he is now willing to buy 8 boxes. Is his demand for matchboxes elastic or inelastic?

6. When the income of a consumer was Rs. 5000 per month, the quantity demanded of a commodity was 25 kgs. When his income increased to 5500, his demand increased to 30 kgs. Calculate the income elasticity of demand.

7. If a consumer's elasticity of demand for coffee is constantly (-) 0.9, and he buys 4 cups when the price is `$1.50 per cup, how many will he buy when the price is $1.00 per cup?

8. A shopkeeper decides to sell eggs for $4 a dozen. He sells 50 dozen, and decides that he can charge more. He raises the price to $6 a dozen and sells 40 dozen. What is the elasticity of demand? Assuming that the elasticity of demand is constant, how many would he sell if the price were `$10 a dozen?

9. Which of the following goods are likely to have elastic demand, and which are likely to have inelastic demand?
• Cooking oil • Pepsi • Chocolate • Water • Medicine • Wall Painting
• Text book • Diesel •ultra slim laptops

10. An individual spends all his income for two goods X and Y. If with the rise in the price of good X, quantity demanded of good Y remains unchanged, what is price elasticity of demand for X?

11. Why would a government tax on cigarettes be an ineffective method to decrease consumption of cigarettes?

12. A shop charges $10 per kilo for chocolates. The elasticity of demand for chocolate in the town is 2.5. If the shop wants to increase its total revenue, what advice will you give and why?

13. A 10 percent increase in income brings about a 15 percent decrease in the demand for a good. Is the good a normal good or an inferior good? Explain your answer.

14. If the cross elasticity of demand between products X and Y is -1.4, then are the two commodities substitutes or complements? Explain your answer.

Module 2 (Production and cost)

Production function – law of variable proportion – economies of scale – internal and external economies – Isoquants, isocost line and producer's equilibrium – Expansion path – Technical progress and its implications – Cobb-Douglas production function - Cost concepts – Social cost: private cost and external cost – Explicit and implicit cost – sunk cost - Short run cost curves -long run cost curves – Revenue (concepts) – Shutdown point – Break-even point.

2.1 Production Function

A production function describes an empirical relationship between output and inputs. It specifies the maximum output that can be produced with a given quantity of inputs. It is the functional relationship between physical inputs and physical output for a given state of technology. Inputs refer to the factors used in production i.e. land, labour, capital and enterprise. Output refers to the quantity of commodities produced.

The production function is given as

$Q = f(x_1, x_2, x_3.....)$

Where Q is the output of a commodity and x_1, x_2, x_3.....are the various productive resources which go into the making of the quantity of the commodity.

Production depends on
1. Quantity of resources used
2. Level of technology
3. Size of the firm
4. Production processes used
5. Relative prices of factors
6. Manner in which factors are combined

Types of Production Functions

1. Fixed Proportions Production Function

Here the factors of production are used in definite fixed proportions. The firm cannot vary the proportion of the factors, say labour and capital no matter the level of output.

2. Variable Proportions Production Function

Here the ratio in which the factors of production are used is variable. A given quantity of output can be produced by several alternative combinations of factors.

3. Linear Homogenous Production Function

If all the factors of production are increased in some proportion, the output also increases in the same proportion. A doubling of all inputs will double output. The Cobb-Douglas Production Function is an example of a linearly homogeneous production function.

On the basis of time period, production function is classified into two:

1. Short-run production function which is explained by the Law of Variable Proportions and

2. Long-run production function which is explained by the Law of Returns to Scale

2.2 Cobb- Douglas Production Function

It is a well-known empirical production function and is widely used to represent the relationship of an output to inputs.

Charles Cobb and Paul Douglas published a study in which they modeled the growth of the American economy. They considered a simplified view of the economy in which production output is determined by the amount of labor involved and the amount of capital invested and their model proved to be remarkably accurate.

The function they used to model production was of the form:

$$Q = AK^{\alpha} L^{\beta}$$

Q = total production
K = capital input
L = labor input
A = technology parameter
α = elasticity of output with respect to capital
β = elasticity of output with respect to labour

Feature of Cobb-Douglas production function

The returns to scale in a Cobb-Douglas production function is revealed by the sum of the two parameters α and β.

a. If $(\alpha + \beta) = 1$, the function exhibits constant returns to scale.
b. If $(\alpha + \beta) > 1$, the function exhibits increasing returns to scale.
c. If $(\alpha + \beta) < 1$, the function exhibits decreasing returns to scale.

2.3 Law of Variable Proportions (Law of Diminishing Marginal Productivity)

This law is applicable to the short-run time period where only one factor is variable and the other factors are fixed. It shows the relationship between units of a variable factor and total product. The law states that as the proportion of one factor in a combination of factors is increased, after a point, first the marginal and then the average product of that factor will diminish. Accordingly, total physical product first increases at an increasing rate, then at a diminishing rate and finally it declines.

Total, Average and Marginal Product

Total product represents the total amount of output produced. In the table below, it starts at zero for zero labour and then increases as additional units of labour are applied. It reaches a maximum when 6 units of labour are used and then declines.

The marginal product of an input is the extra output produced by one additional unit of that input when other inputs are held constant. Here marginal unit means extra unit.

Average product is total product divided by total units of input.

Assumptions of the law

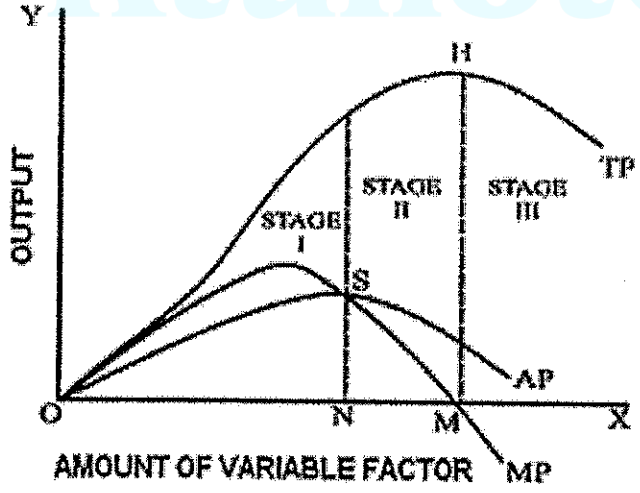
1. Only one factor is made variable and other factors are kept constant.

2. This law does not apply in case all factors are proportionately varied. i.e. where the factors must be used in rigidly fixed proportions to yield a product.
3. The variable factor units are homogenous i.e. all the units of variable factors are of equal efficiency.
4. Input prices remain unchanged.
5. The state of technology does not change or remains the same at a given point of time.
6. The entire operation is only for short-run, as in the long-run all inputs are variable.

The Law

The law of variable proportions has three stages.

Units of Labour	Total Product	Average Product	Marginal Product	Stages
1	8	8	8	Increasing Returns
2	20	10	12	
3	34	11	14	
4	46	11.5	12	
5	54	11	8	Decreasing Returns
6	56	9	2	
7	56	8	0	
8	54	7	-2	Negative Returns



Stage I - Stage of increasing returns

In this stage, the total product, the average product and the marginal product are increasing. The marginal product in this stage increases but later it starts declining. Though marginal product starts declining, it is greater than the average product so that the average product continues to rise. It ends where the average product reaches its maximum point.

Stage II - Stage of decreasing returns

In the second stage, the total product continues to increase but at a diminishing rate. The marginal product and the average product are declining but are positive. At the end of the second stage, the total product is a maximum and the marginal product is zero.

Stage III - Stage of negative returns

In this stage the marginal product becomes negative. The total product and the average product are declining.

A firm will not choose to produce in stages I and III. In stage I since marginal product increases with the increase in a variable factor, there is scope for more efficient utilisation of fixed factors by employing more units of the variable factor. So, the firm will increase its production further. In stage III since the total product is declining and marginal product is negative, the firm has become very inefficient and it can increase its output by reducing the variable factor.

It will choose only the second stage where the total product is a maximum to produce. Thus, the second stage represents the range of rational production decisions.

Limitations of the Law

The law may not work properly in industries where technological changes are rapid. In agriculture too newer techniques like scientific rotation of crops, fertilisers, improved seeds, irrigation and modern implements have all given increasing returns.

Applications of the Law

1. The law applies to agriculture. Since the supply of fertile land is totally fixed, diminishing returns will set in agriculture more quickly than in other industries.
2. The law is applicable in extractive industries like mining, fishing and construction.
3. The law teaches developing countries like India that they are likely to run out of food, drinking water and other natural resources if population keeps on increasing.
4. The law tells businessmen the importance of an optimum plant size in manufacturing industries.

2.4 Returns to Scale (Long-run production function)

In the long run, all factors can be changed. Returns to scale studies the changes in output when all factors or inputs are changed. An increase in scale means that all inputs or factors are increased in the same proportion.

The changes in output as a result of changes in the scale can be studied in 3 phases.

1. Increasing returns to scale

If the increase in all factors leads to a more than proportionate increase in output, it is called increasing returns to scale. For example, if all the inputs are increased by 5%, the output increases by more than 5%. In this case the marginal product will be rising. When a firm expands, increasing returns to scale are obtained in the beginning.

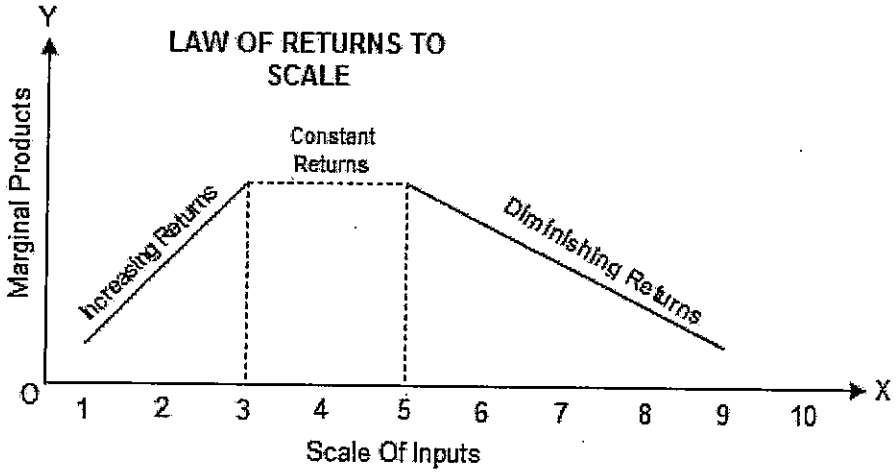
2. Constant returns to scale

If all the factors are increased in a given proportion and then the output increases in the same proportion it is constant returns to scale. i.e. a 5% increase in all the factors will

result in an equal proportion of 5% increase in the output. Here the marginal product is constant.

3. Decreasing returns to scale

If the increase in all factors leads to a less than proportionate increase in output, it is called decreasing returns to scale i.e. if all the factors are increased by 5%, and the output increases by less than 5 %. In this phase marginal product will be decreasing. More and more of inputs are required to obtain equal increments of output.



The above figure explains the different phases of returns to scale. When marginal product increases, total product increases at an increasing rate. So, there is increasing returns to scale. When marginal product remains constant, total product increases at a constant rate and this stage is called constant returns to scale. When marginal product decreases, total product increases at a decreasing rate and returns to scale are decreasing.

2.5 Economies of scale

Economies mean advantages. *Scale* refers to the size of unit. Economies of scale refer to the cost advantages due to the larger size of production. As the volume of production increases, the overhead costs will come down. Bulk purchases of inputs will give a better bargaining power to the producer which will reduce the average variable cost too. All these advantages are due to the large-scale production and these advantages are called economies of scale.

There are two types of economies of scale

a. Internal Economies of Scale

Internal economies of scale are the advantages enjoyed within the production unit. These economies are enjoyed by a single firm independently of the action of the other firms. For instance, one firm may enjoy the advantage of good management; another may have the advantage of more up-to-date machinery. There are different types of internal economies. They are

1. Technical Economies: As the size of the firm is large, more capital is available and the firm can introduce up to date technologies. It is also possible to conduct research and development which will help to increase the quality of the product.

2. Financial Economies: Small firms have to borrow capital whereas large firms can buy capital. It is possible for big firms to float shares in the market and amass capital.

3. Labour Economies: Large Scale production paves the way for division of labour and specialisation. This will increase the quality and ability of the labour. The productivity of the firm increases.

4. Marketing Economies: In the case of big firms, the quantity bought is larger. This gives the producer a better bargaining power.

5. Diversification Economies: A large firm can have many products. Even if one product fails in the market, the loss incurred in that product can be managed by the profit earned from the other products.

6. Purchase Economies. A firm ordering bulk purchases get raw materials at the lowest possible cost.

b. External economies of scale

When many firms expand in a particular area, the industry grows and all of them enjoy a number of advantages which are known as external economies of scale. This is not the advantage enjoyed by a single firm but by all the firms in the industry due to structural growth.

They are:

a) Increased transport facilities.

b) Banking facilities.

c) Development of townships.

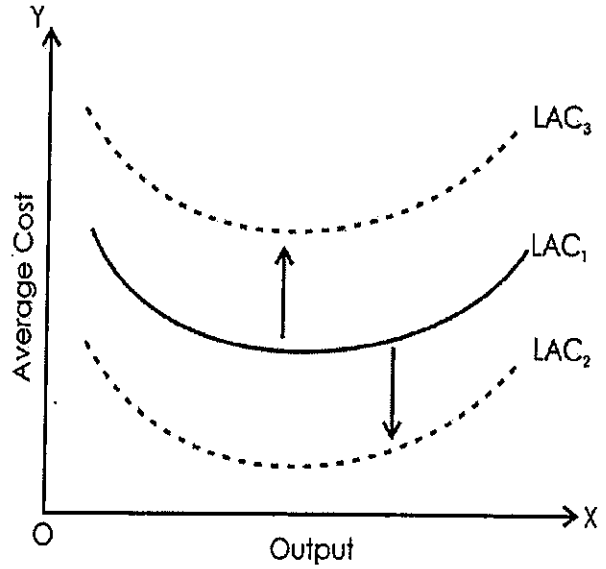
d) Information and communication development.

All these facilities are available to all firms in an industrial region and result in all round development which finally benefits each one of the firms.

Factors Causing Economies of Scale:

There are various factors influencing the economies of scale of an organization.

1. Labour specialisation. If the labour force of a firm is specialized in a specific skill then the organization can achieve economies of scale due to higher labour productivity.
2. Selling different types of products in a large number of markets. A firm having a variety of products will be able to spread their risk and reduce losses.
3. Economies of scale in purchase. When the organization purchases raw material in bulk its cost is reduced. A uniform and better quality can also be ensured. Transportation cost would also be lower.
4. Better repair and maintenance facilities in the area.
5. Research and development facilities in the region.
6. The plant location plays a major role in cutting down the cost of materials, transport and other expenses.
5. Use of Information Technology.
6. Organizations can increase the economies of scale by minimizing waste and can be environmental responsible by promoting recycling.



As a result of external economies, the LAC curve of the firms shifts downwards from LAC_1 to LAC_2.

2.6 Diseconomies of Scale

Diseconomies of scale refer to the disadvantages arising to a firm or a group of firms due to large scale production.

a. Internal diseconomies of Scale

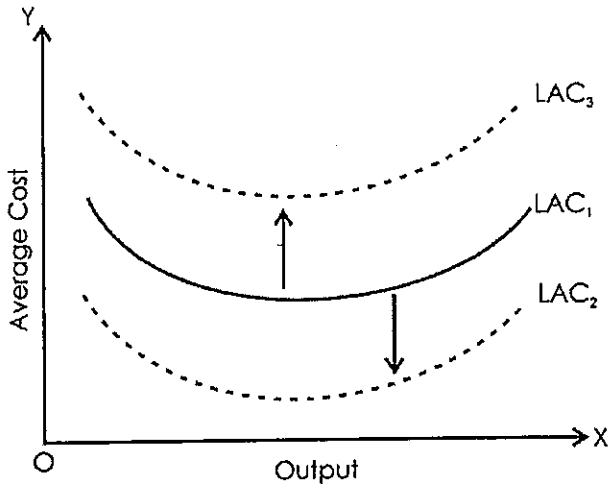
If a firm continues to grow and expand beyond the optimum capacity, the economies of scale disappear and diseconomies will start operating. For instance, if the size of a firm increases, after a point the difficulty of management arises to that particular firm which will increase the average cost of production of that firm. This is known as internal diseconomies of scale.

b. External diseconomies of scale

Beyond a certain stage, too much concentration and localisation of industries will create diseconomies in production which will be common for all firms in a locality. For instance, the expansion of an industry in a particular area leads to high rents and high costs. Pollution costs arising on account of concentration of industries is another example. These are the external diseconomies as this negatively affects all the firms in the industry located in that particular region.

Factors Causing Diseconomies of Scale:

1. Continuous labour problem and dissatisfaction can lead to diseconomies of scale.
2. Poor performance of the management team.
3. Lack of coordination between the various departments in the organisation.
4. Difficulties in fund raising reduce the scale of operation.
5. Delay in decision making due to managerial inability.
6. Scarcity of resources
7. Growing risk factors can cause diseconomies of scale in an organization.



As a result of external diseconomies, the LAC curve of the firms shifts upwards from LAC_1 to LAC_3.

Isoquants, Isocost line and Producer's Equilibrium

The equilibrium of a firm can be studied with the help of isoquant and isocost lines.

Isoquants

The isoquant curve represents different combinations of two factors of production that yield the same level of output.

Considering two factors of production, labour and capital, the following table shows various combinations of capital and labour that help a firm to produce 1000 units of a product.

Combination	Capital(K)	Labour(L)	Output
A	1	12	2000
B	2	8	2000
C	3	5	2000
D	4	3	2000
E	5	2	2000

From the above table, it is clear that all combinations with different quantities of labour and capital result in the same level of production of 2000 units.

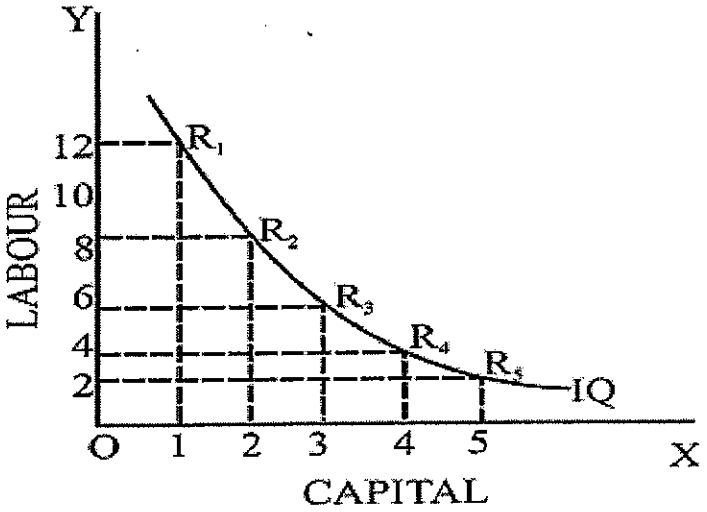


FIGURE 6.3

The two axes measure the quantities of labour and capital and the curve IQ shows the different combinations that produce 2000 units of output. Each of the points R_1, R_2, R_3, R_4 and R_5 on the curve shows a labour-capital combination that can produce 2000 units of output. Since the curve represents the same level of output it is also known as an equal product curve.

Characteristics of an isoquant

1. The isoquant is downward sloping from left to right i.e. it is negatively sloped.
2. Isoquants are always convex to the origin.
3. A higher isoquant represents a higher output.
4. Isoquants never intersect.

Marginal rate of technical substitution

Marginal rate of technical substitution of capital for labour may be defined as the amount of labour which can be replaced by one unit of capital, the level of output remaining the same.

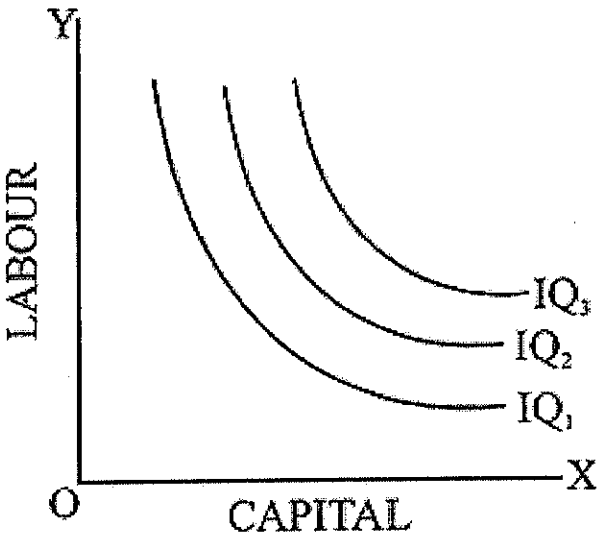
Slope of isoquant = $MRTS_{KL} = \frac{\Delta L}{\Delta K}$

Combination	Capital(K)	Labour(L)	MRTS KL
A	1	12	
B	2	8	4
C	3	5	3
D	4	3	2
E	5	2	1

An isoquant is convex to the origin because of the diminishing marginal rate of technical substitution. The slope of the isoquant represents marginal rate of technical substitution.

Isoquant map

A set of isoquants which represents different levels of output is called isoquant map. In the isoquant map, the isoquants on the right side represent higher levels of output and those on the left represent lower level of output.

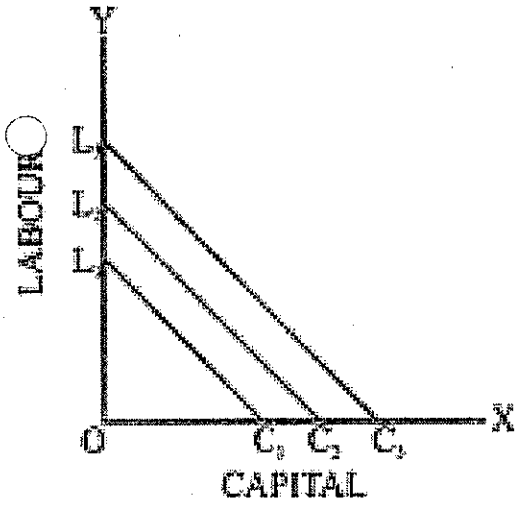


Isocost Line

An isocost line is defined as locus of points representing various combinations of two factors, which the firm can buy with a given outlay. Higher isocost lines represent higher outlays (total cost) and lower isocost lines represent lower outlays. It plays an important role in determining the combination of factors that the firm will choose for production.

The isocost line depends on two things:

(1) Prices of the factors of production and
(2) The total outlay.

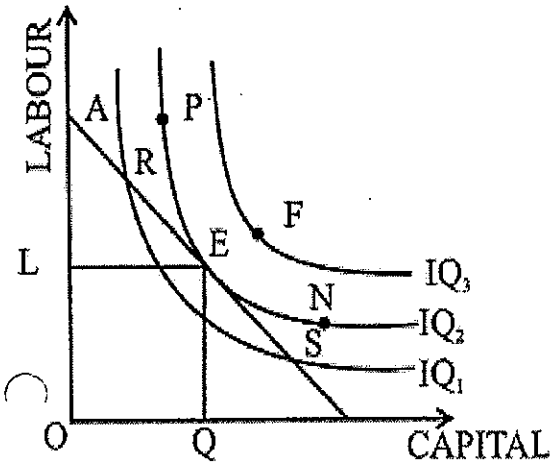


The slope of the isocost line is equal to the ratio of the prices of two factors. Thus the slope of the isocost line is given as

$$Slope\ of\ isocost\ line = \frac{Price\ of\ Capital}{Price\ of\ Labour}$$

Producer's Equilibrium (Least cost factor combination)

By superimposing the isoquant curve on the isocost line, the equilibrium of the producer can be determined. A rational producer always tries to achieve maximum output by combining the factors in an optimal way. The firm will try to be on the highest possible isoquant. However, it is limited by its budget. It will be on the highest isocost line that its expenditure will allow.



In the figure E is the point of equilibrium, where isoquant IQ_2 is tangential to isocost line. Given the isocost line and the isoquant-map, a producer will choose that level of output, where a given isocost line is tangential to the highest possible isoquant. At this point, the slopes of the isoquant and isocost line are equal. Thus, at the equilibrium point the marginal rate of technical substitution is equal to the price ratio of factors. Hence, the condition for producer's equilibrium is

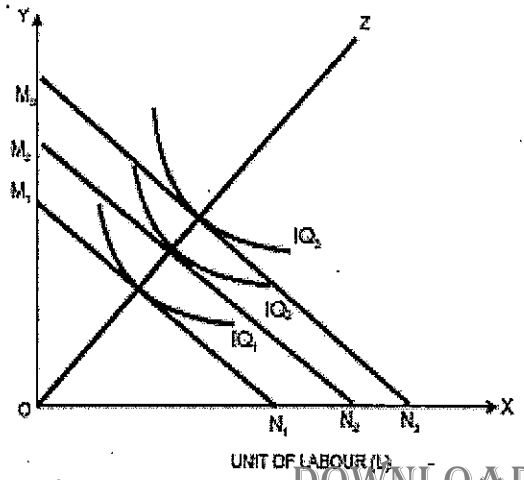
$$MRTS_{KL} = \frac{P_K}{P_L}$$

The combination E where the producer combines OL labour and OQ capital is called the least cost combination and he maximises his profits at this point.

Expansion Path

Expansion path is defined as the line formed by joining the tangency points between various isocost lines and the corresponding highest attainable isoquants. It is the locus of equilibrium points of the isoquant with the lowest possible isocost line.

A line can be drawn connecting all the points where the different isocost lines are tangent to the different isoquant curves. This is represented by the line OZ and is the expansion path of the firm. This line is also known as the scale line because it shows the way in which the firm will adjust the scale of its operations as it changes the scale of its output.



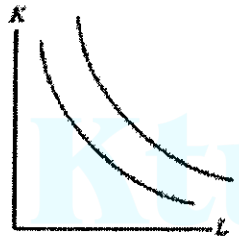
The isocost lines are tangent to isoquants at points E_1, E_2 and E_3. Joining the loci of these points, the expansion path OZ can be drawn. It indicates the manner in which the firm, tries to attain higher equilibrium points like E_1, E_2 and E_3 by increasing the factors of labour and capital and also its budget.

2.9 Technical Progress and its implications

Technical progress occurs when more output is produced with the same level of inputs. It is the result of improvements in technology and investment in research and development. It can be graphically represented by a downward shift of the isoquant since the same output is produced with a lesser quantity of inputs. There are three types of technical progress:

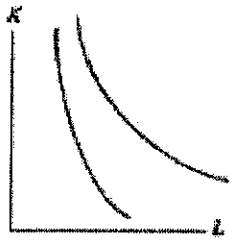
1. Neutral technical progress

It occurs when an equal reduction in both labour and capital causes a parallel downward shift of the isoquant. Here the change in the marginal product of labour and capital are the same.



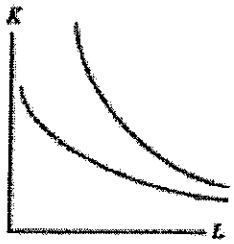
2. Labour augmenting technical progress

It occurs when as a result of a reduction in labour and capital the downward shifting isoquant becomes steeper. Here the marginal product of labour increases faster than the marginal product of capital.



3. Capital augmenting technical progress

It occurs when as a result of a reduction in labour and capital the downward shifting isoquant becomes flatter. Here the marginal product of capital increases faster than the marginal product of labour.



2.10 Cost Concepts

The term 'cost' means expenses incurred in the production of a commodity. It refers to the total amount of money spent on the production of a commodity. The determinants of cost of production are: the size of plant, the level of production, the nature of technology used, the quantity of inputs used, managerial and labour efficiency.

Kinds of Costs

Money Cost

Money cost is the total monetary expenses incurred by a firm in producing a commodity. The money paid for securing the factors of productions is money cost. Examples include cost of raw materials, salaries, expenditure on machinery, interest, advertisement, insurance premium, taxes etc.

Real Cost

Real cost expresses the pains and sacrifices involved in producing a commodity. It is a subjective concept. The efforts and sacrifice made by the owners for investment, by the workers in foregoing leisure etc. constitute real costs.

Opportunity Cost

The opportunity cost of any good is value of the next best alternative forgone. For example, a farmer who is producing wheat can produce potatoes with the same factors. Therefore, the opportunity cost of a quintal of wheat is the amount of output of potatoes given up. It is also known as alternative cost or transfer cost.

Explicit cost

Explicit costs are paid out costs. These are payments made by the entrepreneur to the suppliers of various productive factors. These are directly paid out for by the producer e.g. salaries, prices for the raw materials, rent, interest, taxes etc.

Implicit cost

Implicit costs are costs of self-owned and self-employed resources such as salary of the entrepreneur or return on his own investment. These costs are sometimes ignored in calculating the expenses of production.

Private cost

Private cost is the cost that the firm pays in order to produce a product. It includes both implicit costs and explicit costs.

External Cost

External cost or externalities arises when a business influences the well-being of an external person who neither pays nor receives any compensation for that effect. The exhaust gases released into the environment from an automobile is an example.

Social cost

The social cost is the sum of private cost and external cost. Due to the existence of external cost, the cost to society of producing a product is larger than the cost to the firm. The cost of producing oil includes the private cost of the firm plus the cost to society adversely affected by pollution.

2.11 Short run cost curves

Short run is a period of time over which certain factors of production cannot be changed. The factors whose quantity cannot be changed in the short run are fixed factors and the costs incurred on fixed factors are fixed costs. The factors whose quantity can be changed in the short run are variable factors and the costs incurred on variable factors are called variable costs.

Fixed cost (Sunk Cost)

Fixed costs are those which are independent of output, that is, they do not change with changes in output. These costs are a fixed amount, which must be incurred by a firm in the short run whether the output is small or large. Fixed cost is also called sunk cost since it is sunk into the business and cannot be easily retrieved.

e.g. Rent, interest on capital invested, salaries to the permanent staff, insurance premium and certain taxes.

Variable cost

Variable costs are those costs, which are incurred on the employment of variable factors of production. Variable costs change with the level of output. It rises when output expands and falls when output contracts. When output is nil, variable cost becomes zero.

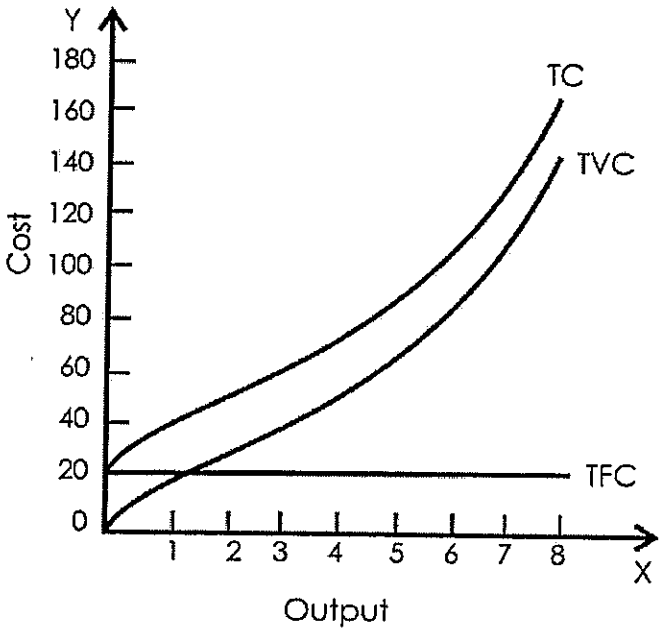
e.g. salary of employees on contract, prices of raw materials, electricity, fuel, transport costs etc.

Total cost

Total cost is the sum of total fixed cost and total variable cost.

$TC = TFC + TVC$

Total fixed cost is the same irrespective of the level of output. Therefore a change in total cost is influenced by the change in variable cost only. The relationship between total fixed cost, total variable cost and total cost is clear from the below figure.



Average Fixed Cost (AFC)

The average fixed cost is the fixed cost per unit of output. It is obtained by dividing the total fixed cost by the number of units of the commodity produced.

AFC = TFC / Q

Since total fixed cost is a constant quantity, average fixed cost will steadily fall as output increases.

Average Variable cost (AVC)

Average variable cost is the variable cost per unit of output. It is the total variable cost divided by the number of units of output produced.

AVC = TVC / Q

Average variable cost curve is 'U' Shaped. As the output increases, the AVC will fall up to the normal capacity output due to the operation of increasing returns. But beyond the normal capacity output, the AVC will rise due to the operation of diminishing returns.

Average Cost (AC)

Average cost is the total cost divided by the number of units of output produced.

AC = TC / Q

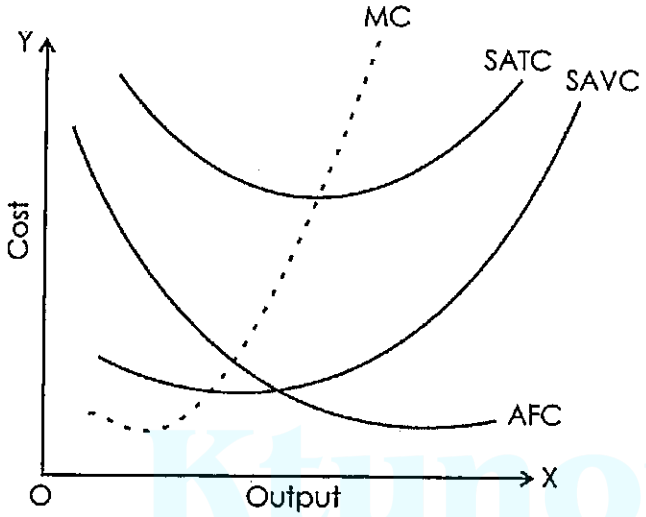
Average cost is also given by,

AC = AFC+AVC

The average cost is also known as the unit cost since it is the cost per unit of output produced.

Units of Output	TFC	TVC	TC	AFC	AVC	AC	MC
0	30	0	30	-	-	-	-
1	30	10	40	30	10	40	10
2	30	18	48	15	9	24	8
3	30	24	54	10	8	18	6
4	30	32	62	7.5	8	15.5	8
5	30	50	80	6	10	16	18
6	30	72	102	5	12	17	22

Diagram



Reasons for the U shape of the AC curve

The behaviour of the AC curve depends on the behaviour of the average variable cost and average fixed cost curves. The AC curve is U shaped due to:

(a) In the beginning both AFC and AVC curves fall. The AC curve therefore falls sharply in the beginning.

(b) When the AVC curve begins to rise, the AFC curve is falling steeply and the AC curve continues to fall. This is because during this stage the fall in the AFC curve is more than the rise in the AVC curve.

(c) But as output increases further, there is a sharp rise in AVC which more than offsets the fall in AFC. Hence AC begins to rise after a point.

Thus, the AC curve declines at first, reaches its minimum and then rises taking on a U-shape.

Marginal Cost

Marginal cost is defined as the addition made to the total cost by the production of one additional unit of output.

For example, when a firm produces 100 units of output, the marginal cost would be equal to the total cost of producing 100 units minus the total cost of producing 99 units.

$MCn = TCn - TC_{n-1}$

The marginal cost curve is U shaped. The shape of the cost curve is determined by the law of variable proportions. If increasing returns are in operation, the marginal cost curve will be declining, as the cost will be decreasing with the increase in output. When the diminishing

returns (diseconomies of scale) are in operation, the MC curve will be increasing as it is the situation of increasing cost.

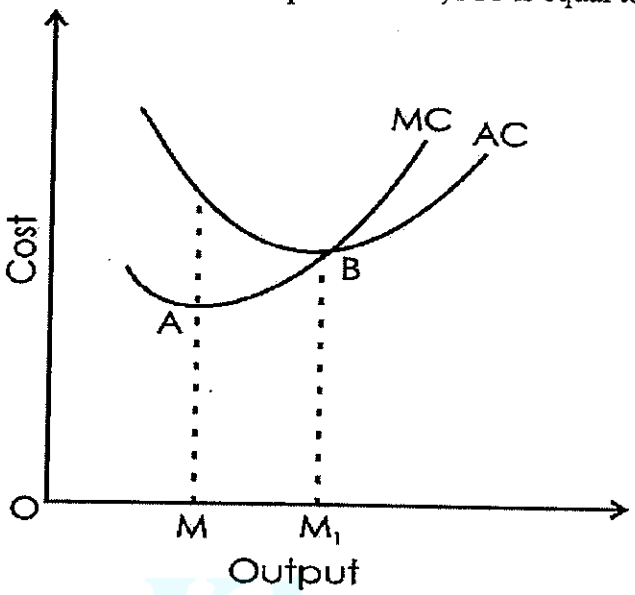
Relationship between short-run average and marginal cost curves

The relationship can be given as follows:

a. When marginal cost is less than average cost, average cost is falling

b. When marginal cost is greater than the average cost, average cost is rising

c. The marginal cost curve must cut the average cost curve at its minimum point from below. Thus at the minimum point of AC, MC is equal to AC.

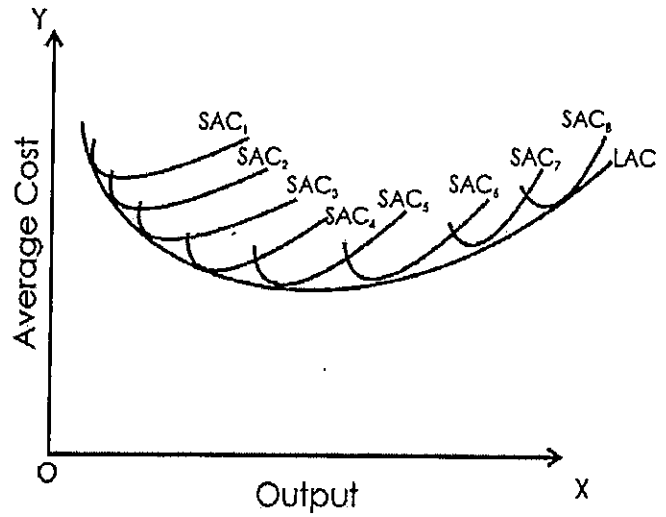


2.12 Long run cost curves

Long run Average Cost Curve (LAC)

In the long-run all factors are variable. Therefore, the firm can change the size of the plant to meet the changes in demand. A long-run average cost curve depicts the relationship between output and the long-run cost of production. The long-run cost of production is the least possible cost of production of any given level of output, when all inputs become variable, including the size of the plant.

The long run average cost curve is called *planning curve* of a firm as it helps in choosing a plant on the decided level of output. The long run average cost curve is also called *envelope curve* as it supports or envelops a group of short-run cost curves. The long run average cost curve initially falls with increase in output and after a certain point it rises making a boat shape.



2.13 Revenue

The amount of money, which the firm receives from the sale of its output in the market, is known as its revenue.

Total Revenue

Total Revenue refers to the total amount of money that a firm receives from the sale of its products.

Total Revenue = P x Q, where P is price and Q is quantity sold

Average Revenue

Average revenue is the revenue per unit of the commodity sold. It is calculated by dividing the total revenue by the number of units sold.

AR = TR / Q

Thus average revenue means price of the product.

Marginal Revenue

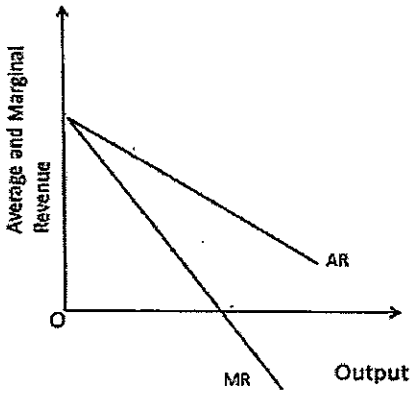
Marginal Revenue is the addition made to the total revenue by selling one more unit of a commodity.

For example, if 5 units of a product are sold at the price of Rs 20 and 6 units are sold at Rs19, the marginal revenue will be Rs. 4.

$MR_n = TR_n - TR_{n-1}$

Relationship between AR and MR curves

Units Sold	AR	TR	MR
1	10	10	10
2	9	18	8
3	8	24	6
4	7	28	4
5	6	30	2
6	5	30	0



Both AR and MR decline as a firm increases its output. This is because a firm can sell large quantities only at lower prices. In that case, the average revenue (price) of the product falls. When AR falls MR will also fall. But fall in MR will be more than the fall in the AR. Hence the marginal revenue curve will always lie below the average revenue.

If the average revenue (price) remains constant, the marginal revenue will also remain constant and will coincide with the average revenue.

The slope of the MR is twice that of the AR.

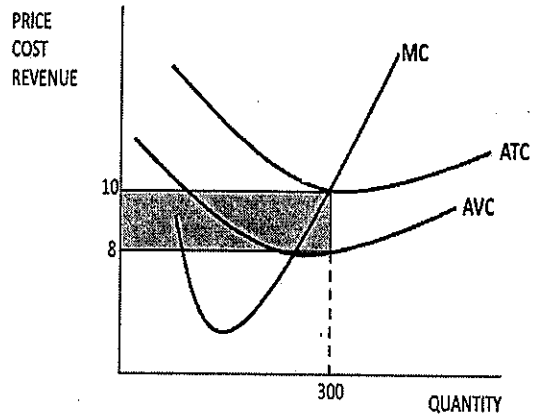
2.14 Shutdown point

The shutdown point is the minimum market price at which a company would prefer to close down its operations rather than manufacture anything. At this price, the company earns just enough revenue to cover its total variable costs.

The shutdown point is that at which P = AVC

It can also be stated as the point at which the firm recovers all of its variable costs.
ie. TR = TVC

This is because, in the short run, all fixed costs have already been incurred. By shutting down, a firm avoids all variable costs. However, the firm must still pay fixed costs. Since these must be paid regardless of whether a firm operates or nor, the loss per unit would be greater if the firm were to shut down.



The shutdown price is the minimum price a business needs to justify remaining in the market in the short run. In the figure, firm is at its shut down point when the price of its product becomes Rs.8. The shaded area represents the fixed cost of the firm. At this price, the firm is not covering any of its fixed cost. At any price between Rs.8 and Rs.10, it will be able to pay off some of its fixed costs, so it makes sense to keep operating.

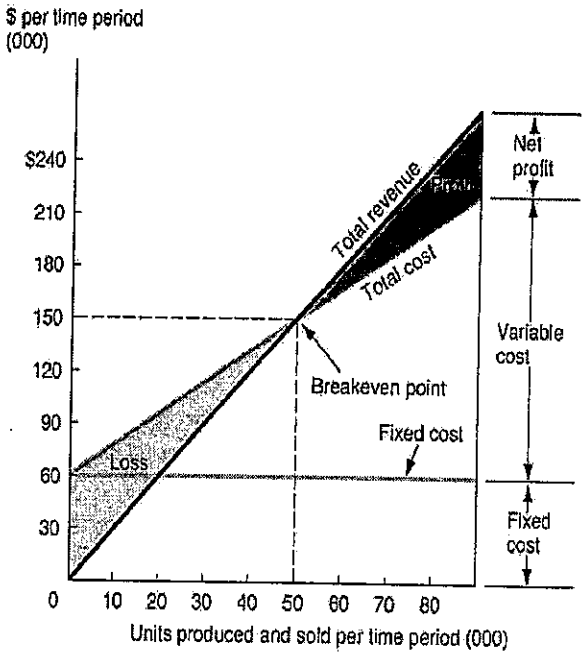
2.15 Break-even point

Breakeven analysis is a study of cost, revenues and sales of a firm to find out the level of output and sales volume at which the firm's costs and revenues will be equal. There is no profit and no loss. The total revenue is equal to the total cost of production. It means the revenues are sufficient to cover all costs of production.

At the breakeven point, TR = TC

Various managerial decisions of firms are taken by the managers based on the break-even point.

Units sold	FC	VC	TC	TR
0	60	0	60	0
10	60	15	75	20
20	60	30	90	60
30	60	60	120	90
40	60	70	135	120
50	**60**	**90**	**150**	**150**
60	60	105	165	180
70	60	120	180	210



The above graph shows the break- even point of an organization. When the firm produces 50 units, it is able to equalise TR and TC and it breaks even. When the firm

produces less than 50 units the revenue earned is less than the cost of production and in the initial period the firm incurs loss. When it is selling more than 50 units the revenue increases more than the cost of production and provides profit to the firm.

Importance of Break-Even Analysis:

1. Product planning: It helps the firm in planning the addition of new products in their product line.
2. Activity planning: It helps the firm to decide upon the expansion of production capacity.
3. Targeted sales decision: By estimating the targeted sales quantity with the help of breakeven analysis, the firm is able to decide the purchase of raw materials.
4. Price and cost decision: Decision regarding fixing the price so as to cover their cost of production.
5. Safety margin decision: It helps to understand the extent to which the firm can withstand a fall in its sales.
6. Profit decision: The selling price can be fixed based on its expected revenue or profit.
7. Promotional decision: The firm can decide how much money could be spent on sales promotion and advertisement.

At the breakeven point the following formulas hold:-

I. $At\ breakeven\ point, PQ = AVC \times Q + FC$

$$= Q(P - AVC) = FC$$

$$Breakeven\ quantity, Q = \frac{FC}{P - AVC}$$

II. $Sales = Cost + Profit$

$S = F + V + P$

$S - V = F + P$

C = F + P where C is contribution and S – V = C

III. Breakeven quantity $= \frac{F}{C}$

$$= \frac{F}{S-V} \quad \text{or} \quad \frac{F}{F+P}$$

Breakeven sales volume = Breakeven quantity x price

IV. P/V ratio $= \frac{Contribution}{Sales} = \frac{C}{S}$

$$= \frac{S-V}{S} \text{ or } \frac{F+P}{S}$$

V. Breakeven sales $= \dfrac{F}{P/V\ ratio} = \dfrac{FS}{S-V}$

VI. Value of sales to earn a desired profit $= \dfrac{F+dP}{P/V\ ratio} = \dfrac{(F+dP)S}{C}$

VII. Margin of Safety $= \dfrac{Profit}{P/V\ ratio}$

= Actual Sales – Breakeven Sales

Problems:-

1. Let the production function of a firm be $Q = 5\ L^{1/2}\ K^{1/2}$. Find out the maximum possible output that the firm can produce with 100 units of L and 100 units of K. Also find out the average and marginal product of labour from the function.

2. Suppose the production function is $Y = 2K^{1/4}L^{3/4}$ and K = L = 1. How much output is produced? If the company reduced L by 10%, how much would K need to be increased to produce the same output?

3. A firm sells its product at Rs.200 per unit. To produce a unit, it needs raw materials for Rs. 80, labour for Rs.40 and incurs other variable expenses for Rs. 20.The firms fixed expenses are Rs.12, 00,000. Find
(a) The breakeven quantity of the firm.
(b) If the actual production quantity is 25000, what will be the profit?

4. A company has total sales of Rs. 10000 in a year. Its variable costs are Rs. 6000 while its fixed costs are Rs.3000 for that year. Find (a) P/V ratio (b) Breakeven point (c) Margin of safety at this level (d) If it sells each unit at Rs. 10, how many should it sell at the breakeven point? (e) Find out the sales required to earn a profit of Rs. 1500.

5. The following values of a firm are available.

Output (units)	500	1000	1500
FC (Rs.)	1000	1000	1000
VC (Rs.)	500	1000	1500
TC (Rs.)	1500	2000	2500
TR (Rs.)	1000	2000	3000

Draw a breakeven chart of the firm and mark the breakeven quantity and breakeven sales.

6. Complete the following short run cost schedule.

Output (units)	TC	TFC	TVC	MC
0	100	--	--	--
1	--	--	50	--
2	--	--	--	40

Module 3 (Market Structure)

Perfect and imperfect competition – monopoly, regulation of monopoly, monopolistic completion (features and equilibrium of a firm) – oligopoly – Kinked demand curve – Collusive oligopoly (meaning) – Non-price competition – Product pricing – Cost plus pricing – Target return pricing – Penetration pricing – Predatory pricing – Going rate pricing – Price skimming

Market Structures

A market refers to a system through which the buyers and sellers of a commodity interact with each other and participate in sale and purchase. It is an institutional relationship between buyers and sellers. It is an arrangement which links buyers and sellers. The four types of market structures are:

1. Perfect Competition
2. Monopoly
3. Monopolistic Competition
4. Oligopoly

3.1 Perfect Competition

Perfect competition is a market situation where there is an infinite number of buyers and sellers and no single firm is big enough to have any appreciable influence over market price.

Features

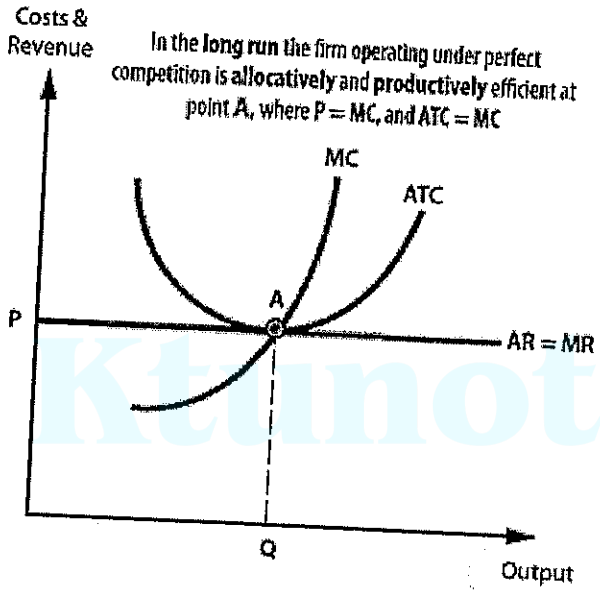
1. Large number of buyers and sellers. Neither a single buyer nor a single seller can influence the price.
2. Existence of homogeneous Products. The products produced by all the firms in the perfectly competitive market must be homogeneous in all respects. The products of different firms are perfect substitutes.
3. The firm is a price taker. The firm takes the price fixed by the market. There will be uniform price in the market.
4. Free entry and Free exit. There must be complete freedom for the entry of new firms or the exit of the existing firms from the industry. When the existing firms are earning super-normal profits, new firms enter into the market. When there is loss in the industry, some firms leave the industry.
5. Perfect knowledge about market conditions. Both buyers and sellers are fully aware of the current price in the market. Therefore the buyer will not offer high price and the sellers will not accept a price less than the one prevailing in the market.
6. Perfect mobility of factors of production. The factors of productions should be free to move from one industry to another.
7. Absence of transport cost. If transport cost is incurred, the firms nearer to the market will charge a low price than the firms far away. Hence it is assumed that there is no transport cost.
8. Absence of Government regulations. The price in the perfectly competitive market is free to change in response to changes in demand and supply conditions.

Determination of equilibrium price and output under perfect competition

The demand curve under perfect competition is perfectly elastic and is parallel to X-axis. It is also the average revenue curve of the firm. There is a uniform price in the market and all the units of the output are sold at the same price. Since the Average Revenue is constant, Marginal Revenue is also constant and coincides with Average Revenue. The perfect competitive firm is a price-taker, and has to adjust its level of output to maximise its profit.

The firm is in equilibrium at point A where

1. MC = MR and
2. MC curve cuts MR curve from below.



In the figure, the firm is in equilibrium at point A where MC=MR=AC=AR. The equilibrium output is OQ. The equilibrium price is OP. The firm is earning just normal profits. If the price rises above OP, the firm will earn abnormal profit, which will attract new firms into the industry. If the price is less than OP, there will be loss and the tendency will be to exit. Competitive firms are in equilibrium at the minimum point of average total cost curve.

Advantages of perfect competition

1. There is consumer sovereignty in a perfect competitive market. The consumer is rational and he has perfect knowledge about the market conditions. He will not purchase the products at a higher price.
2. In the perfectly competitive market, the price is equal to the minimum average cost. It is beneficial to the consumer.
3. The perfectly competitive firms are price-takers and the products are homogeneous. It is not necessary for the producers to incur expenditure on advertisement to promote sales. This reduces the wastage of resources.

4. The perfectly competitive firm is functioning at the optimum level. This means that maximum economic efficiency in production is achieved.

3.2 Monopoly

Monopoly is a market structure characterised by the existence of a single seller, there are no close substitutes for the commodity produced and there are barriers to entry.

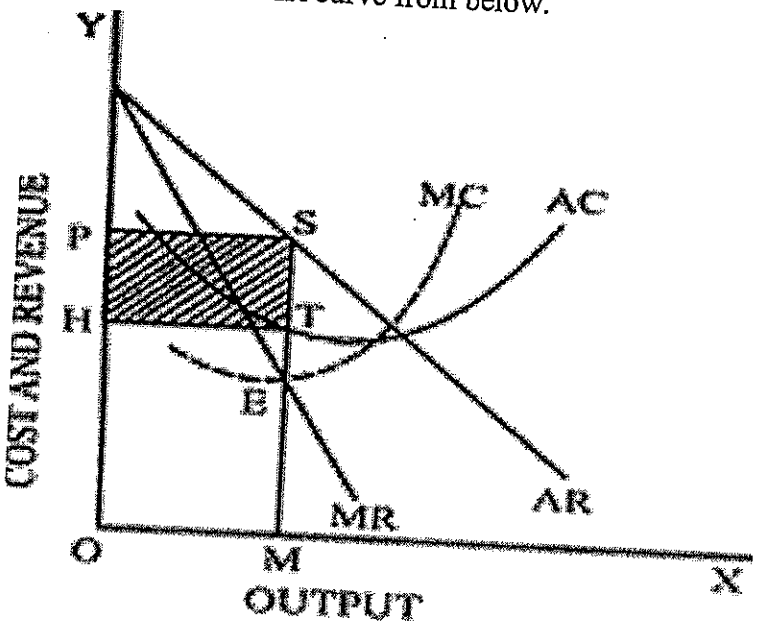
Features

1. A single Seller. Since the market is dominated by one seller, he can control either price or quantity of his product. But he cannot control demand for the product, as there are many buyers.
2. No close Substitutes. There are no close substitutes for the product. The buyers have no alternatives. Either they have to buy the product or go without it.
3. The firm is a price maker. The monopolist can fix any price that he wants since he is the sole producer of the product.
4. Price discrimination. The monopolist has control over the supply so as to increase the price. Sometimes he may adopt price discrimination. He may fix different prices for different sets of consumers.
5. No free entry into the industry. There are strong barriers to the entry of new firms. There are legal, technological, economic or natural barriers which may block the entry of new producers.
6. No difference between firm and industry. Under monopoly, there is no difference between a firm and an industry. As there is only one firm, that single firm constitutes the whole industry.

Determination of equilibrium price and output under monopoly

A monopoly firm faces a downward sloping demand curve. It is also the average revenue curve. The downward sloping demand curve implies that larger output can be sold only by reducing the price. Its marginal revenue curve will be below the average revenue curve. The monopolist will be in equilibrium when

1. MC = MR and
2. MC curve cuts MR curve from below.



In the figure, AR is the average revenue Curve and MR is the marginal revenue curve. AR curve is falling and MR curve lies below the AR. The firm is in equilibrium at E where MC = MR. The firm produces OM units of output and fixes price at OP. The firm earns supernormal profits equal to HTSP. At this output the firm is earning maximum profit. The monopoly price is higher than the marginal revenue and marginal cost.

Advantages of monopoly

1. Monopoly firms have large-scale production possibilities and also can enjoy both internal and external economies. This will result in the reduction of costs of production.
2. They have vast financial resources which could be used for research and development. This will enable the firms to innovate quickly.
3. There are a number of weak firms in an industry. These firms can combine together in the form of a monopoly to meet competition.

Disadvantages

1. A monopolist always charges a high price, which is higher than the competitive price. Thus a monopolist exploits the consumers.
2. A monopolist is interested in getting maximum profit. He may restrict the output and raise prices. Thus, he creates artificial scarcity for his product.
3. A monopolist often charges different prices for the same product from different consumers. He extracts maximum price according to the ability to pay of different consumers.
4. A monopolist uses large-scale production and huge resources to promote his own selfish interest. He may adopt wrong practices to establish absolute monopoly power.
5. In a country dominated by monopolies, wealth is concentrated in the hands of a few. It will lead to inequality of incomes. This is against the principle of the socialistic pattern of society.

Reasons for the existence of monopoly

1. Natural: A monopoly may arise on account of some natural causes. Some minerals are available only in certain regions. For example, South Africa has the monopoly of diamonds, Canada in nickel, Middle East in oil etc.
2. Technical: Monopoly power may be enjoyed due to technical reasons. A firm may have control over raw materials, technical knowledge, special know-how, scientific secrets and formula that enable a monopolist to produce a commodity.
3. Legal: Monopoly power is achieved through patent rights, copyright and trade marks by the producers. This is called legal monopoly.
4. Large amount of capital: The manufacture of some goods requires a large amount of capital or lumpiness of capital. All firms cannot enter the field because they cannot afford to invest such a large amount of capital. Examples are the iron and steel industry, railways, etc.
5. State Monopoly: Government will have the sole right of producing and selling some goods. They are State monopolies. For example, in India public utilities like electricity and railways enjoy monopoly power.

Regulation of Monopoly (Methods of Controlling Monopoly)

1. Legislative Method. Government can control monopolies by legal actions. Anti-monopoly legislation has been enacted to check the growth of monopoly. In India, the Monopolies and Restrictive Trade Practices Act was passed in 1969. The objective of this Act is to prevent the unwanted growth of private monopolies and concentration of economic power in the hands of a small number of individuals and families.
2. Controlling Price and Output. This method can be applied in the case of natural monopolies. Government would fix either price or output or both.
3. Taxation. Taxation is another method by which the monopoly power can be restricted. Government can impose a tax on a monopoly firm. Consequently, its total profit will fall.
4. Nationalisation. Nationalising big companies is another solution. Government may take over monopoly companies which are exploiting consumers.
5. Consumer's Association. The growth of monopoly power can also be controlled by encouraging the formation of consumers associations to improve the bargaining power of consumers.

Price Discrimination under monopoly

Price discrimination means the practice of selling the same commodity at different prices to different buyers. If the monopolist charges different prices from different consumers for the same commodity, then he is adopting price discrimination.

Conditions

Price discrimination is possible only if the following two conditions are fulfilled.

1. There should be no possibility of a resale from the low priced market to the high priced market. The monopolist should be able to keep the two markets or different markets separate so that the commodity will not be moving from one market to the other market. If it is possible to buy the product in the cheaper market of the monopolist and sell it in the dearer market, there can never be two prices for the commodity.
2. The demand must not be transferable from the high priced market to the low priced market. It should not be possible for buyers in the dearer market to sneak into the cheaper market to take advantage of the low price.

Types of price discrimination

There are three degrees of price discrimination.

1. First degree price discrimination

First degree price discrimination occurs when a monopolist charges a different price for each unit of the commodity sold. He charges the maximum that each buyer is willing to pay leaving no consumer surplus. This involves maximum exploitation of the workers.

2. Second degree price discrimination

Here the monopolist divides buyers into groups and from each a different price is charged.

3. Third degree price discrimination

Here the monopolist divides the entire market into two sub markets and charges a different price in each sub market.

3.3 Monopolistic Competition

Monopolistic competition refers to the market situation in which a large number of sellers produce goods which are close substitutes of one another. It combines the features of both monopoly and competition. The products are similar but not identical. The particular brand of product will have a group of loyal consumers. In this respect, each firm will have some monopoly and at the same time the firm has to compete in the market with the other firms as they produce a fair substitute. The essential features of monopolistic competition are product differentiation and the existence of many sellers.

Features

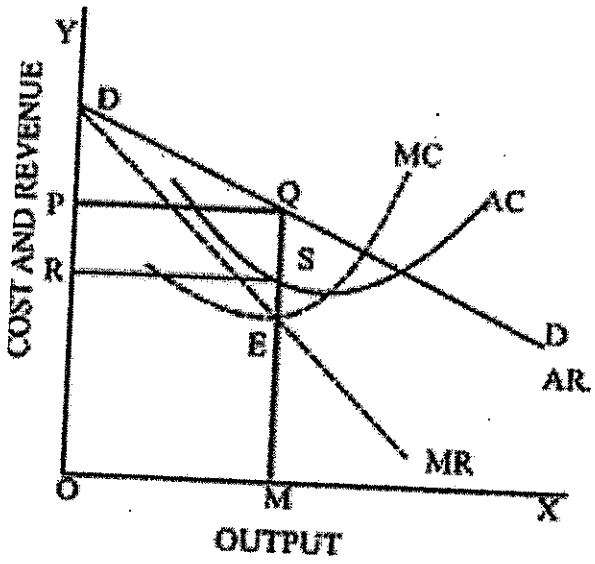
1. Existence of Large Number of firms. Under monopolistic competition, the number of firms producing a commodity will be very large. Due to their large number the contribution of each firm towards the total demand of the product is small. Each firm will act independently on the basis of product differentiation and each firm determines its price-output policies.
2. Product differentiation. Product differentiation is the essence of monopolistic competition. Product differentiation is the process of altering goods that serve the same purpose so that they differ in minor ways. Product differentiation is attempted through (a) physical appearance (b) difference in quality; (c) packaging and (d) purchase benefits (e) advertisement (f) home delivery (g) free services etc.
3. Selling Costs. As a result of product differentiation, the producer has to incur expenses like advertisement to popularise his brand. This expenditure involved in selling the product is called selling cost. Selling cost is defined as the cost incurred in order to alter the position or shape of the demand curve for a product.
4. Freedom of entry and exit of firms. There are no barriers as in the case of monopoly.
5. Monopolistic competition presupposes that customers have definite preferences for particular varieties of products. Hence pricing is not the problem but product differentiation is and competition is not on prices but on products.

Determination of Equilibrium price and output under monopolistic competition

The monopolistic competitive firm will also come to equilibrium when

1. MC = MR and
2. MC curve cuts MR curve from below.

Each firm will choose that price and output where it will be maximising its profit.



In the figure, the equilibrium point is E where MC = MR. The equilibrium output is OM and the price of the product is fixed at OP. The difference between average cost and average revenue is SQ. The output is OM. The abnormal profit for the firm is shown by the rectangle PQSR.

Demerits of Monopolistic competition

1. Unemployment of resources. Under monopolistic competition, the firms produce less than optimum output. As a result, the productive capacity is not used to the fullest extent. This will lead to unemployment of resources.
2. Excess capacity: Excess capacity is the difference between the optimum output that can be produced and the actual output produced by the firm. In the long run, a monopolistic firm produces an output which is less than the optimum output that is the output corresponding to the minimum average cost. This leads to excess capacity which is regarded as waste in monopolistic competition.
3. High selling costs. There is a lot of waste in competitive advertisements under monopolistic competition. The wasteful and competitive advertisements lead to high cost to consumers.
4. Existence of many brands. Introducing too many varieties of a good is another waste of monopolistic competition. The goods differ in size, shape, style and colour. A reasonable number of varieties would be desirable. Cost per unit can be reduced if only a few are produced.
5. Inefficient Firms. Under monopolistic competition, inefficient firms charge prices higher than their marginal cost. Such type of inefficient firms should be kept out of the industry. But, the buyers' preference for certain brands enables the inefficient firms to continue to exist. Efficient firms cannot drive out the inefficient firms because the former may not be able to attract the customers of the latter.

3.4 Oligopoly

Oligopoly is a market situation in which there are few large firms producing closely differentiated products. Each firm in the industry is supplying a significant share of the total industry output. It is also referred to as 'competition among the few'. The number of firms is so small that every seller is affected by the activities of the others.

Features

1. Interdependence. Since there are only a few firms, each firm closely watches the activities of the other firm. Any change in price, output, product, etc., by a firm will have a direct effect on the fortune of its rivals. So an oligopolistic firm must consider not only the market demand for its product, but also the possible moves of other firms in the industry.
2. Group Behaviour. Firms may realise the importance of mutual co-operation. They will have a tendency of collusion. At the same time, the desire of each firm to earn maximum profit may encourage competitive spirit. Thus, co-operative and collusive trend as well as competitive trend would prevail in an oligopolistic market.
3. Price Rigidity. Price is rigid or sticky at the prevailing level due to the fear of reaction from the rival firms. If an oligopolistic firm lowers its price, the price reduction will be followed by the rival firms and the firm will lose some of its profit. If the firm raises the price, the rival firms will not follow. This would result in losing customers. In both ways the firm would face difficulties. Hence the firm has no tendency to change its price.
4. Barriers to Entry. The existence of oligopoly in the long run requires the existence of barriers to the entry of the new firms. Several factors such as unlimited size of the market, requirement of huge initial investment etc. creates barriers to the entry of new firms.

Determination of equilibrium price and output under oligopoly

Indeterminate demand curve under oligopoly

The demand curve of a firm under oligopoly is indeterminate on account of (a) interdependence and (b) group behaviour. Hence it is difficult to know the exact position of the demand curve. The effect of a change in price by a firm depends on the reaction of its rivals. Sometimes a price cut by a firm may not cause others to change their own price. At other times it may invite immediate retaliation.

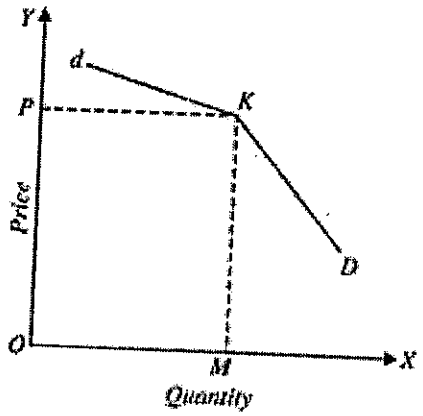
It is not possible to have a single generalised solution to pricing under oligopoly. The existence of a few large firms makes price determination under oligopoly difficult on account of their unpredictable nature. The actions and reactions of rivals make firms aim at maximisation of sales to ensure survival rather than aim at maximisation of profit.

There are three different approaches to pricing under oligopoly.

1. Kinked Demand Curve (Price Rigidity under Oligopoly)

The price under oligopoly market is fixed for a long period of time and does not vary as in the case of other market situations.

If a firm increases its price, others will not come forward with a price increase of their own and the firm may lose some customers to its rivals. If the firm cuts its price, others will immediately follow suit to protect their own sales and the original firm will not gain more sales. The kink is formed at the prevailing price because the segment of the demand curve above this price is highly elastic and below it, less elastic. Hence the price under oligopoly tends to be rigid or sticky.



2. Price Leadership

Under price leadership, one firm assumes the role of a price leader and fixes the price of the product for the entire industry. The other firms follow this leader and accept the price fixed by it and adjusts their output accordingly. The different types of price leadership are:

a. Price leadership by a dominant firm

A dominant firm is the largest firm in the market and produces the bulk of the product of the industry. Due to this position, it is able to dominate the entire market. It sets the price and the other firm simply accept it.

b. Barometric price leadership

Under this type an experienced and large firm assumes the role of the leader, but also protects the interests of all firms. It fixes a price that is suitable to all the firms in the industry.

c. Aggressive price leadership

In this case the big firm establishes its supremacy in the market by following aggressive price policies. This firm forces others to follow the price fixed by it. In case the others do not obey, the leader uses aggressive strategies to make them obey it.

3. Collusive Oligopoly

Collusive oligopoly refers to the market situation where oligopolistic firms come to an agreement and decide to collude. In order to avoid price wars and cut throat competition, firms have some form of agreement among them in the matter of fixing price and output. The agreement may be formal or tacit. In the case of a formal agreement, they may even make a written agreement which may also provide for penalties to those who violate it.

Since formal or open agreements are illegal in most countries, they are generally of a secretive nature. The two types of collusive oligopoly are:

1. Tacit collusion

Here firm enter into tacit or secret collusion and informally agree to charge the same price. They meet in secret and do not keep any record of their agreement regarding price or output.

2. Cartels

Here firms form a group under an agreement and decide the price of the product. They also agree upon the output that is to be produced. Cartels restrain competition among the member firms and hence their formation has been made illegal in most countries by passing Anti-Trust Laws against them. In spite of this cartels are still common and carry out their operations behind closed doors.

E.g. Organisation of Petroleum Exporting Countries (OPEC).

3.5 Non-price competition

Firms in oligopolistic industries rarely compete on the basis of price since they view price-cutting as a dangerous tactic because it can initiate a price war that may have disastrous consequences in the long run. Instead they concentrate on non-price strategies such as advertising and product differentiation. These are looked at as less risky ways of attracting customers from competitors.

1. Advertising. Firms spent huge amount of money on advertising in order to increase its market share. Through repeated advertisements firms get the customers to trust their brand. Brand recall also increases.
2. Building brand loyalty. Customers loyal to a brand do not look for products made by other manufactures.
3. Brand recognition. Through repeated advertisements and by developing a unique logo, companies are able to make customers recognise their firm.
4. Product bundling. Companies bundle various products together to make customers stay with the brand even while purchasing dissimilar products.
5. Customisation. Some firms give the option to customise their products to enable customers purchase a unique product which is not available to the mass market.
6. Direct mailing. Customers are emailed or direct messaged about new products or special deals.
7. Free delivery. Most of the online shopping sites promise free or next day delivery of their products.
8. Sponsoring of various sporting events.
9. Ethical Marketing. Some firms offer to give a certain percentage of their profits to charity to attract customers who wish to buy goods with a social conscience.
10. After sales service. Some companies have a strong service network and have made it their unique selling point. This is particularly true of the car and the consumer durable goods industry.

Disadvantages of non-price competition

1. High retail prices.
2. It does not offer long lasting benefits.

3. The strategy is expensive, hence it is beyond the budget of small firms.
4. Brand building takes time.
5. Trade mark battles among firms.

3.6 Product pricing

Firms adopt different pricing strategies for their products. The price of a product depends upon:

1. Demand and supply.
2. Production cost.
3. Degree of competition.
4. Pricing strategy of competing firms.
5. The purchasing power of the consumer.
6. Objective of the firm.
7. Market Structure.

The various pricing strategies adopted by firms are:

1. Cost plus pricing (Mark up pricing)

In this strategy, the basis for the determination of price of the product is the cost of production with some margin. Price is the sum of cost plus a profit margin. It involves adding a mark up to the cost of goods to arrive at a selling price.

Price = Average Cost + mark up

Advantages

1. This method is simple since the price of a product can be easily derived using this strategy.
2. Any contractor will willingly accept this method for a contractual agreement with a customer since this method assures a certain profit.
3. In the case of price increase, manufactures can point out the increase in production costs as the reason.

Disadvantages

1. It ignores the price charged by competitors.
2. Under this method the engineering department has no incentive to reduce costs.
3. It ignores replacement costs.

2. Target return pricing

In this method, the firm determines the price on the basis of a target rate of return on the investment. It takes into consideration what an investor would want to make from the capital invested in the project. The company works backwards from the targeted return to reach the current price.

Advantages

1. This method ensures higher profits.
2. The expected volume of sales play a part in this strategy.
3. It considers time value of money.

Disadvantages

1. The company must pick a return and a time period that is reasonable.
2. More possibility of miscalculations.
3. Sometimes companies pick an unrealistic return.

3. Penetration pricing

It is a pricing strategy that is used to quickly gain market share in a market already dominated by existing firms by setting an initial low price. This is generally used by new entrants in a market. Charging a lower price is one of the easiest ways to differentiate new entrants from existing market players. It works for products whose demand is elastic.

Advantages

1. This strategy enables a company to get its product quickly accepted by customers.
2. Competitors are caught off guard and get little time to react. It enables the company to utilize this opportunity to switch over as many customers as possible.
3. Customers that are able to find a bargain in a product are likely to return to the firm in future.

Disadvantages

1. Customers often expect permanently low prices.
2. If customers link the low prices to poor quality it will affect the brand image of the firm.
3. It may trigger a price war and the new entrant may get wiped out.

4. Predatory pricing

Predatory pricing is a strategy in which a dominant firm fixes a temporary price below the cost of production to drive out its competitors from the market. This is done on the expectation that the present losses can be recouped through higher profits in the long run. It is illegal as it violates competition laws and makes markets more vulnerable to a monopoly.

Advantages

1. Customers may benefit from low prices in the short period.
2. The price war triggered by predatory pricing may create a buyer's market.
3. Competition may provide a wider choice and new technologies to the customers.

Disadvantages

1. It is hard to succeed since driving out all rival firms is difficult.
2. It will result in huge loss of revenue at least in the short period.
3. It is illegal and can lead to court cases.

5. Going rate pricing

In this method, price is determined on the basis of the prevailing market price. The company sets the price of its product in line with the competitor's price. This type of pricing is followed in oligopolistic industries where they deal in slightly differentiated products with high cross elasticity. Companies selling steel, aluminium, paper, fertilizer, mineral water are examples.

Advantages

1. Uniform price in the market.
2. Firms follow the price leader.
3. No risk of price war

Disadvantages

1. Cost of production is ignored

2. It is difficult to match the production cost with the price that others are following.
3. Price is fixed by the dominant firm.

6. Price Skimming

It is a product pricing strategy by which a firm charges a high price at the time of introduction of a product and then lowers it over time. As the demand of the first customers is satisfied and competition enters the market, the firm lowers the price to attract the price sensitive customers. It is usually used for a new type of product to gather as much revenue as possible before competition enters the market. This strategy gets its name due to the method of skimming successive layers of customer segments as prices are lowered over time.

Advantages

1. It provides a higher return on investment.
2. It helps create and maintain brand image.
3. It helps firms to recover the cost of R&D.
4. Early adopters help test new products and provide word-of-mouth marketing campaigns.

Disadvantages

1. It will work only if there are a large number of customers willing to get hold of the product even at a high price.
2. The high price will quickly attract competing firms to launch similar products.
3. It works only in the short period.
4. It is suitable mainly for tech products and services.

7. Administered Pricing

Administered price is the price of a product fixed statutorily by the government. Governments fix the prices of certain essential commodities to promote social welfare and prevent exploitation. Here the forces of demand and supply do not play a role in attaining market equilibrium.

Advantages

1. It helps in controlling price of food to make it more affordable.
2. Farmers are assured of a minimum return on agricultural products.
3. It can be used to control rent and prevent exploitation of consumers.

Disadvantages

1. If a low administered price is fixed it may result in shortages.
2. It may result in a financial burden on the government since it will have to buy the surplus.
3. Sometimes it may lead to the emergence of black markets.

Module 4 (Macroeconomic concepts)

Circular flow of economic activities – Stock and flow – Final goods and intermediate goods - Gross Domestic Product - National Income – Three sectors of an economy - Methods of measuring national income – Inflation - causes and effects – Measures to control inflation Monetary and fiscal policies – Business financing - Bonds and shares - Money market and Capital market – Stock market – Demat account and Trading account - SENSEX and NIFTY.

4.1 Macro Economics

The word macro indicates the study about the whole and the word micro indicates the study at the micro level i.e. about the individuals. Macroeconomics is the study of aggregate economic behaviour of the economy as a whole. It studies the entire economic conditions prevalent in the country. The subject matter of Macroeconomics includes national income, employment, business cycles, exports, imports, inflation etc.

Apart from this it also includes aggregate demand and aggregate supply of goods. It also studies economic policies like fiscal policy and monetary policy of the government.

4.2 Circular Flow of economic activities in a Two Sector Economy

A two sector economy consists of only households and firms. The households own resources which are necessary inputs for the firms in the production process. These resources are referred to as factors of production.

There are four factors of production.

(a) Land: It includes all natural resources.

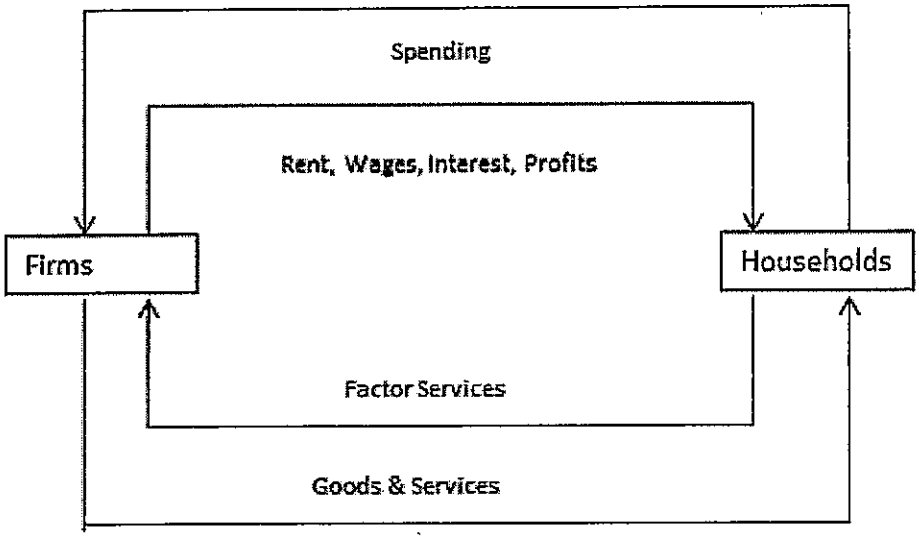
(b) Labour: It represents the work force of an economy.

(c) Capital: It refers to the produced means for further production and includes machines, money etc.

(d) Entrepreneurship: It refers to the individuals who organise production and take risks.

During the process of production, land receives rent, labour receives wages, capital gets interest and the entrepreneur receives profits.

The circular flow of income is represented by a clockwise and a counter clockwise flow. It is a cycle in which production creates income, income creates spending and spending in turn induces further production. The entire income of the economy comes back to the producers in the form of sales revenue.



Initially households supply the factors of production to the firms. Firms then make payments to the households for the services they have provided. Households use this money to purchase goods from firms.

The aggregate income earned by the factors of production must be equal to the aggregate spending of the economy.

Assumptions

1. Households do not save.
2. There is no government sector.
3. Foreign trade is absent.

4.3 Circular Flow of Income in a Multi Sector Economy

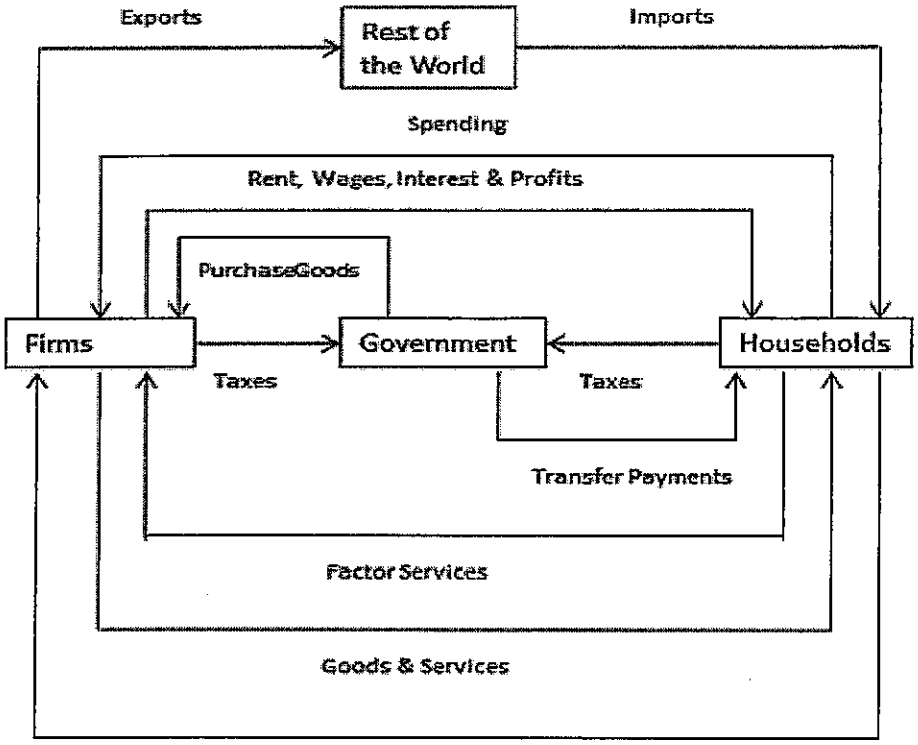
In a multi sector economy, there are four sectors which are engaged in the three economic activities of production, consumption and exchange of goods and services. The four sectors are

(a) Households: Households are the owners and suppliers of factors of production. In return they receive payments in the form of rent, wages, interest and profit. They use this income to purchase goods and services.

(b) Firms: Firms employ the factors of production to produce various goods and services. They make payments for factor services to households, pay taxes to the government and pay for imports to the foreign sector. They receive revenue from households, government and foreign sector from the sale of their goods and services. They also receive subsidies from the government.

(c) Government: The government purchases goods from firms and factors of production from households. It makes factor payments to households. It also purchases goods and services from firms. The government receives taxes and spends money on subsidies and transfer payments.

(d) Foreign Sector: The households, firms and the government import goods and services from abroad and make payments. On the other hand all these sectors export their product to various countries and in turn receive payments from abroad.



The economy works through the interaction of households, firms, government and foreign countries. These four agents take economic decisions to produce goods and services and exchange them for money.

4.4 Concept of Stock and Flow

Flows are defined over a period of time. A statement like a person earns 10000 rupees is meaningless unless the time period is mentioned. The person may be earning it daily, weekly, monthly or even annually which would then make a huge difference to his earning capacity. Money is a concept that makes sense only when a time period is mentioned. It is called as a flow because they occur in a period of time. A definite time period has to be mentioned to get a quantitative measure of such concepts. Since a lot of accounting is done annually in an economy, most of these variables are expressed annually.
E.g. money, income, output, profit etc.

Stocks are defined at a particular point of time. Capital goods or consumer durables once produced do not wear out or get consumed in a specific time period. In fact capital goods continue to serve through different cycles of production. The buildings or machines in a factory are there irrespective of the time period. There can be addition to the stock when a new machine is added. There can be a deduction from the stock when a machine is damaged and is not replaced.
E.g. buildings, machines, vehicles, computers, furniture etc.

However a *change in stock* over a specific period of time can be measured. The number of machines that were added this year is measurable. Such changes in stocks are thus flows, which can be measured over specific time periods. A particular machine can be part of the capital stock for many years (unless it wears out); but that machine can be part of the flow of new machines added to the capital stock only for a single year when it was initially installed.

To further understand the difference between stock variables and flow variables, take the following example. Suppose a tank is being filled with water coming from a tap. The amount of water which is flowing into the tank from the tap per minute is a flow. But how much water there is in the tank at a particular point of time is a stock concept.

4.5 Final goods and intermediate goods

Goods which are sold to consumers for their own use and not used as a means for further production are final goods. They do not need further processing since they are finished products. They are also called as consumer goods. They are classified into durable goods, non-durable goods and services.

E.g. cars, mobiles, shoes, refrigerators etc.

Goods which are used in the production of other goods are intermediate goods. It is a product used to produce a final good. Intermediate goods are sold between industries for resale or for the production of other goods. These goods need further processing since they are semi-finished products. They are used as inputs to become part of the finished product. They are not taken into consideration during the estimation of national income since their value is included final goods.

E.g. raw materials like steel, copper, rubber, coal etc.

4.6 National Income Concepts

The purpose of national income accounting is to obtain some measure of the performance of the entire economy.

Gross National Product

GNP is the total market value of all final goods and services produced in a year. It is the basic social accounting measure.

GNP = Consumption + Government spending + Domestic Investment + Net Foreign Investment

$GNP = C + I + G + X - M$

It only includes the market value of final goods and ignores transactions involving intermediate goods. These are the goods purchased for final use and not for resale or further processing. While calculating GNP, all non-productive transactions have to be excluded.

Gross Domestic Product

GDP is the total market value of all final goods and services produced within the domestic territory of a country in a year.

GDP = GNP – Net Factor Income From Abroad (NFIFA)

Net National Product

NNP = GNP - Depreciation

It is the market value of all final goods and services after allowing for depreciation.

Depreciation is the fall in the value of capital goods like machinery as a result of wear and tear. It is an annual allowance for wear and tear of a capital good. It is the cost of the good divided by number of years of its useful life.

NNP is also referred to as national income as market prices. NNP is a better than GNP since it makes allowances for the depreciation of machinery, equipment, buildings and the like.

Net Domestic Product

NDP = GDP - Depreciation

National Income

The entire NNP does not reach the people. The manufacturers have to pay indirect taxes to the government. Thus, this part of total income will not be available to the people. The government may also give subsidies on the production of certain goods like kerosene and ration rice. Hence, these goods are sold at lower prices since the government bears a part of the price in the form of a subsidy for these products. Therefore, to arrive at the correct estimate of National it is necessary to subtract indirect taxes and add subsidies to NNP.

This is the actual national income of a country. It is also referred to as National Income at factor cost.

NI (NI at factor cost) = NNP - indirect taxes + subsidies

NI at market Prices = NNP + indirect taxes – subsidies

Personal Income

It is the sum total of income actually received by all individuals in a country during a given year.

PI = NI - social security contributions - corporate income taxes - undistributed Corporate profits + transfer payments

Transfer payments refer to unemployment allowances, old age pension etc.

Disposable Personal Income

DPI = PI - Direct taxes

Per Capita Income

It is the average income per head in the country. It is a rough indicator of the standard of living of the people in a country.

PCI = NI/Population

4.7 Three sectors of an economy

An economy can be broadly classified into three sectors – primary, secondary and tertiary sectors.

1. Primary Sector

The primary sector consists of agriculture and allied activities. This sector is made up of activities that are undertaken by directly using natural resources. A good produced by exploiting natural resources is an activity of the primary sector. The main activities coming here are agriculture, mining and quarrying, forestry, fishing, animal husbandry, poultry etc.

2. Secondary Sector

The secondary sector is the manufacturing or the industrial sector. Here raw materials are changed into other forms in the factory. For example cotton gets converted into finished cloth in this sector.

3. Tertiary Sector

The tertiary sector is the services sector and provides various services like transport, communication, banking, education, health etc. These activities generate services rather than goods. As an economy advances the primary sector loses its importance. In developed countries the tertiary sector is the largest contributor to the national income.

4.8 Methods of estimating national income

The circular flow of economic activity makes it possible to estimate national income in three ways (a) as a flow of goods (b) as a flow of income and (c) as a flow of expenditure. Accordingly there are three methods of estimating national income.

1. Output Method

In this method, the economy is divided into different sectors like agriculture, mining, manufacturing, transport, communication, services etc. By adding up the net values of all the production that has taken place in these sectors during a given year, the total output of the country is obtained. The advantage of this method is that it shows the relative importance of the different sectors by showing their contribution to national income.

NI = value of output from agricultural sector +
value of output from industrial sector +
value of output from services sector

2. Income method

Here national income is calculated by adding up the incomes of all individuals in the country. Employees receive income in the form of wages and salaries, land receives rent, capital gets interest and entrepreneurs receive profits. By adding up all incomes received in the form of wages, rent, interest and profit the total income of the country is obtained.

NI = Rent + Wages + Interest + Profits

3. Expenditure Method

In this method, national income is derived by adding up all the expenditure made on goods and services during a year.

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

C = Consumption, I = Investment, G = Government expenditure, X = Exports and M = Imports

All the above methods give the same result. This is because for a country,

Income = Expenditure = Output

In actual practice, more than one method is used in combination.

4.9 Difficulties in measuring national income

1. Existence of non-monetised transactions. A considerable part of the agricultural output is consumed in the farm itself and does not come into the market for sale. Hence they are not valued in terms of money and as such excluded from national income estimates.
2. Double Counting. In national income estimates, the same product may be counted more than once. This over inflates the national income. For example, tyres may be initially counted in the tyre factory and later at the automobile factory since the value of the automobile includes the value of its tyres also.
3. Most small manufactures do not keep accounts. It is thus difficult to get reliable information from a large number of small producers.
4. Another problem is with regard to the treatment of income of foreign firms operating in the country. The question is whether their income can be included in the national income of the country in which they are operating.
5. Individuals may pursue more than one job and often end up under reporting their actual income.
6. Lack of adequate statistical data in the hands of the various government agencies make the estimation of national income difficult.
7. National Income of two or more years cannot be compared properly since within this time prices of various products may change.

4.10 Inflation

Inflation is generally associated with rapidly increasing prices that cause a decline in the purchasing power of money. Prof. Coulborn has defined inflation as too much money chasing too few commodities. According to Prof. Crowther, inflation is a state in which the value of money is falling. Prof. Shapiro has defined inflation as a persistent and appreciable rise in the general level of prices.

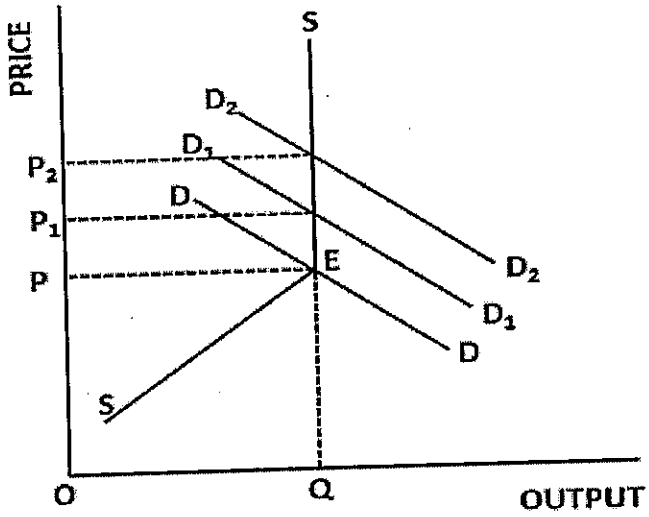
It is a situation where demand for commodities exceeds the available supply. During a period of inflation, the price level will rise.

Types of inflation

1. Demand Pull Inflation

This type of inflation is caused by an increase in the total demand for commodities and services in the country. When new industries are started in the country, the income in the hands of the people increase and they use this money to demand more and more commodities. This will result in an increase in the price of every product.

This inflation may occur when the government spends huge amounts of money for financing a war or for financing development projects. Inflation occurs during war because the one great aim at that time is that of winning the war. Since modern wars are so expensive, the Government has to depend upon created money to finance war.



In the figure, DD is the demand curve and SS is the supply curve. The economy is in equilibrium at E when the demand and supply curves intersect. There is full employment in the economy, hence supply of output cannot be increased. The supply curve becomes a vertical straight line after E. If there is an increase in demand, the price level tends to rise.

However, this type of inflation can easily be controlled by various tax policies.

2. Cost Push Inflation

It is caused by an increase in the cost of production. It is also referred to as wage or profit inflation. This may occur due to:

a) *An increase in profits*. When companies try to make more profits by increasing the prices of their products, other industries using that product as a raw material will be forced to increase their own prices.

b) *An increase in wages*. Workers are often known to go on strike demanding higher wages. Companies agree and will pass on the increase to customers by increasing the price of their product. Soon workers in other industries will also demand higher wages.

3. Creeping Inflation

In several countries around the world, there has been a tendency for prices and wages to push one another upwards. This situation has been described as creeping or persistent inflation.

4. Galloping or Hyper Inflation

This is a serious type of inflation. For example, it was experienced in Germany after World War I and in Hungary and China after World War II. In this situation, prices rise to a very great extent at high speed and high prices have to be paid even for cheap things. Money becomes quite worthless and new currency has to be introduced. This situation is known as galloping inflation or hyper-inflation.

5. Bottleneck Inflation

This refers to inflation that results from shortages, imbalances and rising costs as full employment output is approached.

Causes of inflation

A. Demand pull factors

1. Increase in money supply. When the supply of money increases, demand will also increase leading to higher prices.
2. Increase in disposable income. If the income in the hands of the people increases, it will result in a direct increase in demand.
3. Increase in foreign demand and hence exports. If the demand for products of the home country increases in foreign countries, income in the hands of the exporting industries will increase.
4. Increase in population.

B. Cost push factors

1. Increase in oil prices. The world has witnessed several oil shocks which is causing inflation in all oil importing nations.
2. Increase in wages and salaries. Any increase in wages and salaries will increase the cost of production resulting in higher prices.
3. Decrease in imports. If there is a restriction in imports, prices are likely to stay high inside the home country.

C. Other factors

1. Food inflation. Several unfavorable factors have resulted in a scarcity of food products around the world resulting in a rapid increase in prices.
2. Climatic factors affecting agricultural output. Global warming, droughts and natural calamities all are resulting in higher agricultural prices.
3. Hoarding by traders. Traders are known to stock agricultural products in their ware houses in order to create an artificial scarcity.
4. Scarcity of skilled labour. Lack of skilled labour is affecting industrial production in developing countries.
5. Deficiency of essential raw materials. As industrial development progresses at a rapid pace, the world is facing a shortage of several basic raw materials. This will result in an increase in the cost of production.
6. Failure by the government to stabilize agricultural prices.

Effects of Inflation

Inflation has resulted in serious imbalances in the Indian economy. Price relationships were badly distorted and production pattern has gone out of line with demand. Resources of the country need to be diverted to control prices and production has shifted from essential commodities to non-essential ones.

1. Inflation results in business uncertainty in the country. During times of inflation, prices of all commodities including those of the raw materials required by industry would be

increasing. Companies would find that the cost of a project keeps on increasing during its lifetime and their initial profit calculations may go wrong.
2. Inflation leads to depreciation in the value of money. More and more income is required for a family to purchase the same quantity of commodities in order to maintain the same standard of life.
3. It discourages savings as the value of savings also declines as money value declines. With the money that has been saved earlier, consumers can now purchase only a lesser number of commodities. Hence they have the tendency to spend all of their income.
4. To escape from inflation, people may invest in foreign currencies. The reduction in the value of the Indian rupee encourages people to invest their money in currencies like the dollar, which are more stable. Thus, money that should have been deposited in Indian banks goes to foreign ones.
5. Inflation badly affects the fixed income earners. People who have retired and those having a fixed salary find that they can buy fewer commodities today than they could in earlier years. Since their income does not grow while prices of commodities increase, they are left with reduced purchasing power.
6. Traders, hoarders and speculators gain enormously through ever rising profit margins
7. Anticipating rising prices companies increase their holding of inventory and huge sums of money get blocked in this unproductive activity.
8. When the prices of essential commodities increase, less money is available for purchasing other products.
9. During inflation, debtors gain while creditors lose. Creditors are paid back money, which now has less purchasing power.

4.11 Measures to control inflation (Monetary and fiscal policies)

Inflation has been the most pressing problem in India in the recent years. Controlling inflation largely depends upon checking monetary expansion and controlling food prices. With oil prices expected to go up further, controlling prices will be difficult. The following steps are taken by the government to control inflation.

The various methods of credit control are (A) Monetary measures (B) Fiscal Measures and (C) Non-monetary measures

A. Monetary measures

Monetary measures are classified into Quantitative and Qualitative.

1. Quantitative techniques

These techniques aim to regulate the volume of credit in the economy.

(a) Bank Rate Policy

The Bank rate is the minimum rate at which the central bank of a country will lend money to all other banks. If the Reserve Bank of India increases the bank rate, the interest rates charged by other banks go up. When the rate of interest goes up, businessmen will be discouraged to borrow more money. Thus, to control inflation, the central bank will increase

the bank rate. Moreover loans will become more costly and people will postpone their purchases.

(b) Open market operations

It is the purchase and sale of government securities by the central bank. If the RBI sells securities, money will flow from the banks to the Central Bank and the amount of money left with the banks to be given out as loans will be reduced. The central bank will sell government securities to the banks and the amount of cash with the banks will come down forcing them to reduce their loans.

(c) Variation in cash reserve ratio

CRR is the percentage of total deposits which commercial banks are required to maintain in the form of cash reserves with the RBI. If CRR is raised, the banks now have to keep more reserves forcing them to reduce the supply of loans.

(d)Statutory liquidity requirements

SLR is the proportion of total deposits which commercial banks are required to maintain in the form of liquid assets like cash, gold, government securities etc.

2. Qualitative techniques (Selective Credit Control)

These are directives issued by the RBI to banks regarding their loans. These techniques are employed to channelize the flow of bank credit for purposes that are socially and economically desirable. It aims to divert bank loans into selected channels. They direct the flow of credit into useful channels. The purpose of selective controls is the rational allocation of scarce bank credit and its economic utilization. It also serves the purpose of preventing speculative activities with the help of bank finance. These techniques are very helpful in developing economies where overall credit restriction may hinder growth by preventing the flow of credit for investment.

The common qualitative credit control techniques are:

(a) Defining the purposes for which loans may be given. The RBI may direct control the loans given by banks for the purchase of shares.

(b) Fixing margins in respect of secured loans. In this case, the central bank specifies the fraction of the purchase price of securities that must be paid in cash.

(c) Stating the maximum amt. of loan to any borrower.

(d) Banks have to obtain RBI's authorization before loans beyond a certain sum could be given out.

(e) Credit Monitoring Arrangement: Here RBI monitors all loans beyond a certain amount

(f) Differential rates of interest. Different interest rates may be charged to encourage certain sectors and to discourage certain other sectors. In India, this has been used especially, to encourage exports, agricultural production and production in small scale and cottage industries sector.

(g) Moral Suasion: It is the issuing of warnings threatening strict action if the banks do not comply with the directives issued by RBI. The central bank requests banks not to lend in some sectors. It may also want more loans to be given in certain sectors. There is no legal compulsion behind their acceptance. Generally if a request is not carried out by the member bank, the RBI may take such steps as banks are forced to accept. The central bank will thus persuade the commercial banks to follow its policies.

B. Fiscal measures

1. Increasing taxes. If direct taxes are raised, the disposable income in the hands of the people is reduced and public spending will come down. If taxes on commodities are raised, the cost of purchases will increase and people will postpone consumption
2. Reduction in government expenditure. However, this is not easy since most of the government spending is on infrastructure, health, education and defense.

C. Non-monetary measures

1. Controlling wages and salaries as far as possible
2. Controlling prices through an efficient system of fair price shops
3. Reducing the facilities for installment purchases
4. Increasing imports so that the supply of commodities which are in short supply can be increased

4.12 Business financing: Bonds and shares

Bonds

A bond is a loan which pays investors a fixed rate of return. A bonds risk depends on the credit worthiness of the issuer. The interest rate on the bond determines its value to the investor. It is a type of fixed income security and pays back a regular amount to the investor. Bonds are used by governments and companies that need huge a huge amount of money to finance various projects.

Types of bonds

1. *Fixed coupon rate bonds.* In this type of bonds the interest rate is fixed from the date of issue.
2. *Floating coupon rate bonds*. In this type of bonds the interest rate fluctuates.
3. *Zero coupon bonds.* In this type the bond holder receives the face value of the bond upon maturity.
4. *Sovereign gold bonds.* These are substitutes for holding physical gold.
5. *Tax free bonds.* The interest earned on these bonds is completely tax free.
6. *Perpetual Bonds.* These are bonds with no maturity date. The issuer pays the interest till it is in existence.

Advantages

1. Bonds are relatively safe.
2. They provide a fixed rate of return.
3. Bonds pay interest at predictable intervals.

Disadvantages

1. They carry low interest rates.
2. The bond issuer may not be able to pay the investor on time, hence bonds have a default risk.
3. Inflation can reduce the returns from bonds.

Shares

Shares are units representing ownership in a company. Companies issue equity shares to investors in return for capital. Shares of privately held companies are owned by the founders or partners. As small companies grow, shares are sold to outside investors like friends and venture capitalists. If the company continues to grow it will seek to raise additional equity capital by selling shares to the public through an initial public offering. After an IPO, a company's shares are listed in the stock exchange and its shares are said to be publically traded.

The shareholders collectively own the company. They enjoy the rewards and bear the risks of ownership. They have a claim to the income of the firm. Being owners of the firm they elect the board of directors and have a right to vote on every resolution placed before the company.

Advantages

1. It represents permanent capital
2. There is no liability for repayment.
3. Equity shareholders enjoy the controlling power over the firm.
4. The rewards of equity capital are very high.

Disadvantages

1. The cost of equity capital is very high.
2. Sales of equity shares to outsiders results in dilution of control of existing owners.
3. They have a low priority if there is a claim to the income or assets of the firm.
4. Equity stock prices tend to fluctuate widely, making equity investments risky.

4.13 The Money Market

The money market is the financial market for lending and borrowing of short term funds. Banks and other financial institutions lend their surplus funds for the short term in the money market. Banks, companies and the government are the borrowers. The main money market instruments are:

1. Commercial Bills

The bill market is an important part of the money market where short term commercial bills of up to 90 days are bought and sold.

2. Treasury Bills

The 91 days treasury bills is the most common way in which the Government of India raises funds for the short period.

3.14 Day Treasury Bills

These bills cater to the needs of institutions which have surplus funds that can be invested for very short periods.

4. Call Money Market

It is the market for very short term funds. The public sector banks, the private sector banks and the foreign banks are the major players in this market.

5. Certificate of Deposit

It is a certificate offered by banks at a discount to the face value. The maturity value is equal to the face value. CD's are freely transferable and have become popular with banks for raising resources at competitive rates of interest.

6. Commercial Paper

It is a promissory note issued by companies in the format prescribed by the RBI. It is issued by companies for raising funds for the short period. The purpose of CP is to enable high level corporate borrowers to diversify their short term borrowing.

4.14 The Capital Market

It is the market for long term funds. It refers to all the facilities for borrowing and lending long term funds. The back bone of the capital market is the stock market comprising of all the stock exchanges operating in the country.

The stock market

It refers to the organized market where shares and securities issued by the various companies are traded. It is a most important source of funds for companies. This market consists of all the recognized stock exchanges operating under the rules laid down by the government. The main stock exchanges in India are Bombay Stock Exchange (BSE), National Stock Exchange (NSE) and Over The Counter Exchange of India (OTCEI). Positive or up trends are referred to as bull markets; negative or down trends are referred to as bear markets.

Functions

1. It translates short-term investments into long-term funds for companies. Investors are interested in getting quick returns. Companies however need finance for the long term. Since the shares can be transferred from one person to the other, the investor can get his money any time he wants by selling the shares to other investors. During this transaction, the company's funds remain unaffected.
2. It directs the flow of capital into the most efficient companies. Companies, which make more profits, will find that their shares are in demand.
3. It ensures a certain measure of safety for investments. The stock exchanges operate under a regulatory framework, which seeks to protect the interests of investors. In India, there is the Securities Exchange Board of India (SEBI) to ensure that a reasonable level of safety is provided to investors and transactions take place under competitive conditions.
4. It induces companies to raise their standard of performance. When the equity share of a company is listed in the stock exchange, the company's performance is reflected in its share price. This price is available to the public since it is displayed at the stock exchange. Such a public exposure induces companies to keep on improving their performance year after year.

5. The stock market is often considered to be the primary indicator of the economic strength and development of a country.
6. The stock exchanges allow investors to quickly and easily sell shares and are an attractive feature of investing in shares, compared to other less liquid investments such as real estate.

Problems faced by the stock market in India

In the recent times, the stock market in India has witnessed unparalleled growth. However, this growth could not be sustained and a crash occurred. From then on, the market has been fluctuating. These fluctuations were not always in response to a company's financial strength. As a result, today most of the small investors stay away from the market. The major reasons for this sad state of our stock market are:

1. The Indian stock market is dominated by the actions of large institutions like Unit Trust of India, LIC and Foreign Institutional Investors. When these institutions buy shares, prices move up and when they sell the market crashes. Since the volume of shares they deal in is very huge, any one of their actions affects the entire market.
2. The Indian stock mkt. suffers from inadequate rules and regulations. The market is regulated by SEBI. Even though this organization has huge powers, the regulation in practice is ineffective since it is impossible to monitor all aspects of the functioning of the market.
3. Most of the trading is of a speculative nature where the objective is to make money from short-term price fluctuations. It is estimated that genuine investments represent less than 10% of total transactions.
4. In the stock market, a new set of information can be quickly converted into money. It should be possible for investors to get information about the performance of companies as soon as the results are declared.
5. Most of the stock brokers lack the professional skill required to advice their clients on the buying and selling of shares
6. The market suffers from insider trading. It is the trading in a security based on material information that is not available to the public. A company insider is someone who has access to the important information about a company that affects its stock price.
7. There is no assurance of growth of investment because many factors such as govt. policies, natural disasters, political issues, introduction of new products, competition from other companies etc. all influence the market
8. In case of certain small capitalisation companies, there is a very high risk of loss of investment.
9. The new investors often depend upon stock market tips from various sources which may ultimately result in losses.

4.15 Demat account and Trading account

A demat account along with a trading account is necessary to invest in the share market.

Demat account

In the early days of the stock market, shares were held in a physical form by way of share certificates. It made the entire process of share trading difficult to carry at short notice.

Certificates were often lost or damaged. In order to eliminate these issues demat accounts were started. In India, the National Securities Depository Limited (NSDL) was established to start demat accounts.

Demat account or dematerialised account is used to hold the shares of companies in an electronic form. It is similar to a bank account in that the account of the user is credited each time shares are bought and debited each time shares are sold. It eliminates the need for maintaining shares in physical form.

Dematerialisation is the process of converting the physical share certificates into electronic form. It is designed to offer paperless transactions, security and increase the speed of trading.

Advantages

1. Demat account eliminates the need for unnecessary paperwork.
2. Investors enjoy automatic updating of their accounts as and when they buy or sell shares.
3. Increases transparency.
4. Increases share trading volume.
5. Increases market participation.

Trading account

A trading account is used to buy or sell shares in the stock market. The investor registers for the trading account with a stock broker. Each account comes with a unique ID which is used for conducting transactions. A trading account acts as a link between the demat account and bank account of an investor. When an investor wants to buy shares he places an order through his trading account. Upon completion shares get credited into his demat account and the required amount gets deducted from his bank account.

Earlier the stock exchanges functioned on the basis of the open outcry system in which traders used hand signals and verbal communication to convey their buying or selling decisions. This was replaced by the online system where the physical presence of traders is not required in the stock exchanges. Each individual opens a trading account with a registered stock market broker who conducts trading on their behalf.

Advantages

1. A trading account provides online access to different stock exchanges.
2. It helps an individual keep a track of his investments from anywhere.
3. Increases transparency since proof of identity, address and bank account details are needed to open the trading account.
4. Increases share trading volume since the entire process of share trading is now secure and quick.
5. Trading accounts have made the procedure for fund transfer easy and reliable.

4.16 SENSEX and NIFTY

An index number in statistics is a measurement of change in a variable during a given period. A stock market index is a statistical tool to track the performance of the stock market.

Since the number of listed companies in a stock exchange is large, it is not possible to look at the price of each share to find out whether the market is showing an upward or

downward trend. Indexes measure the performance of a basket of shares to find out the performance of the market. They mirror the stock market behavior and give a broad outline of the market movement. The most widely followed indexes in the US are the S&P 500, Dow Jones and Nasdaq Composite. The notable indices in India are BSE Sensex & NSE Nifty.

Most of the trading in the Indian stock market takes place on its two stock exchanges: the Bombay Stock Exchange and the National Stock Exchange. Almost all the significant firms in the country are listed on both the exchanges.

BSE Sensex

Sensex is the oldest market index in India and consists of the shares of 30 firms listed on the BSE. Sensex is derived from the two words sensitive and index.

The companies that make up the sensex are taken from the Bombay Stock Exchange and are chosen based on the trading volume, liquidity and industry representation. The sensex is used by most investors as a barometer of the overall state of the Indian economy. The index is operated by Standard and Poor's and is also known as the S&P BSE Sensex.

Initially it used the full market capitalization methodology but later shifted to the more common free float market capitalization methodology. Instead of using a company's outstanding shares it uses its float or shares that are available for trading. The companies comprising the index are given importance according to their share in the total market capitalization. It gives more weight to the largest companies and those with higher trading volume. The base value of the sensex was taken as 100 on 1st April 1979.

NSE Nifty

Nifty is a market index of the National Stock Exchange. Nifty is derived from the two words National Stock Exchange and fifty.

It consists of fifty of the top performing companies traded on the NSE. These shares span across several diversified sectors and include IT, finance, oil, automobiles, telecom, construction, pharmaceuticals, cement, metals, entertainment etc. It is considered as a benchmark index of India and is an indicator of the performance of the Indian economy.

It uses a free float market capitalization methodology. The base period for the Nifty50 index is 3 Nov 1995 and the base value was set at 1000.

Problems:-

1. In a country, the total expenditure of the people on various goods and services is Rs. 820 crores for the year 2021. The government spending is Rs.200 cr while the total investment in the country is Rs.150cr.Exports are Rs.50 cr and imports are Rs.80 cr. The depreciation is expected to be Rs.30 crores. Find (a) GNP (b) GDP and (c) NDP

2. From the following data, calculate (a) GDP (b) National Income at factor cost (c) If the Disposable Personal Income is Rs. 6300 crores what is the aggregate value of transfer payments in the economy?

(a) Gross National Product = Rs. 10000 crore
(b) Net Factor Income from abroad = Rs. 500 cr
(c) Undisbursed Profit = Rs.1400 cr

(d) Corporate Income Tax = Rs.500 cr
(e) Depreciation = Rs.1500 cr
(f) Indirect taxes = Rs. 1100 cr
(g) Income Tax = Rs. 500 cr

3. A company producing watches makes Rs.50000 every day by selling them. Over this day the equipment of the company depreciates by Rs. 5000. Out of this, it pays GST of Rs.3000, gives the owner Rs. 20000 and retains Rs. 22000 for its expansion activities. The owner pays Rs. 2000 as income tax from his income. Compute the firm's daily contribution to the following measures of national income. (a) GDP (b) NDP (c) NI (d) Personal Income (e) Disposable Personal Income.

4. What is the implication of the following statement?

GNP is Rs.58, 33,558 crore and NNP is Rs. 55, 01,067 crore.

Module 5 (International Trade)

Advantages and disadvantages of international trade - Absolute and Comparative advantage theory - Heckscher-Ohlin theory - Balance of payments – Components – Balance of Payments deficit and devaluation – Trade policy – Free trade versus protection – Tariff and non-tariff barriers.

5.1 International trade

International trade refers to the exchange of capital, goods and services across international borders. Without trade, nations would have to rely only on products produced domestically. Trade plays a dominant role in the economic development of a country by helping it widen its market.

Advantages of International Trade

1. International trade enables countries to specialize in the production of those commodities in which they have a comparative advantage.
2. It increases the size of a firm's market, resulting in lower average costs and higher productivity.
3. International competition promotes innovative production, new technology and marketing.
4. Consumers benefit in the domestic economy as they can now obtain a greater variety of goods and services.
5. The increased competition ensures commodities are supplied at the lowest prices.
6. It results in foreign exchange gains. When India sells its products abroad, it receives foreign currency. This money is then used to pay for imports that are produced more cheaply overseas.
7. Free trade creates new jobs in the domestic economy. Employment will increase in exporting industries.
8. The countries involved in free trade experience rising living standards, increased real incomes and higher rates of economic growth. This is created by more competitive industries, increased productivity, efficiency and production levels
9. Greater access to imports will benefit consumers and businesses by widening the choice of products available and boosting the living standards of the people.
10. Having a bigger market to sell to means that a business can sell more, earn more profits and pay higher wages. Exporting businesses pay more to workers and sell more per worker than non-exporters.
11. In the absence of trade, governments may distort market prices by subsidizing production. In such cases, production and trade, guided by distorted prices, will not be efficient.
12. One clear cost of protection is that the country imposing it forces its consumers to forgo cheap imports.

Disadvantages of International Trade

1. The main argument for protectionism is the infant industry argument. Industries in developing countries can effectively compete with those already developed if they receive some initial protection in the form of tariffs or subsidies.
2. Increased economic stability as economies do not become dependent on global markets. This means that businesses are not vulnerable to downturns in the economies of their trading partners, e.g. Recession in the USA leads to decreased demand for India's exports, leading to falling export incomes, lower GDP, lower incomes, lower domestic demand, and rising unemployment.
3. Countries with surplus products may dump them on world markets at prices below the cost of production.
4. Countries whose economies are largely agricultural face unfavourable terms of trade. Their export income is much smaller than the import payments they make for high value imports resulting in large foreign debt levels.
5. All round industrial development will occur in the country since it cannot depend on foreign industries.
6. Free trade can lead to pollution and other environmental problems as companies fail to include these costs in the price of goods while trying to compete with companies operating under weaker environmental legislation in some countries.
7. If old traditional industries are not protected, foreign competition may ruin them and create unemployment.
8. It is unwise to export all the natural resources of a country. For example, India has exhausted its large supply of manganese and mica in the name of earning foreign exchange.
9. Protective import duties are a way to generate tax revenue.
10. During times of global financial crises and recession, falling employment has often resulted in an increase in protectionist policies in many countries. Governments in the United States, Britain and other European countries have faced domestic pressure to stop purchases from Chinese and Indian companies.

5.2 Absolute advantage theory of international trade

Assumptions

1. There are no barriers to trade in goods.
2. Labour is the only relevant factor of production.
3. Production exhibits constant returns to scale.
4. There are no transportation costs.
5. Labour is mobile within a country but immobile between countries.

The Theory

The theory of absolute advantage was put forward by Adam Smith. The theory states that the basis of international trade is absolute advantage in the production of a commodity. It was the trade theory that first indicated the importance of specialization and division of labour.

Suppose there are two commodities and two countries which produce these commodities. One country is efficient in the production of one commodity and has an absolute advantage in the production of this commodity. The other country has an absolute

advantage in the production of the other commodity. The countries will specialise in the commodity in which they have an absolute advantage. They will export this commodity to the other country. From this trade both the countries will benefit.

The following table gives the man-hours required to produce a unit of wheat and cloth in the US and UK.

Labour cost in hours required to produce one unit of wheat or cloth		
	U.S.	*U.K.*
Wheat	3	10
Cloth	6	4

It will be seen from the above table that to produce one unit of wheat in the U.S. 3 hours of labour and in U.K. 10 hours are required. To produce one unit of cloth, in the U.S. 6 hours of labour and in U.K. 4 hours are required. Thus the U.S. can produce wheat more efficiently (that is, at a lower cost), while U.K. can produce cloth more efficiently.

U.S. has an absolute advantage in the production of wheat while U.K. has an absolute advantage in the production of cloth. Adam Smith showed that the two countries would benefit and world output will increase if the two countries specialize in the production of goods in which they have absolute advantage and trade with each other.

How such specialization and trade would lead to gain in output and would be mutually beneficial for the two countries is shown in the following table.

Gain in Output when labour is transferred			
	U.S.	*U.K.*	*World Output*
Gain in wheat	+2	-1	+1
Gain in cloth	-1	+2.5	+1.5

Suppose to specialize in the production of wheat, the U.S. withdraws 6 man-hours from the production of cloth and devote them to the production of wheat, it will lose 1 unit of cloth and gain 2 units of wheat.

Similarly, to specialize in the production of cloth if U.K. withdraws 10 hours of labour from wheat and use them for the production of cloth, it will lose one unit of wheat but gain 2.5 units of cloth.

The total world output of wheat would increase by 1 unit while that of cloth would increase by 1.5 units. According to Adam Smith, international division of labour and trade leads to the expansion in world output and wealth without any increase in productive resources.

Criticism

1. The theory assumed that each exporting country has an absolute advantage in the production of a commodity. Developing countries may not have any such advantage.
2. There are a large number of factors influencing trade between countries.
3. The theory does not consider that countries are often forced to export to neutralise their balance of payments deficit.

5.3 Comparative advantage theory of international trade

The theory of comparative advantage was put forward by David Ricardo. The theory states that the basis of international trade is comparative advantage in the production of a commodity. He argued that even if the countries did not have an absolute advantage in the production of any product, international trade would be beneficial and would bring gains to all countries.

A country will specialise in that line of production in which it has a greater comparative advantage in costs than other countries and will import those in which it has a comparative cost disadvantage. Each country will benefit if it specializes in the production and export of those goods that it can produce at relatively lower cost.

Assumptions

1. Labour is the only relevant factor of production.
2. Production exhibits constant returns to scale.
3. There are no transportation costs.
4. Labour is mobile within a country but immobile between countries.
5. There is no intervention by government in the economic system.
6. Perfect competition exists both in the commodity and factor markets.
7. There is full employment of resources in both the countries.

This two-country, two-commodity model can be analysed through the Table 2.3

Country	*Labour cost per unit of commodity in hours*		*Exchange ratio*	
	Cloth	*Wheat*	Domestic exchange ratio of Cloth	Domestic exchange ratio of Wheat
England	12	10	1 unit of cloth = 12/10 or 1.20 units of wheat	1 unit of wheat = 10/12 or 0.83 units of cloth
Portugal	16	12	1 unit of cloth = 16/12 or 1.33 units of wheat	1 unit of wheat = 12/16 or 0.75 unit of cloth

The above table indicates that England has an absolute advantage in producing both the commodities through smaller inputs of labour than Portugal. It does not mean that England will specialise in both cloth and wheat and Portugal will have nothing to export. In England, domestic exchange ratio between cloth and wheat is 12:10, i.e., 1 unit of cloth = 12/10 or 1.20 units of wheat. Alternatively, 1 unit of wheat = 10/12 or 0.83 units of cloth. In Portugal, the domestic exchange ratio is 16:12, i.e., 1 unit of cloth = 16/12 or 1.33 units of wheat. Alternatively, 1 unit of wheat = 16/12 or 0.75 unit of cloth.

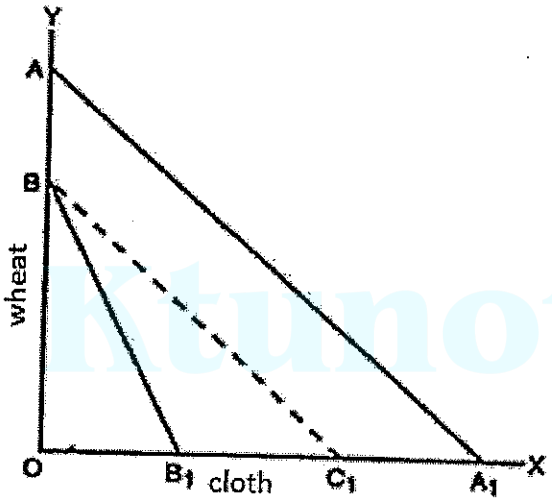
From the above cost ratios, it follows that England has comparative cost advantage in the production of cloth and Portugal has comparatively lesser cost disadvantage in the production of wheat. . Accordingly, England will specialise in the production and export of cloth, while Portugal will specialise in the production and export of wheat.

Diagrammatic representation of the gains from trade

In the following figure, AA_1 and BB_1 are the production possibility curves pertaining to England and Portugal. Using the same amount of productive resources, England can produce larger quantities of both the commodities than Portugal and hence England has absolute cost advantage over Portugal in respect of both the commodities.

If the curve BC_1 is drawn parallel to AA_1, the curve BC_1 can represent the production possibility curve of England. If England gives up OB quantity of wheat and diverts resources to the production of cloth, it can produce OC_1 quantity of cloth, which is more than OB_1. It means that England has comparative cost advantage in the production of cloth.

From the point of view of Portugal, it can produce the same quantity OB of wheat, if it gives up the production of smaller quantity OB_1 of cloth. If signifies that Portugal has less comparative disadvantage in the production of wheat. Accordingly, England will specialise in the production and export of wheat.



Criticism

1. The theory assumes that there are no other costs except labour costs.
2. The theory assumes constant returns to scale. Diminishing returns are likely to set in as scale increases.
3. The theory ignores differences in transport cost.
4. The assumption that labour is mobile only within the country is not valid.
5. The theory assumes the existence of perfect competition.
6. Actual international trade is influenced by various government restrictions like tariffs and other trade restrictions.
7. The assumption of full employment is not valid.

5.4 Heckscher - Ohlin theory of international trade (Factor endowment theory)

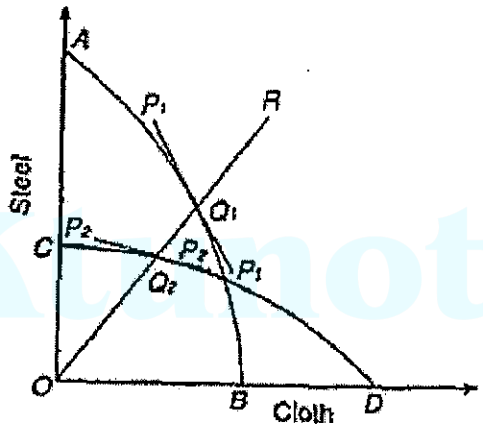
The Heckscher-Ohlin theorem was developed by Eli Heckscher and Bertil Ohlin. The theory states that the capital abundant country will export capital intensive goods and import labour intensive goods and the labour abundant country will export labour intensive goods and import capital intensive goods.

Ohlin pointed out that differences in factor endowments of nations and difference in factor proportions of producing different commodities form the ultimate basis of international trade.

Assumptions

1. There are only two factors of production.
2. It is a two country two commodity model.
3. There is perfect competition.
4. There is full employment.
5. There are no transport costs.

In the figure, the production possibility curve of country A is AB that of country B is CD. Steel is the capital intensive good and cloth is the labour intensive good.



Suppose, the two countries produced the goods in the same proportion along the ray OR. Country A would produce at Q_1 and country B at Q_2 on their respective production possibility curves. The slope of country A's production-possibility curve at Q_1, is steeper than the corresponding slope of country B at Q_2. This implies that steel is cheaper in country A and cloth is cheaper in country B, if the two countries are producing at Q1 and Q2 respectively. Country A would, therefore, tend to expand production of steel and country B would do so for cloth. This means that country A, a capital abundant country, has a production bias in favour of the capital-intensive good, steel, while the labour-abundant country, country B, has a bias in favour of producing the labour intensive good, cloth.

Merits

1. The H-O theory takes into account both the demand and supply factors for determining international trade.
2. This model lays down a permanent basis for international trade.
3. The theory maintains that production involves two factors of production-labour and capital.
4. The theory is based upon the general theory of value.
5. This theory explains the reason for comparative cost differences between nations in terms of factor endowments.

Criticism

1. It is a two commodity model.
2. The theory assumes perfect competition.
3. The theory assumes that there is full employment.
4. The theory ignores differences in transport cost.
5. The theory ignores technological changes.

5.5 Balance of payments

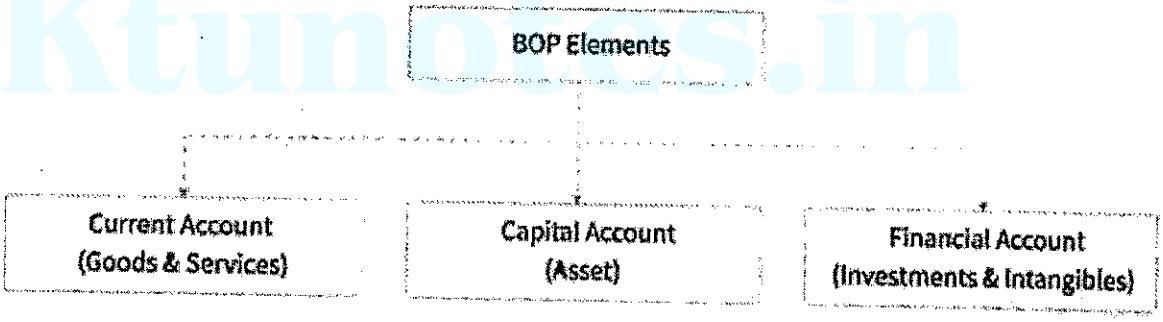
Balance of payments (BOP) sheet is an accounting record of all monetary transactions between a country and the rest of the world. These transactions include payments for the country's exports and imports of goods, services, financial capital and financial transfers. The BOP summarizes the international transactions for a specific period, usually a year. Sources of funds for a nation, such as exports or the receipts of loans and investments, are recorded as positive or surplus items. Uses of funds, such as for imports, investment in foreign countries etc are recorded as negative or deficit items.

Importance of balance of payments

1. The BOP statement of a country is an indicator of its economic status in the world.
2. It helps the government formulate its trade policies.

Components of BOP

The BOP is divided into three main components or elements: the current account, the capital account, and the financial account.



1. The Current Account

It is used to monitor the inflow and outflow of goods and services in a country. It is called current since it refers to transactions currently occurring - those that do not give rise to future claims. The trade position of the country is reflected by the current account. A current account is in balance when the country has enough resources to fund all of its foreign purchases. India has a current account deficit.

The current account consists of:

a. Merchandise trade. This is referred to as visible trade. This is the trade in manufactured goods and raw materials.

b. Services. This is referred to as invisible trade. It is the sale of services like travel and tourism, insurance, engineering, patents and copyrights etc.

c. Income receipts. This includes income derived from ownership of assets abroad such as dividends from shares and interest from bonds.

d. Unilateral transfers. These include worker remittances from abroad, foreign aid, contribution to charitable institutions and gifts from one country to another.

When combined, goods and services together make up a country's balance of trade (BOT). The BOT forms the biggest bulk of a country's balance of payments as it makes up total imports and exports. If a country has a balance of trade deficit, it imports more than it exports, and if it has a balance of trade surplus, it exports more than it imports.

2. The Capital Account

The capital account refers to the net change in ownership of foreign assets. It is where all international capital transfers are recorded. This refers to the acquisition or disposal of international assets. If a country purchases more foreign assets than it sells then the capital account is said to be in deficit.

The capital account is divided into:

a. Capital transfers.

b. Purchase and sale of real assets.

3. The Financial Account

In the financial account, international monetary flows related to investment in business, real estate, bonds, and stocks are documented. Also included are government-owned assets such as foreign reserves, gold, special drawing rights held with the International Monetary Fund, private assets held abroad, and direct foreign investment. Assets owned by foreigners are also recorded in the financial account.

Apart from the above three major components, bop also includes:

4. Official reserve account.

It refers to the foreign currency held by the central bank of a country and is used to balance the payments from year to year.

5. Errors and Omissions

Sometimes the balance of payments does not balance. It is due to errors that have crept in during the compilation of the bop statement. Hence an entry called errors and omissions is made to reflect this imperfection.

5.6 Balance of Payments deficit

The international BOP of a country reflects its economic strengths and weaknesses. Surpluses or deficits in the bop can lead to imbalances between countries. In general there is concern over deficits in the current account. Countries with deficits in their current accounts will build up increasing debt or see increasing foreign ownership of their assets.

Reasons for disequilibrium in balance of payments

1. Economic Factors

a) The BOP will have deficits if the level of imports in a country is high.
b) Lack of adequate international capital inflow into a country.
c) External borrowings and loans from foreign countries.
d) Rising petroleum prices have put a strain on the forex reserves of several countries.
e) The quality of products of developing countries is not up to the world standards due to which they could not sustain foreign markets.

2. Political Factors
   a) Political instability in a country creates uncertainty among foreign investors which leads to a reduced inflow of foreign capital into the country.
   b) Disequilibrium in BOP also occurs in the event of fear of war with some other country.
3. Structural Factors
   a) The high degree of protection given to domestic industries leads to inefficiency and poor quality products. Hence exports suffer.
   b) In the case of India, the instability in the exchange value of the rupee was another problem. This has created problems for both exporters and importers. Even though the value of rupee was managed by the central bank, it was not able to maintain stability since the currency was often affected by factors beyond the control of the RBI.
4. Social Factors
   a) Countries like India export mainly agriculture and agro based products. The price of these has fluctuated heavily in the world markets.
   b) Indian agricultural exports were constantly affected by crop failures.
5. Technological Factors
   a) The lack of thrust in research and development has created a situation where countries like India have very few products that foreigners find attractive.
   b) Excessive stress on technology intensive export-oriented industries by countries like China has resulted in bop disequilibrium in countries like India.

5.7 Methods to correct disequilibrium in the BOP

1. Monetary Measures
   a) Monetary Policy. Monetary policy is the policy concerned with the supply of money in the economy. A reduction in the money supply will decrease the purchasing power of the people. Demand will decline and prices will come down. This reduces imports and encourages exports.
   b) Devaluation. It is the lowering of the exchange value of the currency of a country. When a country devalues its currency, exports become cheaper and imports become expensive which causes a reduction in the BOP deficit.
   c) Exchange Control. In exchange control, all exporters are directed by the monetary authority to surrender their foreign exchange earnings, and the total available foreign exchange is rationed among the licensed importers.

2. Trade policy measures
   a) Export Promotion. The country tries to increase exports by adopting various measures like reducing export duties, providing incentives to exporters, providing subsidies to exporters and exempting exports from taxes.
   b) Import Substitution. Steps may be taken to encourage the production of goods which are currently being imported. This will save valuable foreign exchange.
   c) Import Control. Imports and foreign travel is strictly monitored since they take away valuable foreign exchange. All foreign exchange earned has to be surrendered to RBI which then rations it out.

3. Non- Monetary measures

a) Promoting international travel and tourism.
b) Inviting foreign companies to come and invest in the country.
c) Taking extra efforts to ensure that Indians working abroad deposit their savings in banks in India.
d) Postponing debt repayments.
e) Keeping inflation under control.
f) Check on smuggling

5.8 Devaluation

It is the lowering of the exchange value of the currency of a country. When a country devalues its currency, exports becomes cheaper and imports become expensive which causes a reduction in the BOP deficit.

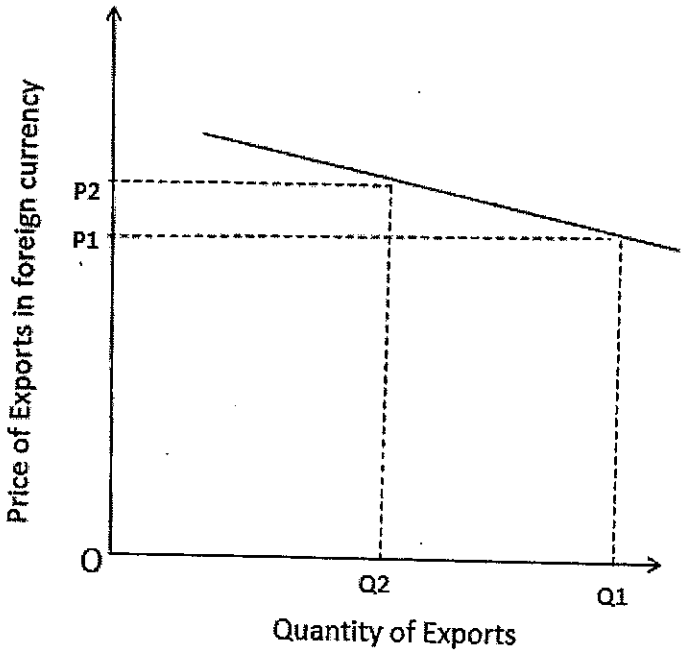
As a result of reduction in the exchange rate of a currency with respect to foreign currencies, the prices of goods to be exported fall, whereas prices of imports go up. This encourages exports and discourages imports. With exports so stimulated and imports discouraged, the deficit in the balance of payments will tend to be reduced.

Objectives of Devaluation

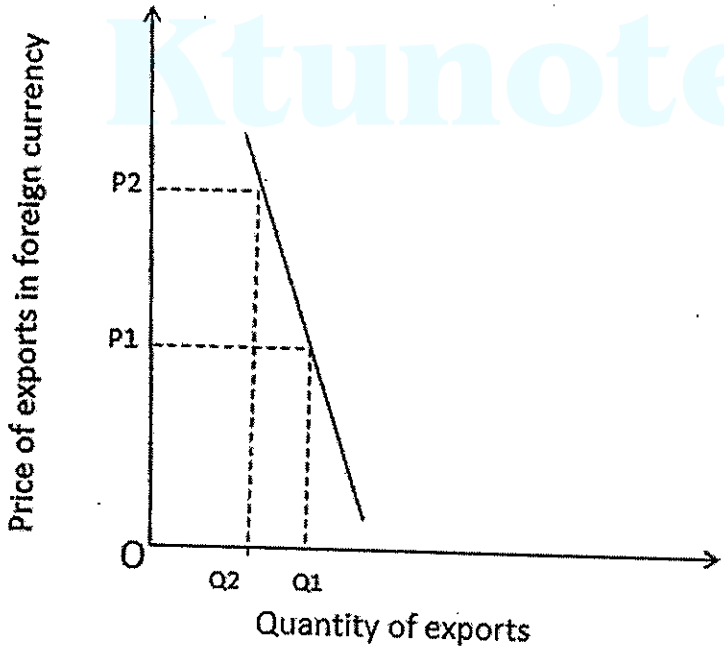
1. To boost exports. Imports become more expensive and exports become more competitive and lucrative.
2. To encourage a greater quantity of export from the country whose currency is being devalued.
3. To reduce trade deficits. The increase in exports along with a reduction in imports will cause a positive impact on the balance of trade.
4. To lower the cost of a country's external debt.

Condition for devaluation

Devaluation will be effective only if the demand for exports is elastic. The value of price elasticity should be greater than 1. In the following figure, the demand curve is elastic. Even a small percentage change in the price of exports will result in a large percentage change in quantity. The loss in revenue due to a decline in price is more than compensated by the gain in revenue due to the increase in quantity purchased. Hence devaluation is recommended.



In the figure given below, the demand curve is inelastic. A large percentage change in the price of exports will result in a small percentage change in quantity. The loss in revenue due to a decline in price is more than the gain in revenue due to the increase in quantity purchased.



Limitations of devaluation

1. Devaluation may cause inflation. Higher exports due to the devaluation in the currency will increase the level of income of the consumers causing domestic demand to rise, which raises prices.
2. It can result in an increase in the production cost of commodities that depend on inputs that are imported.
3. Domestic companies that have taken international loans will face greater servicing costs.

4. It will foster uncertainty within the global markets.
5. Devaluation may also spark trade wars. It will create tension with other competing countries.

5.9 Free trade versus protection

Free trade

Free trade occurs when there are no artificial barriers put in place by governments to restrict the flow of goods and services between trading nations. When trade barriers, such as tariffs and subsidies are put in place, they protect domestic producers from international competition and redirect, rather than create trade flows.

Free trade is supported as the policy, which is most conducive to maximizing the economic welfare of a given society. It is argued that free trade allows different economies to make use of comparative advantages by the exchange of commodities. After the signing of the General Agreement on Tariffs and Trade, per capita growth was at an all-time high while tariffs were at a historically low level. People within a national economy will all be better off if they specialize at what they do best instead of trying to be self-sufficient.

Advantages of free trade

1. International trade enables countries to specialize in the production of those commodities in which they have a comparative advantage.
2. It increases the size of a firm's market, resulting in lower average costs and higher productivity.
3. International competition promotes innovative production, new technology and marketing.
4. Consumers benefit in the domestic economy as they can now obtain a greater variety of goods and services.
5. The increased competition ensures commodities are supplied at the lowest prices.
6. It results in foreign exchange gains. When India sells its products abroad, it receives foreign currency. This money is then used to pay for imports that are produced more cheaply overseas.
7. Free trade creates new jobs in the domestic economy. Employment will increase in exporting industries.
8. The countries involved in free trade experience rising living standards, increased real incomes and higher rates of economic growth. This is created by more competitive industries, increased productivity, efficiency and production levels
9. Greater access to imports will benefit consumers and businesses by widening the choice of products available and boosting the living standards of the people.
10. Having a bigger market to sell to means that a business can sell more, earn more profits and pay higher wages. Exporting businesses pay more to workers and sell more per worker than non-exporters.
11. In the absence of trade, governments may distort market prices by subsidizing production. In such cases, production and trade, guided by distorted prices, will not be efficient.

12. One clear cost of protection is that the country imposing it forces its consumers to forgo cheap imports.

Protectionism

It is the policy of protecting domestic industries by imposing high customs duties on foreign products. Economic theory does not rule out protectionism as a welfare maximizing policy option. Whether or not a particular economy warrants protection depends on whether it will maximize the economic welfare of its populace. Historically, most economies developed while significant tariffs were in place and high tariffs tended to coincide with relatively high rates of per capita GDP growth.

Advantages of protectionism

1. The main argument for protectionism is the infant industry argument. Industries in developing countries can effectively compete with those already developed if they receive some initial protection in the form of tariffs or subsidies.
2. Increased economic stability as economies do not become dependent on global markets. This means that businesses are not vulnerable to downturns in the economies of their trading partners, e.g. Recession in the USA leads to decreased demand for India's exports, leading to falling export incomes, lower GDP, lower incomes, lower domestic demand, and rising unemployment.
3. Countries with surplus products may dump them on world markets at prices below the cost of production.
4. Countries whose economies are largely agricultural face unfavourable terms of trade. Their export income is much smaller than the import payments they make for high value imports resulting in large foreign debt levels.
5. All round industrial development will occur in the country since it cannot depend on foreign industries.
6. Free trade can lead to pollution and other environmental problems as companies fail to include these costs in the price of goods while trying to compete with companies operating under weaker environmental legislation in some countries.
7. If old traditional industries are not protected, foreign competition may ruin them and create unemployment.
8. It is unwise to export all the natural resources of a country. For example, India has exhausted its large supply of manganese and mica in the name of earning foreign exchange.
9. Protective import duties are a way to generate tax revenue.
10. During times of global financial crises and recession, falling employment has often resulted in an increase in protectionist policies in many countries. Governments in the United States, Britain and other European countries have faced domestic pressure to stop purchases from Chinese and Indian companies.

5.10 Trade policy

Trade policy refers to the regulations and policies that state how a country carries out international trade with other foreign countries. It is also referred to as commercial policy. It consists of tariffs on imported goods, quotas, export constraints and restrictions on the

domestic operations of foreign companies. Subsidies may also be provided to domestic industries to enable them to compete with foreign industries.

A major component of trade policy is trade barriers consisting of tariffs and non-tariff barriers.

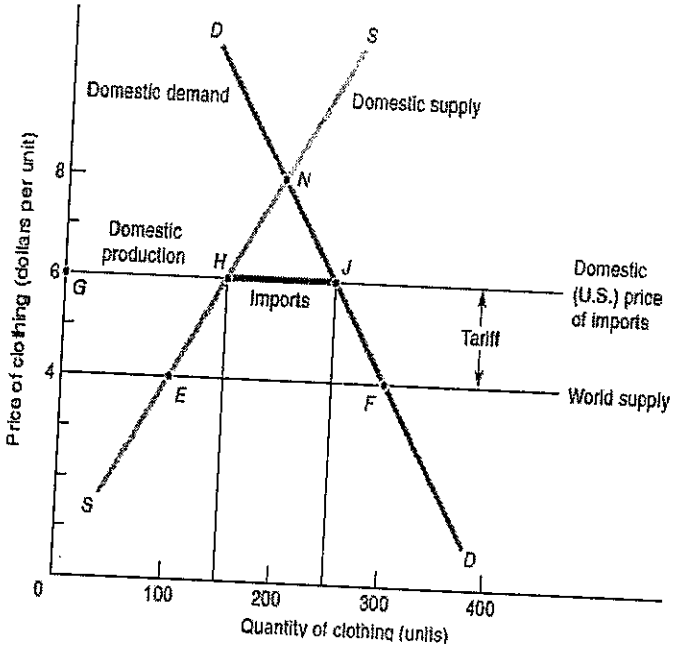
Tariff

A tariff is a tax imposed by one country on the goods and services imported from another country. Tariffs are used to restrict imports. They increase the price of goods purchased from another country, making them less attractive to domestic consumers. They are used to (a) discourage domestic consumers from consuming foreign goods and (b) encourage consumption and production of the domestically produced import-replacement substitutes.

The effect of a tariff is explained with the help of an example from the American market. The domestic demand curve of American consumers is drawn as DD and the domestic supply curve of American firms as SS. In a situation where there is no international trade, price would be high at $8 per unit and domestic producers would be meeting all the demand.

The world price of cloth is equal to $4 per unit. If international free trade occurs, the price in America would equal the world price level. The horizontal line at $4 represents the supply curve for imports, it is horizontal or perfectly price-elastic because American demand is assumed to be too small to affect the world price of cloth. Once trade opens up, imports flow into America lowering the price of clothing to the world price of $4 per unit. Domestic producers will supply 100 units while at that price consumers will want to buy 300 units. The difference, shown by the line EF, is the amount of clothing imports.

Suppose America imposes a tariff of $2. The price per unit is now $6. Domestic consumption is now lowered from 300 units in the free-trade equilibrium to 250 units. Domestic production is raised by 50 units, and the quantity of imports is lowered by 100 units. A tariff will tend to raise price, lower the amount imported and raise domestic production of the good.



Types of Tariffs

There are several types of tariffs and barriers that a government can employ:

1. Specific tariffs. It is a fixed amount of tariff imposed on one unit of an imported or exported good.
2. Ad valorem tariffs. It is levied on a good based on a percentage of that good's value.
3. Countervailing tariffs. These are levied on imported commodities which are heavily subsidised by foreign governments.
4. Anti-dumping tariffs. These are imposed on imported goods sold in the country at a price lower than its cost of production.

Advantages of Tariffs

1. Tariffs are a source of revenue for governments.
2. Infant industry argument. Industries in developing countries can effectively compete with those already developed if they receive some initial protection in the form of tariffs.
3. By making foreign-produced goods more expensive, tariffs can make domestically produced alternatives seem more attractive.
4. Governments often use tariffs to benefit particular domestic industries.
5. Tariffs are used to protect companies and jobs.
6. Tariffs can also be used as an extension of foreign policy as their imposition on a trading partner's main exports may be used to exert economic leverage.

Disadvantages of Tariffs

1. They create trade distortions.
2. It can hurt domestic consumers since a lack of competition tends to push up prices.
3. They can make domestic industries less efficient and less innovative by reducing competition.

4. Tariffs lead to a fall in the volume of international trade.
5. They can generate tensions by favouring certain industries over others.
6. An attempt to pressure a rival country by using tariffs can devolve into an unproductive cycle of retaliation, commonly known as a trade war.

Non-tariff barriers (NTBs)

A non-tariff barrier is a way to restrict trade using trade barriers in a form other than a tariff. While tariffs constitute visible barriers to trade, the non-tariff barriers, constitute the hidden or invisible barriers to trade. In more recent years, these non-tariff barriers have come into greater prominence than the conventional tariff barriers. These include direct restrictions or quotas, monetary restrictions, technical and administrative regulations. Their effect on trade is the same as tariffs - trade restriction and trade distortion causing misallocation of world resources and reducing global welfare.

Types of Non-Tariff Barriers

The different types of NTB's that a government can employ are:

1. Quotas. Quantitative restrictions, or quotas, are imposed with a view to reduce the quantity of imports or exports to a limited size. The effect of quotas are more severe than those which are created by tariffs since they physically limit the number of a product that a country imports. Import quotas are more common than export quotas. The world has witnessed severe import quotas of the mandatory type by the importing countries.
2. Voluntary export restraints. In this case the exporting countries are asked to put voluntary restraints on their exports.
3. Licenses. Countries may use licenses to limit imported goods to specific businesses. If a business is granted a trade license, it is permitted to import goods that would otherwise be restricted for trade in the country.
4. Monetary restrictions. A country can impose foreign exchange controls to limit the volume of imports. The importer needs foreign exchange to import foreign goods, and the government of the country can deny the use of foreign exchange for certain types of imports or for imports from certain counties. Exchange controls are quite widespread particularly in the poor countries which experience severe shortage of foreign exchange.
5. Administrative regulations. They include custom restrictions on banning certain products either on the ground that they constitute a health hazard or they do not meet the safety and health regulations in the country. For instance, imports of food stuffs or fruits or toys are restricted on the ground that they constitute a potential health hazard endangering the safety of people in the country.
6. Technical regulations. They include regulations with regard to labelling and packaging.
7. Customs procedures. Very often, there is administrative delay, lengthy procedures and red tape in customs clearing aimed at frustrating that the potential importer.
8. Government procurement policies. These policies involve giving preferences to domestic producers for government procurement.
9. Embargoes. Here countries officially ban the trade of specified goods and services with another country. Governments may take this measure to support their specific political or economic goals.

10. Sanctions. Countries impose sanctions on other countries to limit their trade activity. Sanctions can include increased administrative actions or additional customs and trade procedures that slow or limit a country's ability to trade.
11. Local content requirements. The government requires export products to contain a certain percentage of local raw materials. When increasing local content requirements, the demand for domestic raw materials increases. That will spur business activities, creating more jobs and incomes at home.

Advantages of NTBs

1. NTBs support domestic industrial development. It provides sufficient room for domestic industries to grow, achieve economies of scale, and be competitive in the international market.
2. NTBs support strategic industrial development. The decline in imports will divert demand for domestic products.
3. To increase production, domestic companies invest in capital goods and recruit more local workers. Thus more jobs are created.
4. They create more income and growth in the domestic economy.
5. They are more effective in limiting import volumes. Under quotas, for example, the main target is the quantity of imports. When the government tries to reduce imports, quotas are more effective than tariffs because they directly impact import volumes.

Disadvantages of NTBs

1. Governments cannot generate extra income. Under tariff, the government imposes a tax on imported goods which will increase revenue.
2. They limit the functioning of the free market. Countries should specialize and trade in products in which they have a comparative advantage. That way, free trade results in maximum benefits globally.
3. The cost of running a business increases. Companies have to fulfill several administrative requirements such as product standardization.
4. Companies have to follow complicated customs procedures.
5. Exporters face unfair competition in partner countries. Non-tariff barriers are beneficial for domestic companies but put foreign companies at a disadvantage.
6. Exporters would be able to sell only fewer goods under the quota policy. When exposed to quota restrictions, they have to find other markets to sell their products. If not, they have to cut production, lowering their income and profits.
7. When the government limits quotas, the market supply decreases. If domestic companies cannot compensate by increasing production, then scarcity will occur and prices will rise.
8. Competitiveness weakens in the long term. Competition is essential for promoting efficiency, and productivity.
9. Domestic companies have no incentive to spur innovation and introduce new technology products. The negative effect is a limited selection of goods, low-quality goods, and high prices.
10. Non-tariff barriers can lead to trade wars. Partner countries can pursue similar policies to protect their industries resulting in trade retaliation that would upset the balance of the global economy.