ECONOMICS:

SEMESTER-2nd

Unit I: Market Structures

Imperfect competition

Definition: Imperfect competition is a market situation where there are many sellers, but they are selling heterogeneous (dissimilar) goods as opposed to the perfect competitive market scenario. As the name suggests, competitive markets that are imperfect in nature.

Description: Imperfect competition is the real world competition. Today some of the industries and sellers follow it to earn surplus profits. In this market scenario, the seller enjoys the luxury of influencing the price in order to earn more profits.

If a seller is selling a non -identical good in the market, then he can raise the prices and earn profits. High profits attract other sellers to enter the market and sellers, who are incurring losses, can very easily exit the market.

Monopoly

A monopoly is a firm that is the only seller of a good or service in a market. In other words, a monopoly is the sole producer of a

commodity that has no close substitutes. For the purposes of regulation, monopoly power exists when a single firm controls 25% or more of a particular market.

Where do monopolies come from?

Monopolies can form for a variety of reasons, including the following:

- If a firm has exclusive ownership of a scarce resource, such as Microsoft owning the Windows Operating System brand, it has monopoly power over this resource and is the only firm that can exploit it.
- Governments may grant a firm monopoly status, such as with the Post Office, Railway etc.
- Patents , copy rights over creations of mind

- Costs of establishing an efficient plant, especially in relation to the market. This is the case of natural monopoly; examples are electric and gas utilities.
- A monopoly could be created following the merger of two or more firms. Given that this will reduce competition, such mergers are subject to close regulation and may be prevented if the two firms gain a combined market share of 25% or more.

Absence of Supply Curve Under Monopoly

It is generally accepted that, the monopolist does not face a supply curve and marks an important difference between the competitive market and monopoly. Equilibrium in the competitive market is struck at the intersection of the industry demand and supply curves. The monopolist, on the other hand, has a power either to set price or output determined on the demand curve simultaneously.it makes no sense to ask: given some price p, how much will the monopoly supply, therefore no supply curve can be derived.Supply curve becomes relevant, when the firm has no control over the price. According to Baumol: the supply curve is relevant only for the case of pure or perfect competition, the reason for this lies in the definition…. The supply curve is designed to answer the question, how much will a firm supply if it encounters a price and such a question is relevant to the behavior of firms that actually deal with prices over whose determination they exercise no control. The monopolist does not take the price as given and exercises control over the price as he is the sole producer. Monopolist maximizes profits by equating marginal revenue with marginal cost not with price as the competitive firm does.

Comparison of Perfect Competition and Monopoly

Perfect competition is the market in which there is a large number of buyers and sellers. The goods sold in this market are identical. A single price prevails in the market. On the other hand monopoly is a

type of imperfect market. The number of sellers is one but the number of buyers is many. A monopolist is a price-maker. In fact monopoly is the opposite of perfect competition.

Firm under perfect competition and the firm under monopoly are similar as the aim of both the seller is to maximise profit and to minimise loss. The equilibrium position followed by both the monopoly and perfect competition is MR = MC. Despite there similarities, these two forms of market organization differ from each other in respect of price-cost-output. There are many points of difference which are noted below.

(1) Under perfect competition there are a large number of buyers and sellers in the market competing with each other. The price fixed by the industry is

accepted by all the firms operating in the market. As against this under monopoly, there is only one single seller but a large number of buyers. The distinction between, firm and industry disappears under this type of market situation.

(2) The average revenue curves under competition and monopoly take different shapes. The average revenue (price) curve under perfect competition is a horizontal straight line parallel to OX-axis. The industry demand curve or revenue curve slopes downward from left to right. But under monopoly the firm is itself the industry.

There is only one demand curve common both to the monopoly firm and monopoly firm and monopoly industry. The average revenue curve under monopoly slopes downward and its corresponding marginal revenue curve lie below the average revenue curve. Under perfect competition MR Curve is the same as AR Curve.

(3) Under perfect competition price equals marginal cost at the equilibrium output, but under monopoly equilibrium price is greater than marginal cost. Under perfect competition marginal revenue is the same as average revenue at all levels of output. Thus at the equilibrium position under perfect competition marginal cost not only equals marginal revenue but also average revenue.

On the other hand under monopoly both the AR and MR curve slope downward and MR curve lies below AR curve. Thus average revenue is greater than marginal revenue at all levels of output. Hence at the equilibrium output of the monopolist price stands higher than marginal cost. Under competition price MR=MC. In monopoly equilibrium, price > MC.

(4) A competitive firm makes only normal profit in the long run. As against this a monopolist can make super normal profits even in the long run. In perfectly competitive market there is freedom pf entry and exit. Attracted by the supernormal profit earned by the existing firms the new competitive firms enter the market to compete away the supernormal profit. Output rises and profit becomes minimum.

Thus in the long run a competitive firm earns only normal profit. But under monopoly the firm continues earning supernormal profits even in the long run since there are strong barriers to the entry of new firms in the monopolistic industry.

(5) Under monopoly price is higher and output smaller than under perfect competition. Price output equilibrium is graphically shown in the diagram given below.

AR = MR curve is the demand curve under perfect competition which is horizontal straight line. The downward sloping AR and MR curve are the average revenue and marginal revenue curves under monopoly. At equilibrium point E (MR = MC) a competitive firm produces 'OM' output at OP market price.

At point F a monopoly firm attains equilibrium producing OM, output at OP, price. OP competitive price is less than OP, (OP < OP,) and OM competitive output is greater than OM, output (OM > OM,).

(6) A monopolist can discriminate prices for his product, a firm working under perfect competition cannot. The monopolist will be increasing his total profit by price discrimination if he find? Elastic ties of demand are different in different markets.

As against his a competitive firm cannot change different prices from different buyers since he faces a perfectly elastic demand at the going market price. If he increases a slights rise in price he will lose the sellers and makes loss. Thus a competitive firm can not discriminate prices which a monopolist can do.

Short Run Equilibrium Price and Output Under Monopoly:

Short Run Equilibrium of the Monopoly Firm:

In the short period, the monopolist behaves like any other firm. A monopolist will maximize profit or minimize losses by producing that output for which marginal cost (MC) equals marginal revenue (MR). Whether a profit or loss is made or not depends upon the relation between price and average total cost (ATC). It may be made clear here that a monopolist does not necessarily makes profit. He may earn super profit or normal profit or even produce at a loss in the short ran.

Conditions for the Equilibrium of a Monopoly Firm:

There are two basic conditions for the equilibrium of the monopoly firm.

- First Order Condition: MC = MR.
- Second Order Condition: MC curve cuts MR curve from below.

Explanation:

(a) Short Run Monopoly Equilibrium with Positive Profit:

In the short period, if the demand for the product is high, a monopolist increases the price and the quantity of output. He can increase the, output by hiring more labor, using more raw materials, increasing working hours etc. However, he cannot change his fixed plant and equipment. In case, the demand for the

product falls, he then decreases the use of variable inputs, (like labor, material etc.).

As regards the price, the monopolist is a price maker. There is a greater tendency for the monopolist to have a price which earns positive profits. This can only be possible if the price (AR) is higher than average total cost (ATC). The short run profit earned by the monopolist is now explained with the help of fallowing the diagram below:

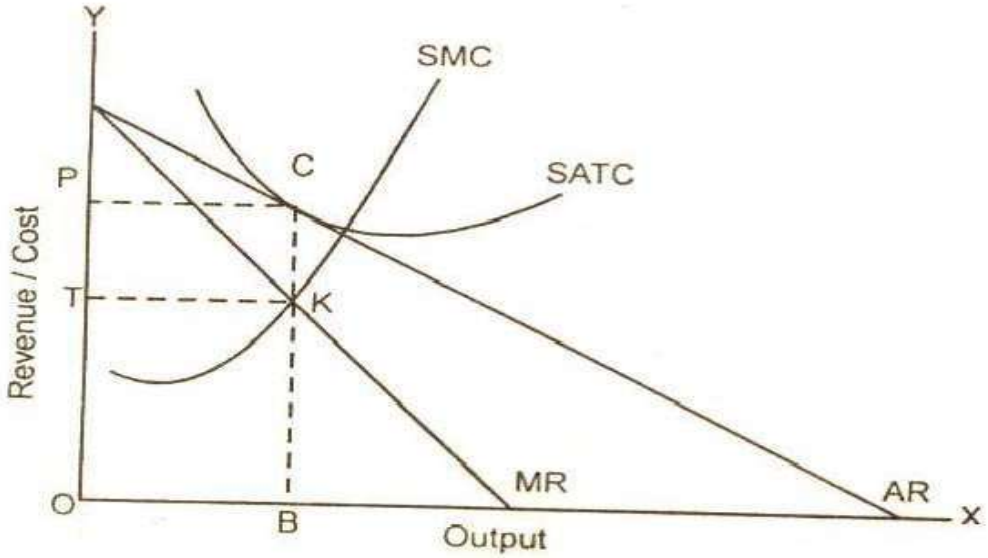


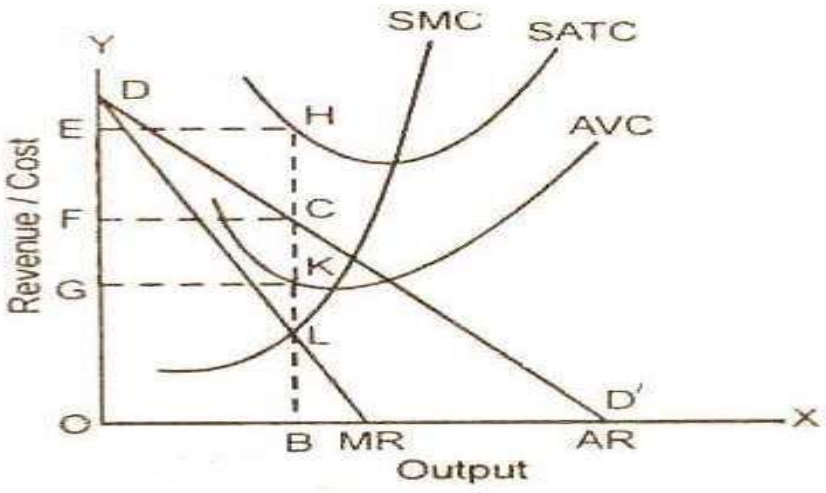
FIGURE 1.1

In figure (1.1), a firm is in the short run equilibrium at point K, where SMC = MR. The price line is tangent to SAC at point C. The firm charges CB price per unit for units of output OB. The total revenue of the firm is equal to the area OPCB. The total cost of the firm is also equal to the area OPCB. The firm earns only normal profits and continues operating

Short Run Equilibrium with Losses under Monopoly:

A monopolist also accepts short run losses provided the variable costs of the firm are fully covered. The loss minimizing short run equilibrium analysis is presented graphically.

FIG 1.2



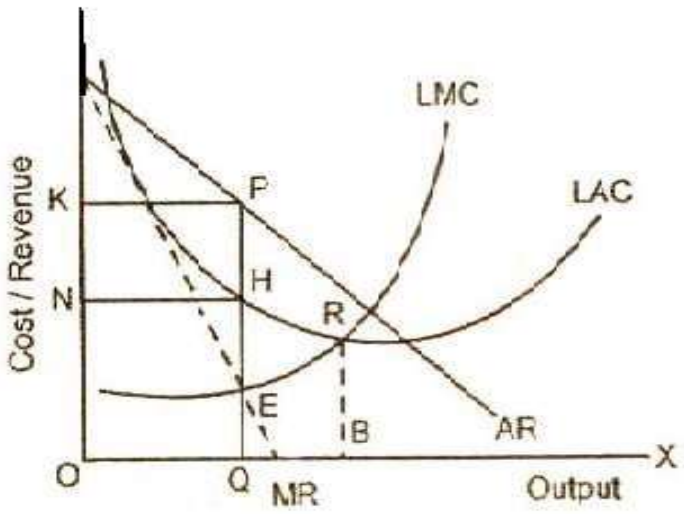
In this figure (1.2), the best short run level of output is OB units which is given by the point L where MC = MR. A monopolist sells OB units of output at price CB. The total revenue of the firm is equal to OBCF. The total cost of producing OB units is OBHE. The monopoly firm suffers a net loss equal to the area FCHE. If the firm ceases production, it then has to bear to total fixed cost equal to GKHE. The firm in the short run prefers to operate and reduces its losses to FCHE only. In the long, if the loss continues, the firm shall have to close down.

Long Run Equilibrium Under Monopoly:

The Monopolist blocks the entry of new firms into the industry by having control over the key materials needed for the production of goods or he may hold full rights to the production of a certain good (patent) or the market of the good may be limited. If new firms try to enter in the field, it lowers the price of the good to such extent, that it becomes unprofitable for new firms to continue production etc.

When there is no threat of the entry of new firms into the industry, the monopoly firm makes long run adjustments in the scale of plant. In case, the demand for the product is limited, the monopolist can afford to produce output at sub optimum scale. If the market size is large and permits to expand output, then the monopolist would build an optimum scale of plant and would produce goods at the minimum cost per unit. However, the monopolist would not stay in the business, if he makes losses in the long period. The long run equilibrium of a monopoly firm is now explained with the help of the following diagram.

FIG: 1.3



In the long run, all the factors of production including the size of the plant are variable. A monopoly firm will maximize profit at that level of output for which long run marginal cost (MC) is equal to marginal revenue (MR) and the LMC curve intersects the MR curve from below. In the figure (1.4), the monopoly firm is in equilibrium at point E where LMC = MR and LMC cuts MR curve from below. QP is the equilibrium price and OQ is the equilibrium output.

At OQ level of output, the cost per unit is QH (LAC), whereas the price per unit of the good is QP. HP represents the per unit super normal profit. The total super normal profit is equal to KPHN. It may here be noted that at the equilibrium output OQ, the plant is not being fully utilized. The long run average cost (LAC) is not minimum at this level of output OQ. The firm will build an optimum scale of plant only if the demand for the product increases.

Key characteristics

1. Monopolies can maintain super-normal profits in the long run. As a rule, profits are maximized when MC = MR. In general, the level of profit depends upon the degree ofcompetition in the market, which for a pure monopoly is zero. At profit maximization, MC = MR, and output is Q and price P. Given that price (AR) is above ATC at Q, supernormal profits are possible as Shown in the figure(1.4)as area(PABC).

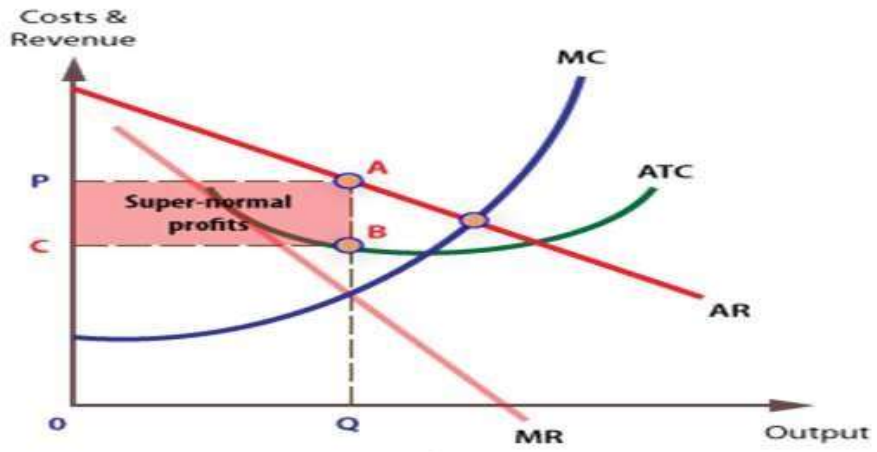


Figure 1.4

2. With no close substitutes, the monopolist can derive supernormal profits, area PABC.
3. A monopolist with no substitutes would be able to derive the greatest monopoly power.

Evaluation of monopolies (Advantages and disadvantages)

I. Monopolies can benefit from economies of scale, and may be Naturalmonopolies, so it may be argued that it is best for them to remain monopolies to avoid the wasteful duplication of infrastructure that would happen if new firms were encouraged to build their own infrastructure.

II. Monopolies can become dominant in their own territory and then penetrate overseas markets, earning country valuable revenue in the form of exports. This is certainly the case with Microsoft.

III. According to Austrian economist, joseph Schumpeter, inefficient firms, including monopolies, would eventually be replaced by more efficient and effective firms through a process called *creative destruction*.

IV. It is argued by some economists that monopoly power is required to generate dynamic efficiency, that is, technological progressiveness. This is because:

- ❖ High profit levels boost investment in R&D.
- ❖ Innovation is more likely with large enterprises and this innovation can lead to lower costs than in competitive markets.
- ❖ A firm needs a dominant position to bear the risks associated with innovation.
- ❖ Firms need to be able to protect their intellectual property by establishing barriers to entry; otherwise, there will be a free rider problem.
- ❖ Why spend large sums on R&D if ideas or designs are instantly copied by rivals who have not allocated funds to R&D?
- ❖ However, monopolies are protected from competition by barriers to entry and this will generate high levels of supernormal profits.
- ❖ If some of these profits are invested in new technology, costs are reduced via process innovation. This makes the monopolist's supply curve to the right of the industry supply curve. The result is lower price and higher output in the long run.

Disadvantages of monopoly

Monopolies can be criticised because of their potential negative effects on the consumer, including:

- ➢ Restricting output onto the market.
- ➢ Charging a higher price than in a more competitive market.
- ➢ Reducing consumer surplus and economic welfare.
- ➢ Restricting choice for consumers. ➢ Reducing consumer sovereignty.

Welfare costs of monopoly

The traditional view of monopoly stresses the costs to society associated with higher prices because of the lack of competition and power of monopolist to influence price and output. The monopolist can charge a higher price (P1) than in a more competitive market (at P) as shown in the figure (1.5). This monopoly power leads to loss of welfare in the form of loss of consumer'sand producer's surplus. The area of economic welfare under perfect competition is EFB. The loss of consumer surplus if the market is taken over by a monopoly is PP1AB. The new area of producer surplus, at the higher price P1, is EP1AC. Thus, the overall (net)

loss of economic welfare is area ABC.The area of deadweight loss for a monopolist can also be shown in a more simple form, comparing perfect competition with monopoly.

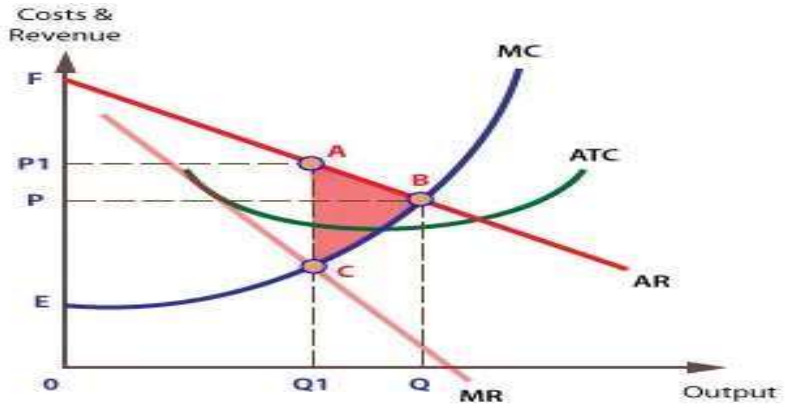


Figure 1.5

under monopoly the area of welfare is PFCB. Therefore, the deadweight loss is the area BCA The diagram (1.6) assumes that average cost is constant, and equal to marginal cost (ATC = MC).Under perfect competition, equilibrium price and output is at P and Q. If the market is controlled by a single firm, equilibrium for

the firm is where MC = MR, at P1 and Q1. Under perfect competition, the area representing economic welfare is PFAbut.

Figure 1.6

Note; Deadweight loss is the loss not compensated by any gain. It simply refers to economic waste. Under monopoly this waste occurs due to production less than social optimum.

Monopoly power

Economists generally consider any firm that can alter its price, through an adjustment in its output, to have some monopoly power. It also refers to the ability to charge price higher than MC. Many Economists have developed indexes to measure monopoly power among them the prominent indices are;

- Abba Lerner index.(Price- MC/Price) or (1-1/n) where —n‖ is the elasticity of demand
- Herfindahl index. HI = nv +1/n (n=no of firms, v= variance of the market share of a firm.

Price discrimination

Price discrimination is an act of selling the same product at different prices to different buyers. The costs of production is either same or differs, not as much as the difference in the charged prices (Stigler).This discrimination can occur between markets and individuals in the same market.

Price discriminationseems to be all pervasive. Some examples are here;

- Pricing of transport services by age—children and senior citizens are charged at lower rates for riding on buses or trains.
- Pricing of cinema hall tickets by time of day or day of the week.
- Pricing of books by different editions.
- Pricing of mobile services and internet services.
- Pricing according to frequency of purchase.

Price discrimination may be of various types. It may either be (i) personal (ii) trade discrimination (iii) local discrimination.

(1)Personal Price discrimination**.** It is personal, when separate price is charged from each buyer according to the intensity of his desire or according to the size of his pocket.

For instance**,** a doctor may charge Rs.20000 from a rich person for an eye operation and Rs.500 only from a poor man for the similar operation.

(2) Trade discrimination**.** It may take place when a monopolist charges different prices according to the uses to which the commodity is put. For example, an electricity company may charge low rate for electric current used in an industrial concern than for the electricity used for the domestic purpose.

(3) Place discrimination. It occurs when a monopolist charges different prices for the same commodity at different places. This type of discrimination is called dumping

Conditions for successful price discrimination.

Every firm would like to price discriminate, but may not able to do so. Different conditions are required to discriminate.

- The firm must possess some monopoly power, that is, the ability to set price or output.
- Ability to separate customer's into two or more groups. ➢ Ability to prevent arbitrage by buyers.

Different Degrees of Price Discrimination.

Pigou (1920) has classified price discrimination into different types. The basis for classification is the amount of the information available to a seller about potential buyers. He distinguished between first, second and third degree price discrimination.

- First degree price discrimination also called ‗perfect price discrimination' takes place when the seller has complete information about the demand curve of a buyer and appropriates the whole surplus. For example, two-part tariffs(membership fees for clubs plus the price of drinks and meals, monthly rentals for telephones plus call charges)
- The second degree price discrimination (non-linear pricing) occurs, when the seller knows the distribution of buyer types, but can't recognize them individually. For example quantity discounts.
- Finally third degree discrimination occurs when the seller can classify buyers into observable categories and relevant information about each category is available. In this case higher price is charged to that group which has a more inelastic demand.

Monopolistic Competition

The two extreme limits of market structure are, monopoly and perfect competition, In between; there are some important forms depending on the

degree of monopoly or competition or variation in some other characteristics monopolistic competition is one of them.

Monopolistic competition is a market situation where there are many sellers of differentiated products (Soaps, tooth pastes, electrical appliances, motor cycles etc.). In other words, it refers to competition among a large number of sellers producing close but not perfect substitute products. There are large numbers of small sellers, but no single seller has perceptible influence on the price and output policies of other sellers.

Characteristics of Monopolistic Competition

- Product differentiation.

Product differentiation is the most important characteristic of the monopolistic competition and makes this market structure different from the perfect competition, this also causes its own consequences for the product and performance of the sellers. If we look at the consumer goods industry we find different varieties of goods or different brands which are close(not perfect) substitutes for each other but their prices will not be identical, yet people will be buying them according to their brand preferences.

This product differentiation can be *real*, when the inherent characteristics of a product are different, or *fancied*, when the consumer is persuaded, via advertising or other selling activities (packing, design) that products are different. The effect of this differentiation and the brand preference

Preference of consumers gives the seller some degree of monopoly power in the determination of the price of his product for example the brand preference of consumers to Apple I Phones, Laptops, brand preference to Monty Carlo etc. the product differentiation also gives the rationale for selling activities.

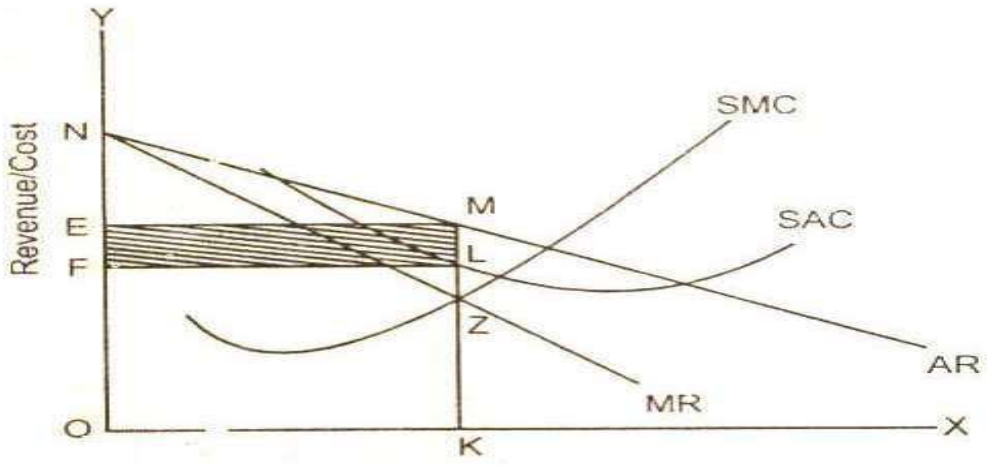
- Freedom of entry and exit of firms: The entry of new firms in the monopolistic competition is relatively easy. There are no barriers of the new firm to enter the product group or leave the industry in the long run.
- Non Price competition.Since the products are close substitutes each firm spends on advertising in order to create taste for his product among the consumers and increase the market share.

- Independent behavior. The economic impact of one firm's decision is spread sufficiently evenly across the entire group so that the effect of any single competitor goes unnoticed. This implies that competition is impersonal.
- The goal of the firm is profit maximization, both in the short run and long run

Firm's Equilibrium Price and Output:

The firm whether operating under perfect competition, or monopoly wants to maximize profits. In order to achieve this objective, it goes on producing a commodity so long as the marginal revenue is greater than marginal cost. When MR = MC, it is then in equilibrium and produces the best level of output. If a firm produces less than or more than the MR = MC output, it will then not be making maximum of profits.

In the short-run, a monopolistically competitive firm may be realizing abnormal profits or suffering losses. If it is earning profits, no new firms can enter the industry in the short-run. In case, it is suffering losses but covering full variable cost, the firm will continue operating so that the losses are minimized. If the full variable cost is not met, the firm will close down in the short-run. The short-run equilibrium with profits and short run equilibrium with losses of a monopolistically competitive firm are explained with the help of two separate



diagrams as under.

Figure 1.7

In the figure (1.7), the downward sloping demand curve (AR curve) is quite elastic. The MR curve lies below-the average revenue curve except at point N. The SMC curve which includes advertising and sales promotional costs is drawn in the usual fashion. The SMC curve cuts the MR curve from below at point Z. The firm produces and sells an output OK, as at this level of output MR = MC. The firm sells output OK at OE/KM per unit price. The total revenue of the firm is equal to the area OEMK, whereas the total cost of producing output OK is OFLK. The total profits of the firm are equal to the shaded rectangle FEML. The firm earns abnormal profits in the short run.

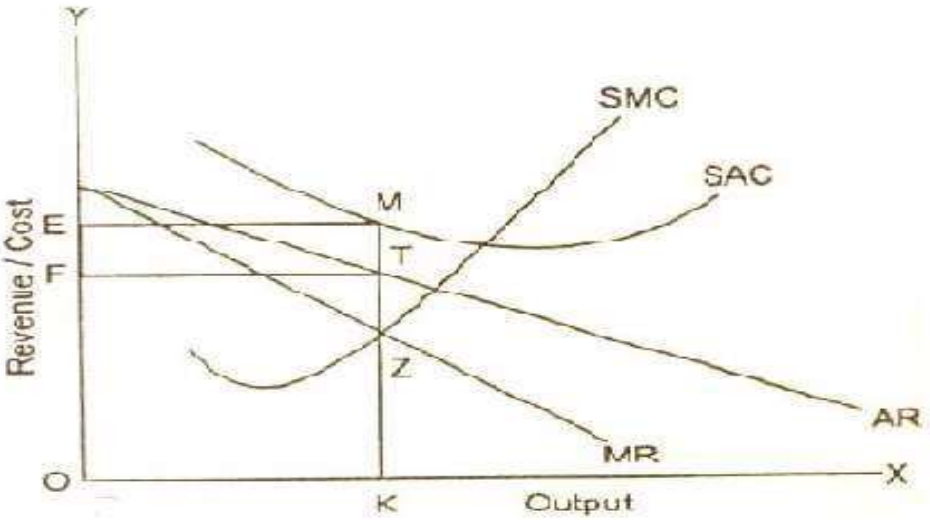
Short run losses

If the demand and cost situations are not favourable in the market, a monopolistically competitive firm may incur losses in the short-run. The short-run equilibrium of the firm with losses is explained with the help of a diagram. The diagram shows that marginal cost (SMC) equates marginal revenue MR curve from below at point Z. The firm produces output OK and sells at OF/KT per unit-price. The total receipt of the firm is OFTK. The total cost of producing output OK is equal to OEMK. The firm suffers a net loss equal to the area FEMT on the sale of OK output.

Fig.1.8

Equilibrium Price and Output in the Long Run Under Monopolistic Competition:

Long Run Zero Economic Profits:



In the long run, the firms are able to alter the scale of plant according to the changed conditions of demand for a product in the market. They can also leave or enter the industry. If the firms are earning abnormal profits in the short run, then new firm will enter the industry. The tendency of the new firms to enter the industry continues till the abnormal profits are competed away and the firms economic profits are zero. In case the monopolistically competitive firms realize losses in the short-run, then some of the firms will leave the industry. The exit of the firm continues till zero economic profits are restored with the operating firms.In the long-run, there are no entry barriers for the new firms. The incoming firms install latest machinery and try to differentiate their products from those of the established firms. The old firms operating with .the used machinery try to match up with the new entrants by improved variety of products in their group. They increase expenditure on advertisement and on other sales promotional measures. They employ more qualified staff for making technical improvement in their products. Since all the firms for their existence incur additional expenditure for improving the quality of the products, the cost curves of all the firms move up.

Due to entry of new firms in the industry and higher costs of production, the output of each competing firm is reduced. There is, therefore, a waste in the economic resources of the country. The equilibrium price and output in the long-run is explained with the help of a diagram given below.

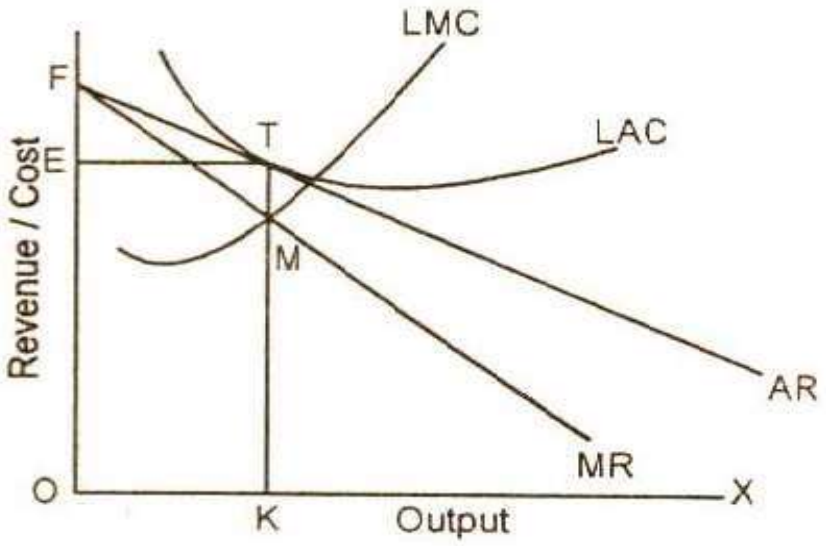


Fig.1.10

In the diagram, the higher shifted long-run marginal cost curve intersects the higher shifted marginal revenue curve at point M. The firm at this raised equilibrium point, produces the reduced level of output OK. It sells this output at price TK as at point T, LAC is a tangent to the demand or average revenue curve at its minimum point. The total revenue of the firm is equal to the area OETK. The total costs of the firm are also equal to the area OETK. The firm is earning only zero or normal economic profits. As the monopolistically competitive firm sets a price higher than that minimum average cost in the long-run,the firm therefore produces a smaller output. Since all the firms in the group produce less at higher price, there is, therefore, an apparent waste of resources and exploitation of the consumers.

Oligopoly Market

The term oligopoly means —few sellers‖ It is a market situation in which only few firms compete with one another._Few‖in this context, can be a number as small as 2 or as large as 10 or 15 firms. Oligopoly is also known as competition among the few. When there are a few sellers, each seller produces a significant portion of the total output of the Industry and his policies with regard to prices and output causes considerable effect on market conditions. When the product of the firms is homogenous it is called —pure oligopoly‖ and when the product is different, it is called differentiated oligopoly.

Examples of oligopolistic industries are;

Automobiles,Airlines, computers, petrochemicals, Electrical equipment‘s, etc.

Characteristics of oligopoly.

An oligopoly market has certain special characteristics which are not found in other forms of markets .these characteristics make it the most complicated form of market that is the reason that there is no generally accepted theory of pricing in this type of market.The important characteristics are briefly discussed below.

Mutual Interdependenceof firms:

Under oligopoly market firms are interdependent, that means a firms decision to set price or output is partly based on the strategic considerations regarding the behavior of its competitors. e.g. in the airline industry, the decision of a single airline to lower fares can set off a price war which brings down the fare charged by all its competitors.(provided that there is no collusion among the firms) a firm recognizes or has to recognize that the policies of its rival firms in regard to price, output, product, selling outlays, etc. are considerably influenced by its own policies in these matters.

Importance of selling and advertising costs.

In order to enlarge the market share or to safeguard against a decline in the market share firms have to take aggressive and defensive measures and one of them is the expenditure on advertising and sales promotion.

Indeterminateness of Demand curve:

The demand curve facing an individual producer under oligopoly is indeterminate because of the interdependence, any move by the seller to influence the price or output will cause unpredictable reactions and repercussions.so mostly prices remain relatively rigid under this market situation.

Difficult entry for new firms

Under oligopoly entry of new firms is difficult ,because of the strategic behavior by the existing firms, which is why the market is dominated by few players. There can be other reasons also, like high costs (production as well as selling)

Presence of competition: The feature of oligopolistic market is the presence of competition. There is life of constant struggle, rival against rival.

Group behavior:The theory of oligopoly is however is a theory of group behavior and not of a mass or individual. It does not appear to be valid to assume that it behaves in a manner so as to maximize profits. But how the group behaves and works are the questions to which economic theory have to settle the answers.

Oligopoly models

In order to explain the determination of price and output under oligopoly a large no of models have been formulated depending upon the varied assumptions made in regard to the behavior and the actionreaction pattern of rivals. Fallowing may be mentioned among the important models. (1) Classical models by Cournot, Bertrand, and Edgeworth (2) kinked demand curve model by P.M Sweezy (3) Collusive oligopoly model (4) price leadership model. Here we will discuss the Cournot model of oligopoly.

Cournot's model of limiting case of oligopoly (Duopoly)

Augustin Cournot (core-no) was born in 1801. In his book, Researches into the Mathematical Principles of the theory Wealth, has given the earliest model known as duopoly model (1838), Duopoly is a limiting case of oligolpoly.Induopoly only two firms operate in the market. He had made the following assumptions for developing his model of oligopoly.

1. Homogenous product (mineral water).
2. A Duopoly market (two firms only) and each firm taking the independent decision.
3. Large no of buyers.
4. Identical costs of production. Cournot has assumed zero costs of production for simplicity. But this assumption can berelaxed.
5. The goal of each duopolist is to maximize profit.
6. Both behave naively.

   The model can be presented in many ways but the original version is quite limited in that it is based on the assumption of identical products and identical costs.

   Cournot illustrates his model with the example of two firms each owing a spring of mineral water, produced at zero costs. The only decision each firm needs to make is how much to produce. The firms select their output simultaneously, non – cooperatively and with no knowledge of each other_s plan. Each firm assumes that the rival will keep its output fixed and decides its own profit maximizing level of output.We then seek the

equilibrium in forecasts- a situation where each firm finds its beliefs about the other firm to be confirmed.

The model begins by assuming that firm 1 expects that firm 2 will produce y* units of output (* refers to expected output).if firm 1 decides to produce y1 units of output, it expects that the total output produced will be Y= y1+ y* and the market price will be p(Y) = p (y1+ y*). The profit maximization problem of firm 1 is then max p(y1+y2*)y1-c(y1).

For any given belief about the output of firm 2, y2* there will be some optimal choice of output for firm 1, y1. Let us write this functional relationship b/w the expected output of firm 2 and the optimal choice of firm 1 as

$$Y1=f(y2^*)$$

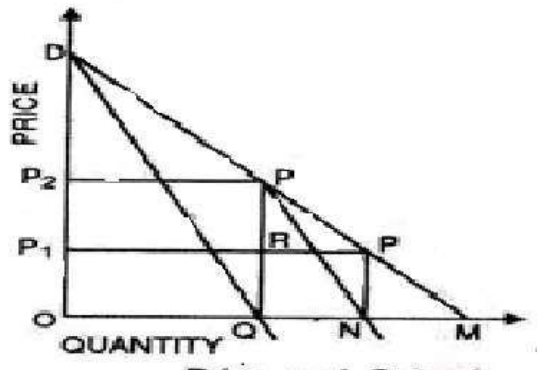
Similarly for the firm 2

$$Y2=f(y1^*)$$

The optimal combination of output levels is known as Cournot equilibrium. In Cournot equilibrium, each firm is maximizing its profits, given its belief about the others output choice and those beliefs are confirmed in equilibrium.

Let us assume that firm 1 produces quantity ‗OQ' (as shown in figure1.1) with demand curve DM and sells it at a price where profits are at a maximum, at this point MC=MR, if costs are zero as assumed by Cournot then maximum revenue= max profit. The second firm assumes (expects) that firm1will keep its output fixed (OQ)and considers that his demand curve is PM and produces output ½ of the quantity OQI.e. firm 2 produces half of the market not supplied by the firm1 i.e.firm 2 output is (1/2*1/2) =1/4 of the total market.

Fig1.11



Price and Output Determination under Duopoly Cournot's Model

Now firm 1 will expect that firm 2 will keep its output fixed and will supply ½ of the market not supplied by the firm 2. So the firm 2 will supply ½(1-1/4) = 3/8 of the total market. In the same manner firm 2 expects that the

rival will keep its output fixed and supplies ½ (1-3/8) = 5/16 of the total market. So the action reaction will continue till each firm produces 1/3 of the total output and together they supply 2/3 of the total market. If the two firms collude and form monopoly then they will supply ½ of the total output and price will be higher and so the profit. In Cournot model firms behave naively and never learn from their past mistakes. It leads to completion which drives the price down and low profits. Each firm supplies 1/3 of the market at a price lower than monopoly but higher than competitive price. At last, if there are n firms in the industry each firm will supply 1/(n+1) of the market, and the industry output supplied to the market will ben/(n+1)=1/(n+1).

Criticism of model

Cournot's behavioral assumption is naïve to the extent that it implies that firms continue to make wrong calculations about the competitor's behavior.

The assumption of zero costs of production is also unrealistic.

Price rigidity and the kinked demand curve

The most popular view about the oligopolistic market situation is the price rigidity (particularly downwards) and many reasons have been put forward by the oligopoly theorists regarding the rigidity. First one being the avoidance of the disastrous consequences of price war. Secondly, the oligopolists may collude and fix the agreed price to deter the entry. Thirdly an oligopolistic firm may attempt to maintain sales by intensifying its sales promotion activities and lastly to abide by the ruling price agreed by the firm.

Kinked demand curve was first used by Hall and Hitch to explain the price rigidity under oligopoly. But Paul.M Sweezy in 1939 made it an operational tool for the determination of the equilibrium in oligopolistic markets. He states that the oligopolist demand curve has a kink reflecting the fallowing pattern of behavior. If the firm reduces the price of his product the others will follow suit. If the firm increases the price the other firms will not fallow and his market share will come down.So the equilibrium of the firm will be defined by the point of kink and it is known as the kinked demand curve solution of oligopolistic market.it assumes that the rival firms follow a price cut policy but not a price increase policy.

This can be illustrated through a diagram drawn below;

In the figure $DD^{/}$ is a kinked demand curve. It is made up of two segments, DB and $BD^{/}$. The demand curve is kinked or has a bend at point B. The kink is formed at the prevailing market price level BM (10Rs per unit). The segment of the

demand curve above the prevailing price level (10Rs) is highly elastic and the segment of the demand curve

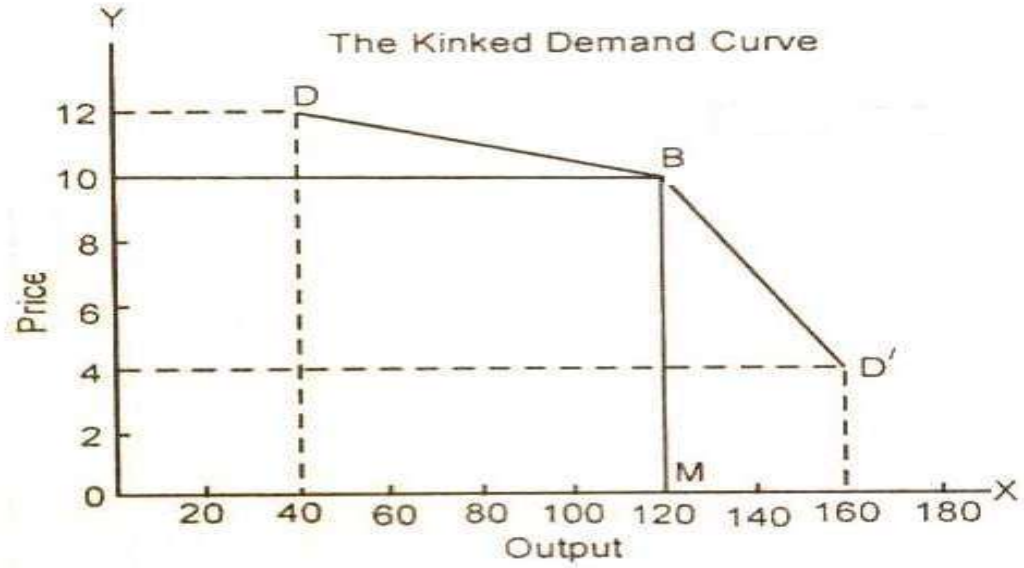


Fig.1.12

below the prevailing price level is fairly inelastic. This is explained in brief.

Explanation:

Price Increase**:** If an oligopolistic raises the price of his products from Rs10 per unit to 12 per unit, he loses a large part of the market and his sale comes down to 40 units from 120 units. There is a loss of 80 units in sale as most of his customers are now purchasing goods from his competitor firms who are selling the goods at Rs10 per units. So an increase in price above the prevailing level-shows that the demand curve to the left of and above point B is fairly elastic.

Price Reduction**:** If an oligopolistic reduces the prices of its goods below the prevailing price level BM (Rs10 per unit) for increasing his sales, his competitors will also match price changes so that their customers do not go away from them. Let us assume that Oligopolist has lowered the price to Rs4.0 per unit. Its competitors in the industry match the price cut. The sale of the oligopolist with a big price cut of Rs6.0 per unit has increased by only 40 units (160 - 120 = 40). The firm does not gain as the total revenue decreases with the price cut. The $BD^{/}$ portion of the demand curve which lies on the right side and below point B is fairly inelastic.

Rigid Prices. The firms in the oligopolist market 'have no incentive to raise or lower the prices of the goods. They prefer to sell the goods at the prevailing price level

due to reaction function. The price BM (Rs10 per unit) will, therefore, tend to remain stable or rigid, as every member of the oligopoly does not see any gain by lowering or raising the price of his goods.

Chamberlin_s Small- Group Model of Oligopoly

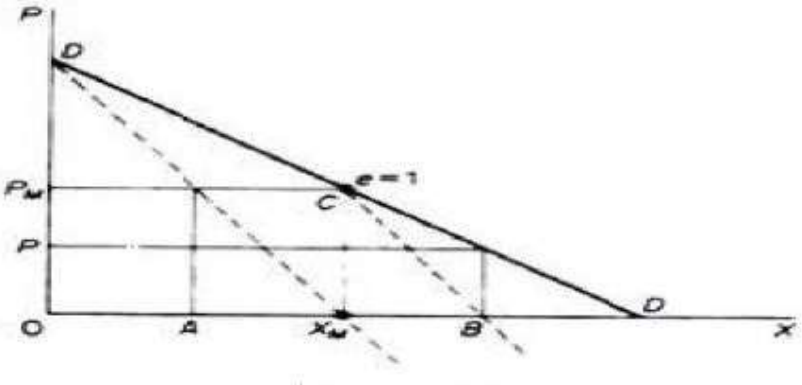
Chamberlin has contributed most to the theory of imperfect market studies, he has developed many models about the imperfect competition Chamberlin in his small group model suggests that a stable equilibrium canbe reached if the firms in oligopoly recognize their interdependence and maximize the industry profit. Chamberlin accepts that if the oligopolists act independently, then their decisions will not materialize and they will reach Cournot solution.

Chamberlin further assumes that firms are not naïve as assumed by Cournot. When firms change their output or price they do recognize the consequences of their decisions.Recognition of interdependence of firms in an oligopolistic market gives a result quite different from Cournot. Chamberlin argues that firms are aware of the fact that their output or price decision will definitely invite reactions of other firms.He assumes no price war in oligopoly.

According to Chamberlin, recognition of possible aggressive reactions to firm‘s price or output manipulations would avert price or quantity competition amongst the firms and would lead to stable equilibrium with monopoly price and output.

Chamberlin‘s model can best be understood if presented in a duopoly market. Initially Chamberlin‘s model is the same as Cournot‘s. The market demand is a straight line with negative slope, and production is assumed costless for simplicity (figure 1.13). If firm A is the first to start production it will produce the profit-maximizing output $0X_M$ and sell it at the monopoly price PM

FIG 1.13



Firm B,under the Cournot assumption that the rival A will retain his quantity unchanged, considers that its demand curve is CD and will attempt to maximize its profit by producing one-half of this demand, that is, quantity X_MB (at which B's MR = MC = 0). As a consequence the total industry output is OB and the price falls to P. Now firm A realizes that its rival does in fact react to its actions, and taking that into account decides to reduce its output to 0A which is one-half of $0X_M$ and equal to B's output.

The industry output is thus $0X_M$ and price rises to the monopoly level $0P_M$. Firm B realizes that this is the best for both of them and so will keep its output the same at $X_MB = AX_M$. Thus, by recognizing their interdependence the firms reach the monopoly solution. Under the assumption of our example of equal costs (that is, costs = 0) the market will be shared equally between A and B (clearly $0A = AX_M$).

Chamberlin's model is an advance over the previous models in that it assumes that the firms are sophisticated enough to realize their interdependence, and that it leads to a stable equilibrium, which is the monopoly solution.

Chamberlains model is criticised on the ground that it is a closed model and if entry is allowed then stability will be uncertain.
Refrences:

OR

Monopoly – Profit Maximization and equilibrium:

Short and Long Run Analysis.

Introduction:

In the theory of monopoly the shapes of the cost curves are the same as in the theory of pure competition. The AVC, MC and ATC are U-shaped, while the AFC is a rectangular hyperbola. However, the particular shape of the cost curves does not make any difference

to the determination of the equilibrium of the firm, provided that the slope of the MC is greater than the slope of the MR curve.

Here, MC curve is not the supply curve of the monopolist, as is the case in pure competition. In monopoly there is no unique relation-ship between price and the quantity supplied.

Equilibrium of the Monopolist Short-run Equilibrium

The monopolist maximizes his short-run profits if the following two conditions are fulfilled: Firstly, the MC is equal to the MR. Secondly, the slope of MC is greater than the slope of the MR at the point of intersection.

In ***figure 1*** the equilibrium of the monopolist is defined by point €, at which the MC intersects the MR curve from below. Thus both conditions for equilibrium are fulfilled. Price is P_m and the quantity is X_m. The monopolist realizes excess profits equal to the shaded area AP_m CB. Note that the price is higher than the MR.

In pure competition the firm is a price-taker, so that its only decision is output determination. The monopolist is faced by two decisions: setting his price and his output. However, given the downward-sloping demand curve, the two decisions are interdependent. The monopolist will either set his price or sell the amount that the market will take at it, or he will produce the output defined by the intersection of MC and MR, which will be sold at the corresponding price, P. The monopolist cannot decide independently both the quantity and the price at which he wants to sell it. The crucial condition for the maximization of the monopolist's profit is the equality of his MC and the MR, provided that the MC cuts the MR from below. Given the demand function

X = g (P)

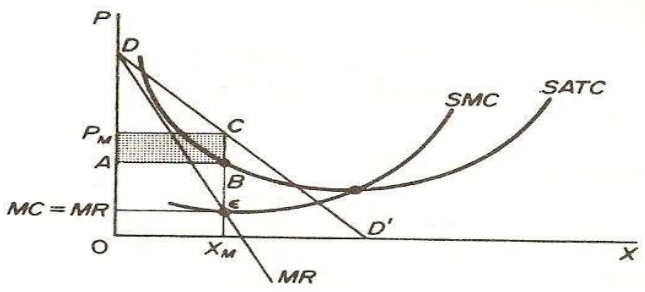


Fig: 1

Which may be the cost function for P

$P = f_1 (X)$

and, given the cost function

$C = f_2 (X)$

The monopolist aims at the maximization of his profit

$\Pi = R - C$

a) The first-order condition for maximum profit π

$$\frac{\partial \pi}{\partial X} = 0$$

$$\frac{\partial \pi}{\partial X} = \frac{\partial R}{\partial X} - \frac{\partial C}{\partial X} = 0$$

or

$$\frac{\partial R}{\partial X} = \frac{\partial C}{\partial X}$$

That is MR = MC

b) The second-order condition for maximum profit

$$\frac{\partial^2 \pi}{\partial X^2} < 0$$

$$\frac{\partial^2 \pi}{\partial X^2} = \frac{\partial^2 R}{\partial X^2} - \frac{\partial^2 C}{\partial X^2} < 0$$

Or

$$\frac{\partial^2 R}{\partial X^2} < \frac{\partial^2 C}{\partial X^2}$$

That is

Slope of MR < slope of MC

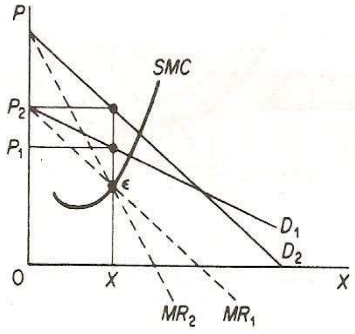


Fig: 2

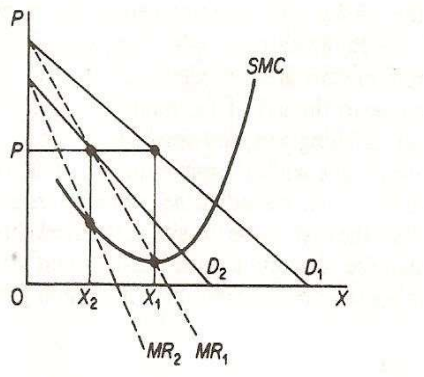


Fig: 3

We may now re-examine the statement that there is no unique supply curve for the monopolist derived from his MC. Given his MC, the same quantity may be offered at different prices depending on the price elasticity of demand. Graphically this is shown in ***figure 2*** the quantity X will be sold at price P_1 if demand is D_1, while the same quantity X will be sold at price P_2 if demand is D_2. Thus there is no unique relationship between price and quantity. Similarly, given the MC of the monopolist, various quantities may be supplied at any one price, depending on the market demand and the corresponding MR curve. ***In figure 3*** we depict such a situation. The cost conditions are represented by the MC curve. Given the costs of the monopolist, he would supply $0X_1$, if the market demand is D_1, while at the same price, P, he would supply only $0X_2$ if the market demand is D_2.

LONG-RUN EQUILIBRIUM

The monopolist in the long run has the time to expand his plant, or to use his existing plant at any level which will maximize his profit. However, it is not necessary for the monopolist to reach an optimal scale. Neither is there any guarantee that he will use his existing plant at optimum capacity. What is certain is that the monopolist will not stay in business if he makes losses in the long run. He will most probably continue to earn supernormal profits even in the long run, given that entry is barred. However, the size of his plant and the degree of utilization of any given plant size depend entirely on the market demand. He may reach the optimal scale (minimum point of LAC) or remain at suboptimal scale (falling part of his LAC) or surpass the optimal scale (expand beyond the minimum LAC) depending on the market conditions***. In figure 4*** we depict the case in which the market size does not permit the monopolist to expand to the minimum point of LAC. In this case not only is his plant of suboptimal size (in the sense that the full economies of scale are not

exhausted) but also the existing plant is under-utilized. This is because to the left of the minimum point of the LAC and SRAC is tangent to the LAC at its falling part, and also because the short-run MC must be equal to the LRMC.

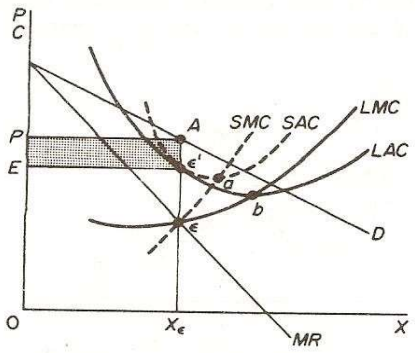


Fig: 4 *Monopolist with suboptimal plant and excess capacity.*

This occurs at ε, while the minimum LAC is at b and the optimal use of the existing plant is at a. since it is utilized at the level ε', there is excess capacity. ***In figure 5*** we depict the case where the size of the market is so large that the monopolist, in order to maximize his output, must build a plant larger than the optimal and over utilize it. This is because to the right of the minimum point of LAC the SRAC and the LAC are tangent at a point of their positive slope, and also because the SRMC must be equal to the LAC. Thus the plant that maximizes the monopolist's profits leads to higher costs for two reasons: firstly because it is larger than the optimal size, and secondly because it is over utilized. This is often the case with public utility companies operating at national level.

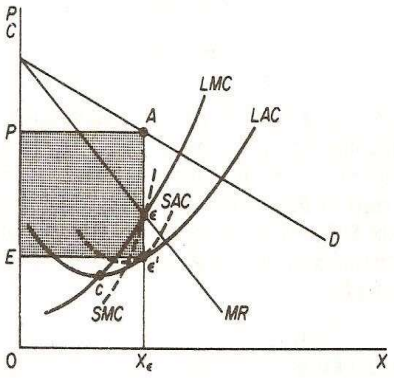


Fig: 5 *monopolist operating in the large market: his plant is larger than the optimal (€) and it is being over utilised (at €')*

Finally in ***figure 6*** we show the case in which the market size is just large enough to permit the monopolist to build the optimal plant and use it at full capacity.

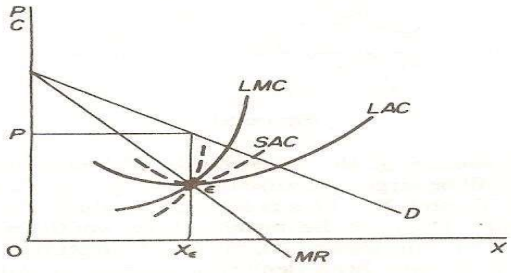


Fig: 6

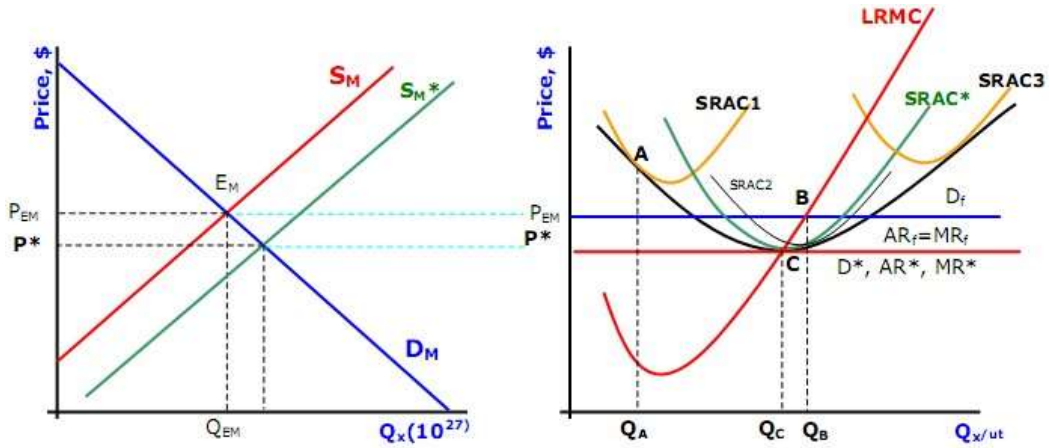
It should be clear that which of the above situations will emerge in any particular case depends on the size of the market. There is no certainty that in the long run the monopolist will reach the optimal scale, as is the case in a purely competitive market. In monopoly there are no market forces similar to those in pure competition which lead the firms to operate at optimum plat size (and utilize it at its full capacity) in the long run.

Perfect Competition – Profit Maximization and equilibrium in the Long Run, Shifts in the Market Demand.

Profits in Long Run Pure Competition

In the long run, producers are able to alter their scale of plant. The LRAC or envelope curve was constructed from a series of short run periods with different plant sizes. In the long run the firm is essentially able to select the scale of plant (or a specific set short run production and cost functions associated with a specific fixed (in the short run) input). This essentially the meaning of "relative ease of exit and entry from the market.

Another crucial aspect of long run pure competition is that the demand faced by the firm is perfectly elastic at the market price. The AR and MR functions coincide with the firm's demand function. Because the firm's demand function is perfectly elastic, they cannot raise their price above the market price. If they do, their sales will fall to 0. There is no reason to lower their price below the market price because they can sell all they want to at the market price. The firms in pure competition have no "market power." Market power, in microeconomics, refers to the ability of an agent to raise the price and not have their sales fall to 0. A quick review of price elasticity suggests that market power is influenced by a firm's demand function. Purely competitive firms are price takers. These firms have no incentive to advertise. The largest producer in a purely competitive market can sell all they can produce or none at all and the market price will be unaltered.



Panel A **Panel B**

(Market) **(firm)**

Figure 1

In Figure 1 The market demand and supply functions (in Panel A) are initially DM and SM. Given the demand and supply functions, the market equilibrium is at point EM resulting in an equilibrium price (PEM) and quantity (QEM). When the market price is PEM, the firm reacts to that price (The firm is a price taker.). If the firm's objective is to maximize profits, it will operate at the point where MR = MC. This equality of MR and MC occurs at point at Point B in panel B. Note that the short run MC will lie to the right of the LRMC at this point, so short run output would be greater. The firm will select plant size SRAC2 since it will minimize the cost per unit at that output level (QB). This SRAC2 is not the most efficient size

plant (SRAC*). The AR is greater than the AC at this point. The firm can earn "economic profits" under these conditions. Remember "normal profits" are included in the cost functions. Since entry is relatively free, other entrepreneurs will desire to capture some of these economic profits and enter the industry. The supply function will increase (shift to the right) causing the equilibrium price to fall from PEM to P*. The equilibrium quantity in the market rises but there are more firms. The firm represented in Panel B must adjust to the lower market price, P*.The new demand and revenue functions faced by the firm is D*, AR* and MR*.MR* = MC at point C. The firm reduces output to QC and adjusts plant size to SRAC*.

Thus the firm now is operating where:

- the plant that has allows the lowest cost per unit (most efficient size plant),
- they operate that plant at the level of output that has the lowest cost per unit,
- they earn a normal profit,
- they are maximizing their profits given circumstances (They have no incentive to change output or plant size, they are in equilibrium.), .

ALSO thee price is equal to the MC (This is the condition to optimize the welfare of the individuals in society given the income distribution.)

The process of long run equilibrium in pure competition can be shown in Figure 1. Both the market and an individual firm's demand and cost (supply) functions are shown. In Figure 1 it is apparent that a market price below P* would result in the firm's AC exceeding the AR at all levels. If this were the case firms would earn less than normal profits and would have an incentive to leave the market. As firms leave the market, the market supply decreases (shifts to the left) and the market price would rise. There are two important features in pure competition. First each firm is a price taker and has no market power. The demand function faced by the firm is perfectly elastic at the equilibrium price established in the market. This is because the output of the purely competitive firms is homogeneous and there are a large number of sellers, none of whom can influence the market price. Secondly, entry and exit from the market is relatively free. Above normal profits attract new producer/seller that increases the market supply driving the market price down. If profits are below normal, firms exit the market. This reduces the market supply and drives the price up. Long run equilibrium in a purely competitive market is established when the D (AR and MR) is just tangent to the long run average cost function (LRAC). This will be at the minimum of the LRAC where its slope is 0 (the demand function faced by the firm has a slope of 0). Firm earn normal profits at this point and there is no incentive to enter or leave the market. There is no incentive to alter plant size or change the output level. At the point of long run equilibrium in Figure VII.6 at point C, the following conditions will exist:

- AR = AC; Firms earn a normal profit. There is no incentive for firms to enter or leave the market.

- LRMC = LRAC; the firm is operating with the plant size that results in the lowest cost per unit,

i.e. the fewest resources per unit of output are used.

- MR =LRMC; the firm has no incentive to alter output or plant size.

- P = MR =MC; the price reflects the marginal value of the good to the buyers and the marginal cost to the producer/seller.

Long run equilibrium in pure competition results in an optimal allocation of resources. The price reflects the marginal benefits of the buyers and the marginal cost of production. The user of the last unit of the good places a value (the price they are willing and able to pay) on the good equal to the cost of producing that unit of the good. Units of the good between 0 and the equilibrium quantity have a greater value than the cost of production. The purely competitive model provides a benchmark or criteria to evaluate the performance of a market; MB = P = MC. The marginal benefit (MB) to the buyer is suggested by the price they are willing and able to pay. The MB to the seller is the marginal revenue (MR) they earn. The marginal cost (MC) reflects the opportunity cost to society.

Price discrimination by a Monopolist.

Introduction:

Price discrimination involves selling different units of the same good at different prices, either to the same or different consumers. *Most businesses charge different prices to different groups of consumers for what is more or less the same good or service. This is price discrimination or yield management and it has become widespread in nearly every market.*

Price discrimination can only be a feature of monopolistic and oligopolistic markets, where market power can be exercised. Otherwise, the moment the seller tries to sell the same good at different prices, the buyer at the lower price can arbitrage by selling to the consumer buying at the higher price but with a tiny discount. However, product heterogeneity, market frictions or high fixed costs can allow for some degree of differential pricing to different consumers, even in fully competitive retail or industrial markets. Price discrimination also occurs when the same price is charged to customers which have different supply costs.

The effects of price discrimination on social efficiency are unclear; typically such behavior leads to lower prices for some consumers and higher prices for others. Output can be expanded when price discrimination is very efficient, but output can also decline when discrimination is more effective at extracting surplus from high-valued users than expanding sales to low valued users. Even if output remains constant, price discrimination can reduce efficiency by misallocating output among consumers.

In order for price discrimination to be a viable strategy for the firm, it must have the ability to sort consumers and to prevent resale. Preventing resale is generally not a severe problem, and most of the difficulties associated with price discrimination are concerned with sorting the consumers. The easiest case is where the firm can explicitly sort consumers with respect to some exogenous category

First-degree price discrimination involves the seller charging a different price for each unit of the good in such a way that the price charged for each unit is equal to the maximum willingness-to-pay for that unit. This is also known as perfect price discrimination**.**

Second-degree Price discrimination occurs when prices differ depending on the number of units of the good bought, but not, across consumers. This phenomenon is also known as nonlinear pricing. Each consumer faces the same price schedule, but the schedule involves different prices for different amounts of the good purchased. Quantity discount is the obvious examples.

Third-degree price discrimination means that different purchasers are charged different prices, but each purchaser pays a constant amount for each unit of the good bought. This is perhaps the most common form of price discrimination; examples are student discounts, or charging different prices on different days of the week.

We will investigate these three forms of price discrimination in the context of a very simple model. Suppose that there are two potential consumers with utility functions $\mu_i(x) + y$, for I = 1,

2. For simplicity, normalize utility so that $\mu_i(0) = 0$. Consumer ï’s maximum willingness-to for some consumption level x will be denoted by $r_i(x)$. It is the solution to the equation $\mu_i(0) + y = \mu_I(x) + y$

The left-hand side of the equation gives the utility from zero consumption of the good, and the right-hand side gives the utility from consuming x units and paying a price r_I (x). By virtue of our normalization, r_i (x).

Another useful function associated with the utility function is the marginal willingness-topay function, function, i.e., the (inverse) demand function. This function measures what the perunit price would have to be to induce the consumer to demand x units of the consumption good. If the consumer faces a per-unit price p and chooses the optimal level of consumption, he or she must solve the utility maximization problem

$$\text{Max } \mu_i (x) + y$$

$$\text{Such that } px + y = m$$

As we have seen several times, the first-order condition for this problem is

$$P = \mu_i (x) \qquad \ldots\ldots (1)$$

Hence, the inverse demand function is given explicitly by (1): the price necessary to induce consumer ï to choose consumption level x is $p = p_i (x) = \mu_i (x)$.

We will suppose that the maximum willingness-to-pay for the good by consumer 2 always exceeds the maximum willingness-to-pay by consumer 1; i.e., that

$$\mu_2 (x) > \mu_1 (x) \text{ for all } x \ldots\ldots\ldots (2)$$

We will also generally suppose that the marginal willingness-to-pay for the good by consumer 2 exceeds the marginal willingness-to-pay by consumer 1; i.e., that

$$\mu_2' (x) > \mu_1' (x) \text{ for all } x \qquad \ldots\ldots (3)$$

Thus it is natural to refer to consumer 2 as the high demand consumer and consumer 1 as the low demand consumer.

We will suppose that there is a single seller of the good in question who can produce it at a constant marginal cost of c per unit. Thus the cost function of the monopolist is $c (x) = cx$.

First-degree price discrimination

Suppose for the moment that there is only one agent, so that we can drop the subscript distinguishing the agents. A monopolist wants to offer the agent some price and

output combination (r^*, x^*) that yields the maximum profits for the monopolist. The price r^* is a take-itor-leave-it price-the consumer can either pay r^* and consume x^*, or consume zero units of the good.

The profit maximization problem of the monopolist is

$$\max r - cx$$

$$\text{Such that } \mu(x) \geq r.$$

The constraint simply indicates that the consumer must get nonnegative surplus from his consumption of the x-good. Since the monopolist wants r to be as large as possible, this constraint will be satisfied as equality.

Substituting from the constraint and differentiating, we find the first order condition determining the optimal level of production to be

$$\mu'(x^*) = c \qquad \ldots\ldots (4)$$

Given this level of production, the take-it-or—leave-it price is

$$r^* = \mu(x^*)$$

There are several points worth noting about this solution. First, the monopolist will choose to produce a pareto efficient level of output-a level of output where the marginal willingness-topay equals marginal cost. However, the producer will also manage to capture all the benefits from this efficient level of production-it will achieve the maximum possible profits, while the consumer is indifferent to consuming the product or not.

Second, the monopolist in this market produces the same level of output as would a completive industry. A competitive industry will produce where price equals marginal cost and supply equals demand. Together these two conditions imply that p(x) = c, the gains from trade are divided much differently in the competitive equilibrium, in this case, the consumer gets utility $\mu(x^*)$ and the firm gets zero profits.

Third, the same outcome can be achieved if the monopolist sells each unit of output to the consumer at a different price. Suppose, for example, that the firm breaks up the output into n pieces of size Δx, so that $x = n\Delta x$. Then the willingness-to-pay for the first unit of consumption will be given by

$$\mu(0) + m = \square(\square x) + m - p_1$$

or

$$\mu(0) + \mu(\square x) - p_1$$

Similarly, the marginal willingness-to-pay for the second unit, of consumption is

$$\mu(\square x) = \mu(2\square x) - p_3$$

Proceeding this way up to then n units, we have the sequence of equations,

$$\mu(0) = \mu(\square x) - p_1$$

$$\mu(\square x) = \mu(2\square x) - p_2$$

$$\mu((n-1)\square x) = \mu(x) - p_n$$ Adding up these n equations and using the normalization that $\mu(0) = 0$, we have $\sum_{i=1}^{n} pn = \mu(x)$. That is the sum of the marginal willingness-to-pay must equal the total willingness-to-pay. So it doesn't matter how the firm price discriminates: making a single take-itor-leave it offer, or selling each unit of the good at the marginal willingness-to-pay for that unit.

Second-degree price discrimination

Second-degree price discrimination is also known as nonlinear pricing. This involves such practices as quantity discounts, where the revenue a firm collects is a nonlinear function of the amount purchased. In this section we will analyze a simple problem of this type.

There are two consumers with utility functions $\mu_1(x_1) + y_1$ and $\mu_2(x_2) + y_2$, where we assume that $\mu_2(x) > \mu_1(x)$ and $\mu_2(x) > \mu_1(x)$. We refer to consumer 2 as the high-demand consumer and consumer 1 as the low-demand consumer. The assumption that the consumer with the larger total willingness-to-pay also has the larger marginal willingness-to-pay is sometimes known as the single crossing property since it implies that any two indifference curves for the agents can intersect at most once.

Suppose that the monopolist chooses some (nonlinear) function (x) that indicates how much it will charge if x units are demanded. Suppose that consumer *i* demands x_1 units

and spends $r_i = p(x_i)\, x_i$ dollars. From the viewpoint of both the consumer and the monopolist all that is relevant is that the consumer spends r_i dollars and receives x_i units of output. Hence, the choice of the function p(x) reduces to the choice of (r_i, x_i) consumer 1 will choose (r_i, x_i) and consumer 2 will choose (r_2, x_2).

The constraints facing the monopolist are as follows. First, each consumer must want to consume the amount --- and be willing to pay the price r_i:

$$\mu_1(x_1) - r_1 \geq 0$$

$$\mu_2(x_2) - r_2 \geq 0$$

This simply says that each consumer must do at least as well consuming the x-good as not consuming it. Second, each consumer must prefer his consumption of the other consumer.

$$\mu_1(x_1) - r_1 \geq \mu_1(x_2) - r_2$$

$$\mu_2(x_2) - r_2 \geq \mu_2(x_1) - r_2$$

These are the so-called self-selection constraints. If the plan (x_1, x_2) is to be feasible in the sense that it will be voluntarily chosen by the consumers, then each consumer must prefer consuming the bundle intended for him as compared to consuming the other person's bundle.

Rearrange the inequalities in the above paragraph as

$$r_1 \square\square \mu_1(x_1) \qquad \ldots\ldots\ldots (5)$$

$$r_1 \square\square \mu_1(x_1) - \mu_1(x_2) + r_2 \qquad \ldots\ldots\ldots (6)$$

$$r_2 \square \mu_2(x_2) \qquad \ldots\ldots\ldots (7)$$

$$r2 \square \mu 2(x2) - \mu 2(x1) + r1 \qquad \ldots\ldots\ldots (8)$$

Of course, the monopolist wants to choose r_1 and r_2 to be as large as possible. It follows that in general one of the first two inequalities will be binding and one of the second two inequalities will be binding. It turns out that the assumptions that $\mu_2(x) > \mu_1(x)$ and $\mu_2(x) > \mu_1(x)$ are sufficient to determine which constraints will bind, as we now demonstrate.

To begin with, suppose that (7) is binding. Then (8) implies that

$$r_2 \square r_2 - \mu_2(x_1) + r_1$$

Or

$$\mu_2(x_1) \square r_1$$

Using (2) we can write

$$\mu_1(x_1) < \mu_2(x_1) \square r_1$$

which contradicts (5). It follows that (7) is not binding and that (8) is binding, a fact which we note for future use:

$$r_2 = \mu_2(x_2) - \mu_2(x_1) + r_1 \qquad \ldots\ldots (9)$$

Now consider (4.65) and (4.66). If (4.67) were binding, we would have

$$r_1 = \mu_1(x_1) - \mu_1(x_2) + r_2$$

Substitute from (9) to find

$$r_1 = \mu_1(x_1) - \mu_1(x_2) + \mu_2(x_2) - \mu_2(x_1) + r_1$$

Which implies $\mu_2(x_2) - \mu_2(x_1)$

$= \mu_1(x_2) - \mu_1(x_1)$

We can rewrite this expression as

$$\int_{x1}^{x2} \mu'1\,(\mathrm{t})\,dt \;=\; \int_{x1}^{x2} \mu'2\,(t)\,\mathrm{dt}$$

However, this violates the assumption that $\mu_2(x) > \mu_1(x)$. It follows that (4.66) is not binding and that (4.65) is binding, so

$$r_1 = \mu_1(x_1) \qquad \ldots\ldots. (9a)$$

Equations (9) and (9a) imply that the low-demand consumer will be charged his maximum willingness-to-pay, and the high-demand consumer will be charged the highest price that will just induce him to consume x_2 rather than x_1.

The profit function of the monopolist is

$$\pi = \{r_1 - cx_1\} + \{r_1 - cx_2\}$$

Which upon substitution for r_1 and r_2 becomes

$$\pi = \{\mu_1(x_1) - cx_1\} + \{\mu_2(x_2) - \mu_2(x_1) - cx_2\}$$

This expression is to be maximized with respect to x_1 and x_2. Differentiating, we have

$$\mu'_1(x_1) - c + \mu_1'(x_1) - \mu_2'(x_1) = 0 \qquad \ldots\ldots \text{(9b)}$$

$$\mu_2'(x_2) - c = 0 \quad \ldots\ldots \text{(9c)}$$

Equation (9b) can be rearranged to give

$$\mu_1'(x_1) = c + \{\mu_2(x_1) - \mu_1(x_1)\} > c_1 \qquad \ldots. \text{(9d)}$$

which implies that the low-demand consumer has a (marginal) value for the good that exceeds marginal cost. Hence he consumer and inefficiently small amount of the good Equation (9c) says that at the optimal nonlinear prices, the high-demand consumer has a marginal willingness-to-pay which is equal to marginal cost. Thus he consumes the socially correct amount.

Note that if the single-crossing property were not satisfied, then the bracketed term in (9d) would be negative and the low-demand consumer would consume a larger amount than he would at the efficient point. This can happen, but it is admittedly rather peculiar.

The result that the consumer with the highest demand pays marginal cost is very general. If the consumer with the highest demand pays a price in excess of marginal cost, the monopolist could lower the price charged to that largest consumer by a small amount, inducing him to buy more. Since price still exceeds marginal cost, the monopolist would make a profit on these sales.

Furthermore, such a policy wouldn't affect the monopolist's profits from any other consumers, since they are all optimized at lower values of consumption.

Third-degree price discrimination

Third-degree price discrimination occurs when consumers are charged different prices, but each consumer faces a constant price for all units of output purchased, this is probably the most common form of price discrimination.

Here we took up a case where there are two separate markets, where the firm can easily enforce the division. An example would be discrimination by age, such as youth discounts at the movies if we let $p_i(x_i)$ be the inverse demand function for group *i,* and suppose that there are two groups, then the monopolist's profit maximization problem is

$$\max p_1(x_1)\,x_1 + p_2(x_2)\,x_2 - cx_1 - cx_2.$$

The first-order conditions for this problem are

$$p_1(x_1) + p_1(x_1)\,x_1 = c$$

$$p_2(x_2) + p_2(x_2)\,x_2 = c$$

Let £$_i$ be the elasticity of demand in market *i*, we can write these expressions as

$$p^{1}(x_1)\left[1 - \frac{1}{\in 1}\right] = c$$

$$p^{2}(x_2)\left[1 - \frac{1}{\in 2}\right] = c$$

It follows that $p_1(x_1) > p_2(x_2)$ if and only if $|\in 1| < |\in 2|$. Hence, the market with the more elastic demand-the market that is more price sensitive-is charged the lower price.

Suppose now that the monopolist is unable to separate the markets as cleanly as assumed, so that the price charged in one market influences the demand in another market. For example, consider a theater that has a bargain night on Monday; the lower price on Monday would presumably influence demand on Tuesday to some degree.

In this case the profit maximization problem of the firm is

$$\max p_1(x_1, x_2)x_1 + p_2(x_1, x_2)x_2 - cx_1 - cx_2,$$

and the first-order conditions become

$$p_1 + \frac{\partial p1}{\partial x1}\,x_1 + + \frac{\partial p2}{\partial x1}\,x_2 = c$$

$$p_2 + \frac{\partial p2}{\partial x2} x_2$$

$$+ + \frac{\partial p1}{\partial x2} x_1 = c$$

We can rearrange these conditions to give

$$p^{1}\left[1 - \frac{1}{\epsilon 1}\right] + \frac{\partial p2}{\partial x1} x_2 = c$$

$$p_2 \left[1 - \frac{1}{\epsilon 2}\right] + \frac{\partial p1}{\partial x2} x_1 = c$$

Since we are assuming quasilinear utility, it follows that $\partial p_1/\partial p_2 = \partial p_2/\partial x_1$; i.e., the cross-price effects are symmetric. Subtracting the second equation from the first and rearranging, we have

$$p] \frac{\partial p2}{\partial x1} {}_{1}\left[1 - \frac{1}{\epsilon 1}\right] - p_2 \left[1 - \frac{1}{\epsilon 2}\right] = [x1 - x2$$

It is natural to suppose that the two goods are substitutes-after all they are the same good being sold to different groups-so that $\partial p_2/\partial x_1 = 0$.

Without loss or generality, assume that $x_1 > x_2$ which, by the equation immediately above, implies that

$$p^{1}\left[1 - \frac{1}{\epsilon 1}\right] - p_2 \left[1 - \frac{1}{\epsilon 2}\right] > 0.$$

Rearranging, we have

$$p \quad \frac{}{p2} \quad 1 > \frac{1-1/|\epsilon 2|}{1-1/|\epsilon 1|}$$

It follows from this expression that if $|\epsilon 2| > |\epsilon 1|$ we must have $p_1 > p_2$. That is, if the smaller market has the more elastic demand, it must have the lower price. Thus, the intuition of the separate makes carries over to the more general case under these additional assumptions.

Unit II:

Consumer and Price Theory

CONCEPT OF WELFARE- INDIVIDUAL AND SOCIAL WELFARE:

Concept of Welfare:

To apply economics beneficially in government policies and to solve social issues we need some guidelines or criteria. Most practical policy problems are not simple enough to allow easy answers. For example, if a change will increase the national income but make it more unequally distributed, is it desirable? If a policy will make certain groups of people better off and others worse off, should it be adopted? Should government revenue be raised more by direct or by indirect taxes? Should we go for freer trade even if that will lead to the collapse of some industries? Is globalization desirable? Should we tax or regulate pollution? To what extent should we strike a balance between our scarce natural resources and our economic growth?The branch of economics that deals with ―how economists should answer the foregoing questions, that is, evaluate proposed policies‖, is known as welfare economics. Thus the subject-matter of welfare economics is to help society make better choices that can help us to answer these questions, but just what is welfare economics?

A. C. Pigou (1922) who first addressed welfare economics as an independent area of study is known as the father of welfare economics wrote book ―Economics of Welfare‖ and defined the concept of welfare.Welfare economicsis a branch of general economics that endeavours to formulate propositions that enable us to state that social welfare in one economic situation is greater or lesser than in another. Welfare economics is concerned with evaluation of alternative economic situations from the point of view of the society's wellbeing. Thus according to this statement welfare economics is that branch of study which provides standards of judgement by which we may rank, on the scale of better or worse, alternative economic situations open to society. To illustrate, assume that welfare in an economy is W, but given the state of technology and factor endowments, suppose that this welfare could be larger, e.g., W^{*}.

Thus the Tasks of the welfare economics are:

(a) To show that in present state W < W*, (b) To suggest ways of raising W to W^*.

So, in welfare economics attempts are made to establish criteria or norms with which to judge or evaluate alternative economic states and policies from the view point of efficiency or welfare. Thus, norms established by welfare economics are supposed to guarantee the optimal allocation of economic resources to achieve the maximum well-being for the individuals in society. As such the central problem of welfare economics is to see whether a particular change in resource allocation will increase or decrease welfare. Several such norms/criteria have been suggested from time to time. Based on such criteria welfare economics can be sub-divided into two main branches viz., old welfare economics and new welfare economics.

Economic and Non-Economic/General Welfare:

A distinction may be drawn between economic welfare and non-economic or general welfare. An individual‘s welfare may relate to his physical well-being spiritual well-being or economic wellbeing. As such an individual‘s choice is determined by a large number of variables some of which are economic and others not. We might say that economic welfare refers to the satisfaction derived from the consumption of economic goods whereas general welfare refers to the satisfaction derived from both economic and non-economic goods.

Is Welfare Economics a Positive or Normative Economics?

Positive economics is that branch of economics that is concerned with understanding and predicting economic behavior. The types of questions that positive economics tries to answer are based on logic, axioms or assumptions about the unit of analysis. The propositions/principles of positive economics based on theory or empirical implications (wherever available), provide hypotheses that can be tested statistically. Rejection of the hypotheses generated by a theory suggests rejection of the underlying theory. As with positive economics, the propositions/principles of welfare economics are also logical deductions from a set of definitions and assumptions but the assumptions of welfare economics are fundamentally different from those of positive economics. They are ethical assumptions/ value judgments with which economists, or for that matter any individual, may legitimately disagree but cannot be put to tests. As Positive economics is only concerned with what ‗is‘, welfare economics, on the other hand, is concerned with what ‗ought to be‘. Welfare economics is therefore a normative economics.

Individual and Social Welfare:

Perhaps it is pertinent to mention here that following three questions arise when dealing with concepts of individual welfare and social welfare.

- What do we mean by an ―individual‘s or household‘s welfare‖?

- What do we mean by —social welfare‖? □ How are the two related?

Individual welfare can be defined as the sum total of satisfaction derived by an individual from the consumption of economic goods and services (we are dealing only with economic welfare), whereas social welfare is the total satisfaction derived by the society as a whole. It can be defined as an aggregate/sum of utilities/satisfaction derived from consumption of economic goods and services of all the individuals in the society.broadly speaking, the welfare of an individual is synonymous with the welfare of the society. However, the cases of divergence are common. The divergence between individual and social welfare arises in all market forms, viz., perfect competition, monopoly, monopolistic competition, and oligopoly. This divergence occurs mainly because of uncompensated and uncharged services. The state/government can reduce this divergence and bring about harmony between individual and social welfare through fiscal/budgetary measures like bounties/subsidies and taxes.

Old and New Welfare Economics:

Often, however, a distinction is made between the old welfare economics of Marshall and Pigou (1922),and new welfare economics. The old welfare economics is based on utilitarianism, which accepted both cardinality of utility and interpersonal comparisons of utility.The principles of the old welfare economics have been attacked on several grounds by economists (For example, Paul A. Samuelson, 1942) associated with the new welfare economics.As they rejected both cardinality and interpersonal comparability of old welfare economics. In this direction Vilfredo Pareto (1896)argued that any policy that makes any person worse off cannot be supported on objective grounds. As time passed attempts have been made to extend the class of questions that can be addressed objectively by welfare economics, Kaldor (1939) and Hicks (1943), introduced the compensation principle criterion by which a change should be made if a potential Pareto improvement can be made by some redistribution of goods or income following the change so that at least one individual is better off and no one is worse off. This compensation criterion has also come to be known as the potential Pareto principle.The compensation principle has also not escaped criticism. Scitovsky (1941), in what has become known as the reversal paradox, illustrated how inconsistencies can occur when using this principle in policy analysis.

PARETO CRITERION- ASSUMPTIONS, OPTIMALITY:

The Pareto Criterion/Principle:-

The concept of Pareto Principle plays a major part in welfare economics. Many theorems and optimality conditions are formulated with reference to Pareto principle because the Pareto principle is widely accepted as a value judgment, while judgments that involve interpersonal comparisons of utility are more controversial. However this does not

mean that welfare economics has to be based only on the Pareto principle. Indeed theorems and analysis based on
_extra-Paretian' principles have been developed. Nevertheless Pareto principle will continue to be one of the most important concepts in welfare economics, and hence it warrants careful study.

According to the Pareto principle a change is desirable if it makes some individuals better off without making any others worse off. This is a value judgment (ethical assumption). Whenever we say that one situation is better than another, or that a situation is optimal, we are basing our assessment, explicitly or implicitly, on a certain set of value judgments. A situation that is regarded as optimal according to one set of values may rank very low according to another set. For example an increase in GNP, even if it results only from the production of _goods' and has not involved any _bads', such as increased air pollution, may still be regarded as a bad thing by those who believe that humankind must not pursue material comfort. Similarly if we adopt a series of economic policies which make the richer group richer but have the poorer group at the same absolute level, then according to a Pareto-type social welfare should be considered to have increased. This will yield increased Pareto-type social welfare only if an additional factual assumption is made: that there is no externality in consumption. If there are external effects on consumption, poorer group may be made worse off even if their income remains unchanged as they may be envious of the increased consumption enjoyed by richer group. Thus Pareto optimality is optimal with reference to value judgments that are consistent with the Pareto principle.

The Pareto criterion (also referred as efficiency criterion) was introduced in the nineteenth century by the eminent Italian economist, Vilfredo Pareto (1896). Its potential for application to public policy choices, however, is still very much discussed. The Pareto criterion is a technique for comparing or ranking alternative states of the economy. By this criterion, if it is possible to make at least one person better off when moving from state A to state B without making anyone else worse off, state B is ranked higher by society than state A. If this is the case, a movement from state A (Pareto-inferior position or Pareto-inefficient state) to state B (Paretosuperior position orPareto-efficient state) represents a Pareto improvement, or state B is Pareto superior to state A (A and B are referred to as Pareto-non-comparable states). As an example, suppose a new technology is introduced that causes lower food prices and, at the same time, does not harm anyone by (for example) causing unemployment or reduced profits. The introduction of such a technology would be a Pareto improvement. If there are any who lose, the criterion is not met.If society finds itself in a position from which there is no feasible Pareto improvement, such a state is called a Pareto optimum. That is, a Pareto-optimal state is defined as a state from which it is impossible to make one person better off without making another person worse off.

The Conditions for Pareto Optimality:-

The conditions for Pareto optimality in the traditional framework of analysis can be divided into first-order/marginal necessary conditions and second-order _sufficient' conditions.

Marginal/First-Order Necessary Conditions:

There are three marginal conditions which need to be satisfied in order to attain Pareto efficient situation in an economy. These marginal/first-order necessary conditions are as follows:

1. Efficiency of distribution of commodities among consumers (efficiency in exchange),
2. Efficiency in allocation of factors among firms (efficiency of production),
3. Efficiency in allocation of factors among commodities (efficiency in product mix or composition of output).

The Case of Exchange Efficiency:

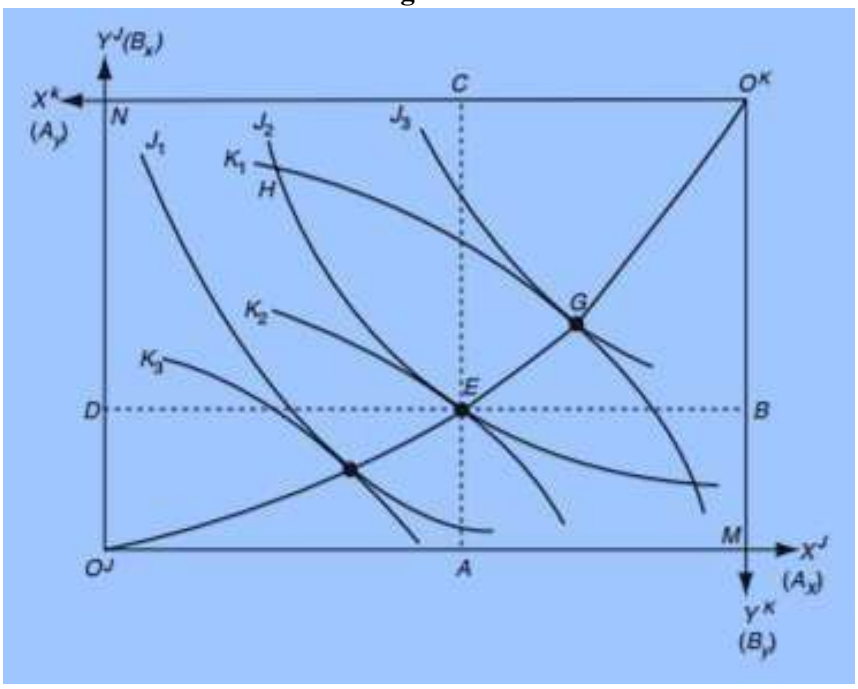
To begin with the optimal condition for exchange, we shall assume for the moment that various amounts of final goods have already been produced, and hence the problem is how to allocate them among the individuals in the economy. At this stage we shall also assume divisibility (that is, the goods and factors of production are divisible to any desired amount), continuity (_nature does not jump‘), the absence of transaction or allocation costs, and the absence of external effects of consumption and production. Under these assumptions the Pareto condition for exchange states that the marginal rate of substitution (MRS) between any pair of goods must be the same for all individuals who consume the two goods.If the MRS between any pair of goods, say, X and Y, is different for any pair of individuals, J and K, it can be shown that one individual can be made better off without the other being made worse off. For example, suppose that the MRS of X for Y(MRSXY) equals one for J and two for K. In other words one X is worth (in terms of utility) one Y at the margin to J, and is worth two Y to K. Thus if we take one X from J and give it to K, and take one Y from K and give it to J, K is made better off while J stays indifferent. We could have made both of them better off if we had transferred 1.5 Y insteadof one Y from K to J. The possibility of making one person better off without making the other worse off means that Pareto optimality has not been attained. This possibility can be shown to exist as long as the MRS of a pair of goods is different between any pair of individuals. Hence for a Pareto optimum the MRS of any pair of goods must be the same for all individuals who consume that pair of goods. The above argument is illustrated in Figure 2.1, which is known as the Edgeworth-Bowley box. The box is formed by superimposing the inverted indifference map of K on the indifference map of J, such that the origin of K(O^K) is north-east of $O^J$and the axes are parallel, as shown. Moreover the width of the rectangle ($O^JM = O^KN$) measures the total available amount of X and the height of the rectangle ($O^JN= O^KM$) measures that of Y. X^J stands for the amount of Xconsumed by J, and so on. Any point (for example E) on the box represents a specific distribution of X and Y between J and K. For example at point E, Jconsumes O^JA amount of XandO^JD of Y, and K consumesO^KC(=AM) of XandO^BB (=DN) of Y.

The curve O^JEO^K traces the points of tangency between the two sets of indifference curves. It can be shown that, for any point that is not on the curve O^JEO^K, we can make one individual better off without making the other worse off by moving to some point on the

curve. For example if the initial point is H, both individuals will be made better off if we move toany point on the curve between E and G. If we move exactly to E, J stays on the same indifference curve J_2 and K moves from a lower indifference curve, K_1, to a higher one, K2. On the other hand, if we move from H to G, J is made better off and K stays indifferent. Hence every point between and including E and G is Pareto-superior to H. In fact this is true for all points bounded by the indifference curves J_2 and K_1, that is, the shaded area. But for any point within the shaded area, a further Pareto improvement is still possible until we arrive at a point on the curve.

The curve O^JEO^K is called a contract curve since free contracting will ensure that a point on it will be reached unless our individuals engage in strategic behaviour, each attempting to gain more than the other will concede. If the number of individuals in the free exchange is large and each possesses a small fraction of the total supply of goods, no individual will have any strategic or monopolistic power and a point on the contract curve will be reached by free exchange. A point on the contract curve is a point of tangency between an indifference curve of J and another of K. The absolute slope of an indifference curve measures the MRS between the two goods for the individual. Hence the MRS is equalised for the two individuals at any point on the contract curve. This links our geometrical illustration to the Pareto condition for exchange.

Figure: 2.1



Thus the exchange optimum requires ensuring that: $MRS^A_{XY} = MRS^B_{XY}$

The Case of Production Efficiency:

Efficiency in production must also be considered when discussing Pareto optimality.Outputefficiency can beachieved only if inputs are allocated to their most

efficient uses.Pareto optimality condition for production states that the MRTS between any two factors must be the same for all products and for all production units using these factors. This condition ensures that, with a given factor endowment, the production of each good has been maximised given the amounts of other goods produced. If this condition is not satisfied it is possible to increase the production of some product without reducing that of any other product. The demonstration of this proposition is similar to that of the exchange optimum. If the MRTS between factors A and B is different for products X and Y, the production of one can be increased without reducing that of another. For example, suppose that the marginal rate of technical substitution of A for B (MRS_{AB}) equals one in the production of X and two in the production of Y. In other words the marginal product of A equals that of B in the production of X but is twice the marginal product of B in the production of Y. Thus if wetransfer one A from the production of X to that of Y, and transfer one B from the production of Y to that of X, the production of Y is increased while that of X stays the same. Moreover the output of all other products is unaffected since their inputs are unchanged. With the increased production of Y we can give (divide) this extra amount of Y to some (all) individual(s) in the economy and hence make them better off, while no one is made worse off. Therefore Pareto optimality has not been attained as long as the MRTS between any pair of factors is different in the production of different products (and in fact also in the production of the same product in different production units or processes).A geometrical demonstration of this proposition can again be conducted with the help of Figure 2.1 by reinterpreting the indifference curves of J and K as the iso-product curves (or isoquants) of X and Y, and substituting A_X, B_X, A_Y, B_Y($A_X$is the amount of factor Aused to produce Xand so on) respectively for X^J, Y^J, X^K,Y^K. It can then be shown that production efficiency requires the allocation of factors at a point of mutual tangencyof the isoquants, which implies equalisation of the MRTS between factors.

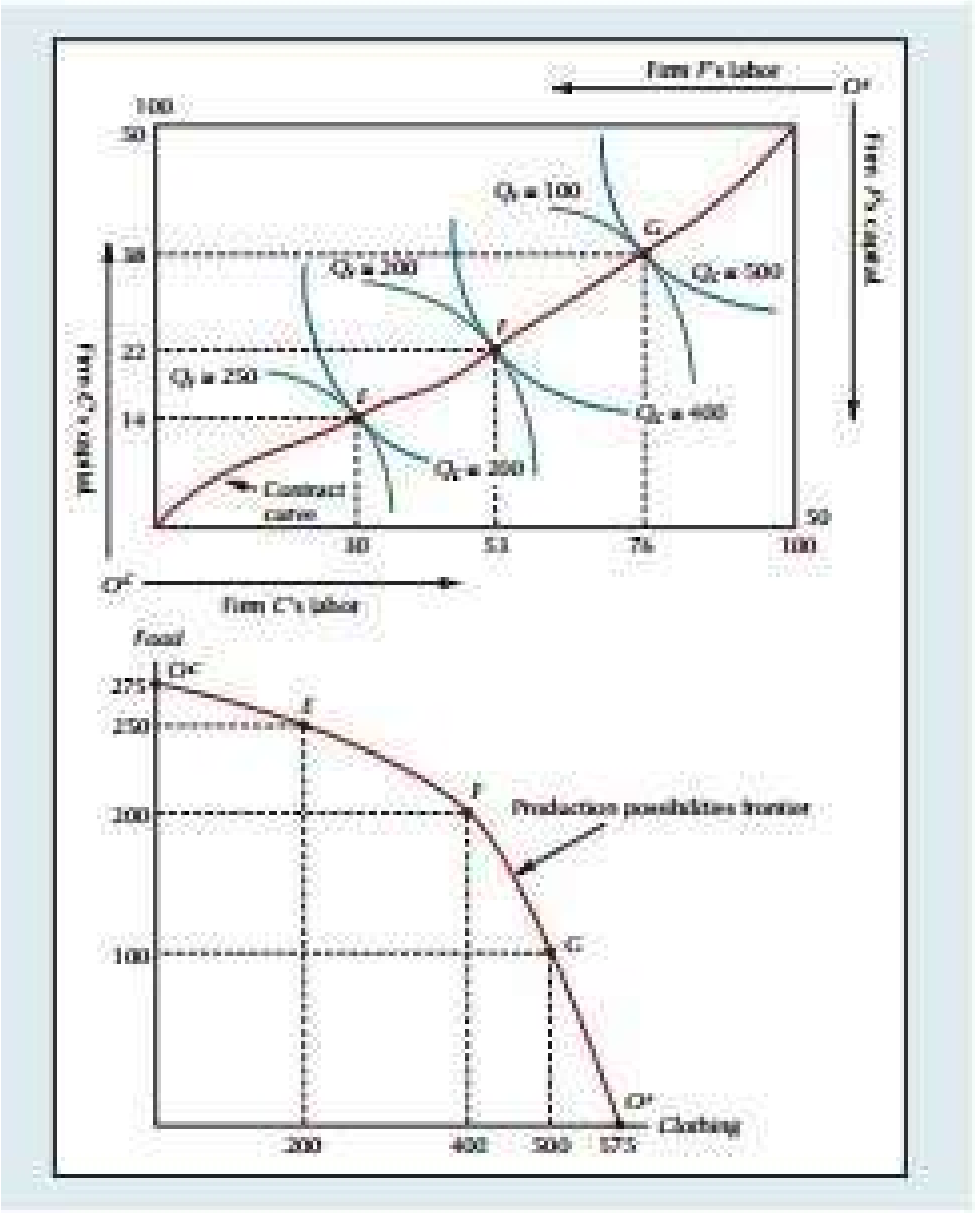
Thus the production optimum requires ensuring that: $MRTS^X_{AB} = MRTS^Y_{AB}$.

The Case of Product Mix Efficiency:

The third necessary condition for Pareto optimality is called the top-level optimum and relates production to preferences. It requires that, for any pair of goods, the MRS (which is equalised over all individuals, as required by the exchange optimum) be equal to the marginal rate of transformation (MRT). The MRT between any two goods is the marginal rate at which the economy can ‗transform' one into the other by allocating more resources to produce one and less to produce the other. If the MRT is not equal to the MRS for any pair of goods, we can produce more of one good and less of the other to make everyone better off. An economy could be efficient in production and at the same time efficient in consumption and yet do a poor job of satisfying the wants of its members. This could happen if, for example, the economy for some reason devoted almost all its resources to producing clothing, almost none to food. The tiny quantity of food that resulted could be allocated efficiently. And the inputs could be allocated efficiently in the production of this lopsided product mix. But everyone would be happier if there were less clothing and more food. There is thus one additional efficiency criterion of concern, namely, whether the

economy has an efficient mix of the two products. To define an efficient product mix, it is helpful first to translate the contract curve from the Edgeworth-Bowley production box into a production possibilities frontier, the set of all possible output combinations that can be produced with given quantities of capital and labor.Every point along the contract curve gives rise to specific quantities of clothing and food. Suppose $F_C(K, L)$ and $F_F(K, L)$ denote the production functions for clothing (firm C) and food (firm F), respectively.

Figure: 2.2



As we move downward along the production possibilities frontier, we give up food for additional clothing. The slope of the production possibilities frontier at any point is called the marginal rate of transformation (MRT)at that point, and it measures the opportunity cost of clothing in terms of food. For the economy shown, the production possibilities

frontier bows out from the origin, which means that the MRT increases as we move to the right. As long as both production functions have constant or decreasing returns to scale, the production possibilities frontier cannot bow in toward the origin.

In order for an economy to be efficient in terms of its product mix, it is necessary that the marginal rate of substitution for every consumer be equal to the marginal rate of transformation.
To see why, consider a product mix for which some consumer‘s MRS is greater or less than the corresponding MRT. The product mix Z in panel a in Figure 2.22, for instance, has an MRT of 1, while Ann‘s consumption bundle at W in panel b shows that her MRS is 2. This means that Ann is willing to give up 2 units of food in order to obtain an additional unit of clothing, but that an additional unit of clothing can be produced at a cost of only 1 unit of food. With the capital and labor saved by producing 2 fewer units of food for Ann, we can produce 2 additional units of clothing. We can give 1.5 units of this extra clothing to Ann and the remaining 0.5 unit to Bill, making both parties better off. It follows that the original product mix cannot have been efficient (where, again, efficient means Pareto optimal).

Thus the product mix optimum requires ensuring that: $MRT_{AB} = MRS^{A}_{XY} = MRS^{B}_{XY}$.

The Second-Order Sufficient Conditions:

From the above it is clear that the Pareto Optimum can be achieved if the several marginal conditions are fulfilled. However there are several situations when the fulfillment of these first order conditions does not lead to Pareto optimum. To achieve an optimum welfare position it is necessary that second order conditions along with first order conditions are satisfied. The first-order conditions are necessary but not sufficient for an optimum since they may define a minimum rather than a maximum, so in additionsecond-order conditions are required to ensure the attainment of Paretooptimality. These second-order conditions are also called the sufficient conditions, and it is only by combining them with the first-order conditions that sufficiency is assured. These second order conditions are no other than the stability conditions for equilibrium position. The fulfillment of second order conditions means that all the indifference curves must be convex to the origin and all production possibility curves areconcave to the origin in the neighbourhood of any position where marginal conditions are satisfied.

EFFICIENCY OF PERFECT COMPETITION:

Now we will turn to the fundamentals of neoclassical microeconomics which is based on existence of a well-functioning competitive market. For a competitive market or perfect competition to existseveral conditions are required that will guarantee efficient allocationof scarce resources at equilibrium.The conditions required for such a market to function may failto hold in certain circumstances, leading to distorted markets whose efficiency is impaired by these market failures (i.e., non-fulfillment of conditions).

Conditions required for a Well-Functioning Competitive Market are as under:

- There are well-defined and enforceable property rights that characterize the ownership of resources, goods, and services.
- There is a functioning marketinstitution called price thatgoverns how buyers and sellers conduct.
- There are large numbers of buyers and sellers, each of which is smallrelative to the overall market. Consequently, no individual buyer or sellerhas market power—the capacity to affect market price by manipulatingthe quantity they purchase or sell.
- Buyers and sellers are unable to colludeand form organizations (e.g.,cartels) that can affect market price by coordinating member firms‘ collective purchase or sales quantities.
- There are no positive or negative externalities or there are no economies or diseconomies of scale.
- There is free entry and Exit. There is the potential for low-cost firm to enter the market which further limits the potential for market power by incumbent firms.
- There are notransaction costs,such as legal fees, taxes, or regulatory costs.
- Information on characteristics such as the quality, availability, pricing, and location of goods and services is available at low cost to market participants.

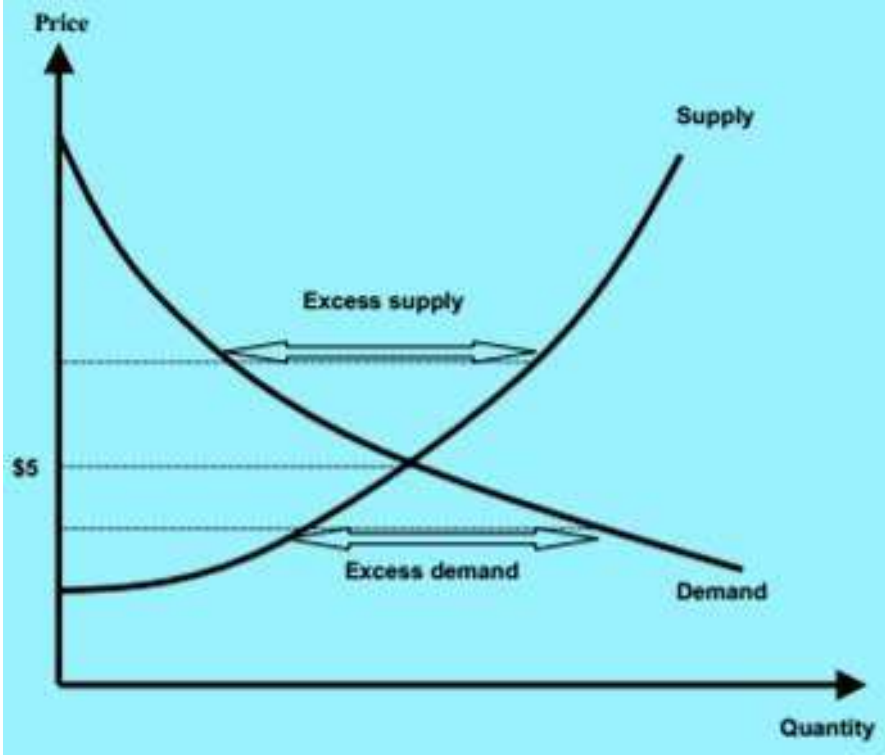
Market failure occurs when one or more of the above conditions for a well-functioning competitive market are not met in a substantial way.

There are probably no real-world markets that perfectly satisfy these requirements. However, economists have developed several theories based on perfect competition (taking perfect competition as model/sample due to beauties it possesses).Let‘s assume for now that all the conditions are met for a well-functioning competitive market.We will now address the concept of equilibrium in a competitive market, and show how resources are efficiently allocated in equilibrium.

Market Equilibrium and Efficiency:

We know that utility, product prices, and limited consumer budgets determine consumer demand for goods and services. Similarly, profit-maximizing firms in a competitive market supply along their short-run marginal cost curves. We also know that market demand is found by horizontally summing all consumers‘ quantity demanded associated with each price, and that market supply is found by horizontally summing all firms‘ quantity supplied associated with each price. The market is in equilibrium where demand intersects supply curve.

Figure: 2.3, Market Equilibrium and Efficiency



Consider the supply and demand curves shown in Figure 2.3, in a well-functioning competitive market for a particular type of lunchtime meal. Note that at a price above $5, there is an excess supply,meaning that quantity supplied exceeds quantity demanded. When there is excess supply, market forces lead to a reduction in price. In contrast, at a price below $5, there is an excess demand, meaning that quantity demanded exceeds quantity supplied. When there is excess demand, market forces lead to an increase in price.Market equilibrium occurs at a price where the quantity supplied by sellers equals the quantity demanded by consumers. Because quantity supplied equals quantity demanded, there is neither excess supply nor excess demand. This state of affairs is referred to as an equilibrium because the price and the volume of trade will stay the same over time until some factor influencing buyer or seller market behavior changes, which will then necessitate a period of adjustment as price seeks its new equilibrium level.

Now we develop the important concept of a well-functioning competitive market being efficient (efficient resource allocation is the condition of producing something beneficial or valuable with a minimum of waste.). In the context of market analysis, resources are efficiency allocated when the welfare of the market participants is maximized. Such a situation occurs at the equilibrium market price because in a competitive market there is neither excess supply nor excess demand, and so there are neither too many nor too few units of the good or service produced. If price were above the equilibrium level, we would have excess supply, and so the amount actually traded(equal to quantity demanded) would be less than the quantity traded at the equilibrium price, thereby reducing total surplus/welfare. If price were below the equilibrium level, we would have excess demand (also known as a shortage), and so the amount traded (equal to quantity supplied) would be

less than the quantity traded at the equilibrium price, thereby reducing total gains from trade (total surplus or welfare). As a result, when there is either excess supply or excess demand, some mutually satisfactory transactions are prevented from occurring that would have generated consumer and producer surplus, which is why non-equilibrium prices are inefficient (Pareto inefficient).

MARKET FAILURE AND ITS SOURCES:

Concept of Market Failure:

Market is a powerful mechanism of coordination and assignment and perfectly competitive market is an epitome to perform such functions. Yet there are some situations when even perfectly competitive market cannot operate well, causing socially inefficient results .When these inefficiencies are substantial, we refer to such a state as a market failure. Four such market failures instances are externalities, public goods, asymmetric information, and imperfect market structure. In these circumstances (in case of market failure) prices either do not exist or do not transmit the relevant information to allow agents to make optimal decisions. As such resources are not efficiently allocated or there is misallocation of resources as little may be produced by producers in case external benefits prevail while there may be more than an optimal output of commodities whose production involves detrimental externalities, which may affect prospects for economic development. Therefore, deliberate social action (government intervention) is necessary to modulate the incentives of individual agents and favour a collective response in line with socially desirable objectives. Let‘s consider some of the possible sources of market failure.

Sources ofMarket Failure:

Externality:

An externality is present when a utility function or a production function depends on a variable that is not under the control of the relevant consumer/producer and this dependence is not affected through the market relationship (i.e., externalities are unpaid benefits or uncompensated costs).For example when you buy oranges from a shop there is presumably a positive effect on your welfare. However this is an exchange relationship rather than an external effect as you are paying for the oranges. Externality refers only to benefits or damages that are not paid for; market relationships are not external effects. Second, for an external effect to be present there must first be an effect. Some party, K (the affecting party) must produce an effect on some other party, J (the affected party). The effect must not just be present but must also have positive or negative welfare significance. Third, the affecting party is usually a person, a group of persons or something that is under the control of persons (animals, institutions and so on).The affected party is also usually a person/group of persons or something owned by persons. Thus, an externality is defined as the case where an action of one economic agent affects the utility or production possibilities of another in a way that is not reflected in the marketplace. In its various forms – external

economies and diseconomies or simply externality causes divergences between marginal social costs/benefits (Social cost/benefit is the sum of private and external costs/benefits.) and marginal private costs (benefits).

Classification of Externalities:

External effects are often classified into the effects of consumers on consumers ,producers on producers, producers on consumers, and consumers on producers. Smoking is a common example of a consumer–consumer externality. When a smoker enters a restaurant and chooses to light a cigarette, it may create an unpleasant odor and cancer risk for a non smoker also patronizing the restaurant. Because the smoker pays for cigarettes, those actions are partially reflected in the marketplace, but the smoker does not pay the non smoker for the right to smoke nor does a market exist for the nonsmoker to pay the smoker to cease smoking in the restaurant! Thus, market price (even in case of perfect completion) cannot possibly reflect any utility or disutility derived by one individual associated with another‘s consumption. External effects exist in consumption whenever the shape or position of a man‘s indifference curve depends on the consumption of other men .Perhaps the most widely publicized external effects are those of producers on consumers. These include the effects of industrial pollution of air and water resources. For example, when a steel plant discharges contaminants into the air, it may lead to disease or other adverse effects on consumers that are not reflected in the market price. The external effects of producers on producers, on the other hand, have received substantial attention. For example, an agriculturalist or a farmer may apply pesticides to his or her crop to control damaging insects but, as a result of adverse winds, kills a neighboring beekeeper‘s bees. The benefits of the farmer‘s increased production are reflected in the marketplace, but the damage caused to beekeeper is not reflected by market price.External effects of producers on producers are present whenever a firm‘s production function depends in some way on the amounts of the inputs or out puts of another firm. With respect to external effects of consumers on producers, these effects of consumers on producers have received very little attention.

Symbolically we define an external effect, an externality, to be present when,

$$UA = U(X_1, X_2, X_3, \ldots\ldots X_m, Y_1)$$

This states that the utility of an individual, A, is dependent upon the —activities‖, (X_1, X_2, X_3, ……X_M), that are exclusively under his own control or authority, but also upon another single activity, Y_1, which is, by definition, under the control of a second individual, B, who is presumedto be a member of the same social group.

External effects are not necessarily negative; however, some consumers may be positively affected by an increase in the consumption of others. For example, a neighbour‘s gardening and planting of colourful flowers may increase the utility of another neighbour .In the producer– producer case, one farmer may find a pesticide application much more

effective if neighboring farmers also apply the same types of pesticides, so that untreated pest populations do not immediately move into his or her fields from neighboring fields as soon as the effects of the pesticides have worn off.

Solutions/Policies/Instruments for Obtaining Social Optimality with Externalities:

To remedy market failure due to externalities, it is necessary to devise institutional mechanisms and policy instruments that bring socially desirable equilibrium in the economy. Policies for dealing with externalities of the type discussed above generally include Pigouvian taxes or subsidies/bounties, assignment of property rights, and standards (non-tradable pollution restrictions). Taxes, subsidies and the assignment of property rights are called economic instruments because they utilize economic incentives for consumers and producers to regulate the level of pollution. Standards, either on technology or the level of permissible emissions, are called command or control instruments because they are imposed on private actions by government.

Public/Social Goods:

Some goods and services have the characteristic that individual property rights are not assigned or well established, and so they are collectively produced and/or consumed. Such goods are called public goods and examples include public television, public radio, parks, highways, libraries, wilderness areas, and recreation sites.

A public good can be distinguished from a private good by the fact that it can provide benefits to a number of users simultaneously whereas a private good can, at any time, only benefit a single user. When a public good is provided, it can be consumed collectively by all households. Such collective consumption violates the assumption of the private nature of the goods in a competitive economy. The existence of public goods then leads to a failure of the competitive equilibrium to be efficient. Such failure implies a potential role for the state in public good provision to overcome the failure of the market asmarket demand forthese goods and services is far too low, leading to an inefficiently small quantity provided in markets.

Public goods have two features that make them different from private goods. They are nonexcludable in their supply, which means there is no easy way of preventing someone from having access to their consumption, and they offer non-rival benefits, which means that consumption by one agent does not diminish the availability of the good‘s benefit for others. In simple words a pure public good has the property that an additional person‘s consumption of the good does not limit the amount of it available to others. Stated another way, the marginal cost of additional consumption of the public good is exactly zero. Non-exclusion implies that it is not possible (or easy) to limit the supply of public goods only to those who are willing to contribute to the costs of supplying them for society. This gives rise to free riding: potential users may wait for the good to be supplied and then consume the good for free. Non-rival benefits give rise to zero marginal costs of use, so that exclusion is inefficient since potential consumers with a positive marginal benefit are denied access to

the good. Because of these characteristics of public goods, leaving their provision to the market will result in undersupply with respect to the socially desirable level. Collective action is therefore necessary to ensure efficient supply. To sum up, the provision of public goods faces two types of economic problems. First, non-rivalry introduces the challenge of defining the optimum level of supply, given that an increase in the number of consumers increases aggregate well-being at null (or very low) cost. Second, the non-exclusive nature of a public good is the source of undersupply, since agents tend to hide their preferences. Efficient provision needs to take into account the costs of design and promotion of efficient collective action.

The range of goods considered purely public is quite limited, whereas the number of goods that are partially non-rival or non-excludable—impure public goods—is more extensive (table 2.1). If the public good can accommodate any number of users then it is said to be pure. It is impure when congestion can occur. For example, club goods are excludable and partially rival.

Partial rivalry is required to ensure that exclusion is not inefficient: the toll/pay of a club internalizes the marginal congestion cost associated with another unit of utilization. All users pay the same fee per use: those with a greater preference for the club good will pay more in total tolls by visiting or using the good more often. Example is access to a specific net service such as cable television. For example, road, though available to everyone, is conditioned by the number of people that use it at any one time. Thus, the characteristics of both non-rivalry and non excludability can vary across classes of public goods.

The implication of non-excludability is that consumption cannot be controlled efficiently by a price system since no household can be prevented from consuming the public good if it is provided. It is evident that a good satisfying this condition does not fit into the framework of the competitive economy used to derive the optimum/efficient equilibrium.From the property of non-rivalry it can be deduced that all households can, if they so desire, simultaneously consume a level of the public good equal to its total supply. It means a household can consume additional units of public good at no cost which is not possible under a competitive market economy.

Problems related to the efficient collective provision of public goods differ depending on their characteristics. Thus, for example, club goods (examples include parks and roads) can be provided relatively more efficiently since they allow for the possibility of differentiating among members and charging according to preferences for using the good. Those who use the goods most pay the highest charges. It is more difficult to instigate self-organized responses in the case of pure public goods, where non-rivalry and the lack of exclusion coexist. In this case, what is required is an efficient collective response.

Table: 2.1 TheCategorization and Typology of Goods Based on Certain Characteristics

	Fully Rival	Partially Rival	Non- Rival
Full Excludable	**Private Goods Food, cars, fuel**	**Club Goods Golf course, library, waterways**	**Merit Goods Free school books to poor children**
Partially Excludable	**Impure Public Goods Pest control**		
Non-Excludable	**Common Property Resources such as hunting ground, fishing ground, free access pastures**	**Impure Public Goods Ocean fisheries**	**Pure Public Goods**

Imperfect/Asymmetric Information:

The availability of perfect information to economic agents determines the efficient/optimum equilibrium without policy intervention and the information deficiencies, particularly asymmetric information between agents in the economy, leads the market outcome to be inefficient.If people are poorly informed of product quality, safety, or availability, then their willingness-to-pay is distorted, which in turn implies that market demand is either too large or too small. Consequently, either too much or toolittle is produced relative to the full-information benchmark, leading to inefficient resource allocation. There are two important subcategories of asymmetric information (a situation in which different agents have different amounts of information about a good): adverse selection and moral hazard.

Adverse Selection: Depending on the fact one party in a contractual agreement, the buyer or the seller has the information that other party does not have. As such only some buyers or sellers will want to enter into agreement in order to profit the most from the deal.

Moral Hazard: Depending on asymmetric information, different agents act in different ways after having agreed on a contract. One party of the agreement may be tempted to exploit the other‘s lack of knowledge.

The only difference between adverse selection & moral hazard is that while the adverse selection is about what happens before the agreement has been made, the moral hazard is about what happens after the agreement has been made.

Imperfect Market Structure (Monopoly, Cartels, and Market Power):

A monopoly exists when there is a single seller in a market. A cartel is a group of colluding sellers that collectively act like a monopolist. Competition fails under either of these conditions. In order to raise price and profit, a monopolist or a cartel will need to reduce output from the competitive level. If a monopolist or a cartelis successful in reducing output relative to the competitive equilibrium level, and increasing price above the

competitive level, the rise in price and decline in output implies loss of welfare. Or in other words, existence of monopolies and cartels (i.e., non-competitive markets)result in less than efficiently allocated resources in the market (too small a quantity is produced), and the total welfare (sum of producer and consumer surplus) is less than in the competitive equilibrium.

STATE/GOVERNMENT EFFICIENCY:

Govt. or State is an organization which coordinates people's activities according to set rules and regulations it stipulates. The state/govt. comprise of public administration, public sector enterprises, public policies, public institutions, and public resources with powers of intervention in the market.

As we can know, there are almost no examples of real-world markets that do not have some degree or form of market failure. It is all these types of market failures that in the past have led development economists to argue for various forms government intervention in the allocation of resources for development purposes.As with all types of market failures, there is a wide and opens role for government intervention to promote efficiency. Then from an economic perspective, there is potential for regulatory intervention of some kind to resolve market failures in most markets. Suchintervention, however, can itself create problems and distortions if thestate is itself subject to informational limitations. Thus, when we see an opportunity for a regulatory intervention because of market failure,it is also worthwhile to consider whether the form of intervention taken will truly makes us better off or worse off than before. The intervention that a government can make in order to raise welfare is of the form of:

1. Provision of public goods,
2. Curbing of market power due to market imperfections,
3. Provision of up to date and systematic information, and
4. Provision of institutional environment in which markets can flourish such as macro price stability.

IMPERFECT COMPETITION AND WELFARE:

In the previous topics, the assumption of competitive behaviour has been maintained throughout. It is often best to view this as a useful tool for the analysis of welfare optimum. However,there are numerous forms of imperfect competition which vary with respect to the nature of products (products may be homogeneous or differentiated), the strategic variables (strategic variables of the firms can either be prices or quantities) of the firms, the objectives (firms' objectives may be individual profit maximisation or joint profit maximization or profit maximisation or sales maximisation) of the firms and the possibility of entry (Entry may be impossible or relatively restricted to few).Imperfect competition is one of the standard examples of market failure which lead to the non-achievement of Pareto optimality. It is on this basis that economic policy is usually suggested as necessary in the presence of

imperfect competition in order to reduce inefficiency. If free market system does not resolve the imperfect information problem through market signal i.e. price, then government may intervene by providing information.

SOCIAL CHOICE/PREFERENCE:

This topic demands the intersection of the two disciplines:Political Science and Economics.The origins of this concept stemmed from:

1. Efforts in economics to define ‗the economic good.'

2. The study of political processes: how do they work and how should they work?

And its history can be traced back to the investigations of Jean-Charles de Borda [1781],the Marquis de Condorcet [1785], C. L. Dodgson (Lewis Carroll) [1876], and E. J. Nanson [1882]. In the economics literature, the notion of aggregating individual preferences to obtain a social preference relation apparently originated in the writings of Jeremy Bentham [1789], who originated the idea of a utilitarian social welfare function, and thought of society's utility as being literally the sum of individual (cardinal) utilities. However ,the introduction of the idea of a Pareto improvement was a major innovation in this development, and enabled economists to begin to put normative economic analysis on a much firmer footing than had previously been possible. But economists were also frustrated by the fact that most allocations could not be compared via the Pareto criterion. The next major innovation in welfare (normative) economics was the Compensation Principle, which allowed a much broader class of cases to be compared. However, it was eventually pointed out that this criterion did not really allow many more allocations to be compared than did the Pareto criterion. Consequently, the publication of
Bergson's classic article on social welfare functions was a very promising development. It was an attempt to show to what extent the individual preferences can be aggregated into social preferences, or more directly into social decisions. It aimed at constructing such a rule which could be allied with not only Pareto efficient allocations ,but also any alternative that a society faces.

A social welfare function is analogous to individual consumer's utility function. It is a locus of different combinations of utilities of consumers A and B, which yield same level of satisfaction. It provides a ranking of alternative states in which different individuals enjoy different utility levels. If the economy consists of two individuals the social welfare function could be presented by a set of social indifference curves. However, in reality there is no easy method of constructing it. Its existence is axiomatically assumed in welfare economics. Thus, the problem of social choice is to see whether we can derive a social preference that is based on the preferences of individuals and satisfies certain reasonable conditions. While this seems simple enough and but its complexity is presented by Arrow's impossibility theorem. Prof.Kenneth Arrow raised some fundamental questions regarding the possibility of developing such a function which would be widely acceptable, or more generally, finding a social preference relation as a function of individual preference relations. He pointed out

that a consistent and truly representative social welfare function cannot be constructed if choice is to be made from among more than two alternatives. He showed that majority rule will lead to contradictory social ordering (Arrow's Impossibility Theorem). This is explained by the following example in table
2.2:

Table: 2.2; Preferences That Produce Intransitive Choices in Majority Voting

	McCain	Biden	Schumer
Best	Missile	Research	Aid
Second	Research	Aid	Missile
Third	Aid	Missile	Research

In a majority vote, the missile defeats the research program, which in turn defeats aid to the poor. And yet aid to the poor wins when paired against the missile. Majority voting schemes can lead to intransitivities even when individual preference orderings are transitive.

Arrow's theorem has implications not only for welfare economics but also for political science since it implies that all voting and election methods (including majority rule) based on rankings are imperfect in some sense. Many attempts have been made to overcome or bypass the impossibility result but very little has been achieved so far.

UNIT- III

THEORY OF DISTRIBUTION AND FACTOR PRICING:

The theory of distribution or the theory of factor pricing deals with the determination of the share prices of four factors of production, viz., land, labour, capital and organization.

Four Factors of Production, in Economics:

(i) The share of land, is named as Rent.

(ii) The share of labor as Wages.

(iii) The share of capital as Interest.

(iv) The share of organization as Profit.

The four factors of production in cooperation with one another produce annually a net aggregate of commodities, material and non-material. This we name as national income. The national income is to be shared among the four factors of production which have contributed to this production. In the theory of distribution, we are chiefly concerned with the principles according to which the price of each factor of production is determined and distributed.

In the words of Chapman:

"The Economics of distribution or the pricing of factors accounts for the sharing of the wealth produced by a community among the agents or the owners of the agents which have been active in its production".

Distribution is Functional and not Personal. I would like to make it clear that the pricing of factor of production discussed here is functional and not personal. By this we mean that when the reward of each factor is distributed, it is not paid to an individual but to the agents or factors of production. The individual may represent in his person as landlord (if he used his own land), the labor (if he works himself), the capitalist (if he has contributed his capital) and. the entrepreneur (if he organizes the business). The price of land, labor, capital and organization which is termed as rent, wages, interest and profit is in fact their functional income. They are the costs from the point of view of the firm but income from the point of view of factors of production.

Why a Separate Theory of Factor Pricing?

It is often pointed out that the price of a factor of production is determined, like the price of a commodity, by the equilibrium of forces of demand and supply, If the demand of the particular factor rises, other things remaining the same, its price goes up and vice versa. The other economists who differ with this view are of the opinion that the theory of value is not applicable in its entirety to the pricing of factor of production. They believe that on the side of demand there is similarity between the two, because the value of a particular commodity and the price of a factor of production are governed by marginal utility and marginal productivity respectively. But on the side of supply, much difference exists between them. On the side of supply, the price of a particular commodity is determined by its marginal cost of production. But in case of labor or an acre of land or a unit capital, it is not possible to ascertain exactly its costs of production. The other dissimilarity between the two is that the supply of a factor of production cannot be readily adjusted as we can do in the case of a

commodity. For example, if the demand of a particular type of labor increases or the rent of land rises-up, it will not be possible to increase their supply immediately.

In the words of Marshall:

"Free human beings are not brought up to their work on the same principle of a machine, a house of a slave. If they were, there would be very little difference between the distribution and the exchange side of value".

Thus, we come to the conclusion that though the value of the commodities and the prices of the factors of production are determined by demand and supply yet, due to some differences of the factors of production on the side of supply, there is a need for a separate theory of distribution.

Theories of Factor Pricing:

The theory of factor pricing is concerned with the principles according to which the price of each factor of production is determined and distributed. The distribution of factors of production can be of two types, namely personal and functional. Personal distribution is concerned with the distribution of income among different individuals. It is associated with the amount of income generated not with the source of income. For example, an individual earns Rs. 20,000 per month; this income can be earned by him/her by wages, rents, or dividends. On the other hand, functional distribution is associated with the distribution of income among different factors of production as per their functions.

It is concerned with the source of income, such as wages, rents, interests, and profits. In regard of distribution of factors of production, there are two theories, namely marginal productivity theory and modern theory of factor pricing.

Marginal Productivity Theory (Neo-Classical Version):

The marginal productively theory is an attempt to explain the determination of the rewards of various factors of production in a competitive market. The marginal productivity theory of resource demand was the work of many writers, it was widely discussed by many economists like J.B. Clark, Walras, Barone, Ricardo, Marshall. It was improved, amended and modified later on. The final version of the theory as stated by Neo Classical economists is given below.

Definition and Meaning:

By marginal productively theory of a factor is meant the value of the marginal physical product of the factor. It is worked out by multiplying the price of the output per unit by units of output.

Formula:

VMP = MP x P

Value of Marginal Product (VMP) = Marginal Physical Product x Price

The marginal productivity theory contends that in a competitive market, the price or reward of each factor of production tends to be equal to its marginal productivity.

Explanation:

The demand for various factors of production is a derived demand. The resources do not usually directly satisfy consumer wants. They are demanded because these help in producing goods and service's. An entrepreneur while hiring a factor of production calculates the contribution which it makes to total production and the amount which has to be paid to it in a competitive market. An individual firm cannot influence the price of the factor of production. It has to take the ruling price in the market as given. The firm can employ as many number of factors units as it wishes at the ruling price of the factor.

It has been observed that as a firm hires increasing amounts of a variable factor to a combination of fixed amounts of other factors, the marginal productivity increases up to a certain stage of production and then it begins to decline. The buyers of a factor of production while deciding whether one more unit of factor should be employed or not, compares the net addition which it makes to total revenue and the cost which has to be incurred on engaging it. If the marginal revenue product of a factor is greater than its marginal cost, the entrepreneur will employ that unit because it earns more than what he has to spend on employing the additional unit.

As he employs more and more units of factor of production, the marginal revenue productivity increases up to a certain limit and then it begins to decrease. On the other hand, marginal cost decreases as production is expanded. After a certain point, when business becomes difficult to manage, marginal cost begins to increase. When both marginal revenue productivity of a factor and its marginal cost are equal, (MRP = MC) the entrepreneur stops giving further employment to a factor of production.

The last variable unit which an employer just thinks it worthwhile employing is called the marginal unit and the addition made to the total production by the employment of the marginal unit is called marginal productivity or marginal revenue productivity. The entrepreneur will pay the remuneration to each factor of production according to its marginal revenue productivity.

Schedule and Example:

The marginal productivity theory is explained with the help of a schedule:

Demand for a Factory or Resource (Daily):

Units of Resource (Labor) (1)	Total Product Meters (2)	Marginal Productivity MP (3)	Product Price ($) P (4)	Total Revenue (5)	Marginal Revenue (Product) (6)
1	8	8	10	80	80
2	15	7	10	150	78
3	20	5	10	200	50
4	23	3	10	230	30
5	25	2	10	250	20
6	26	1	10	260	10
7	26.5	5	10	265	5

Rule For Employing a Factor of Production:

An entrepreneur is to maximize profits. While hiring any resource, he compares the marginal revenue product of a factor with the additional cost he has to pay. So long as the marginal revenue product is greater than the marginal cost of the factor, he will continue hiring it. When the MRP of the factor is equal to its MC, he will stop engaging more labor. The firm at this point will be in equilibrium and maximizing profit. In the table above, the entrepreneur adds more to its total revenue than to total cost up to the fifth unit. When he hires the sixth labor, the MRP = MC. The firm here is in equilibrium and maximizing profits, In case, the 7th worker is hired, the MRP is then < MC. The firm suffers loss and is not reaping the optimum profit.

Least-Cost Combination of Resources:

There are a number of resources which are required for the production of a commodity. The entrepreneur can maximize his profit only if the least cost combination can be arrived at by equalizing the ratios between the marginal products and the prices of the different factors of production. If the ratios differ, then it is in the interest of the employer to make necessary adjustment by employing more of one factor and less of other till be ratio between the marginal productivity and price of each factor becomes equal. The least cost combination will be achieved, when:

MRP of Factor A = MRP of Factor B = MRP of Factor C = MRP of Factor N

Price of Factor A Price of Factor B Price of Factor C Price of Factor N

In the long run, under conditions of perfect competition, the price of each factor of production is already determined in the market. An individual entrepreneur cannot affect the market price of various factors of production by his own individual action as his demand for a factor or factors forms only a small part of the total demand. He is a price taker. So, what he does is that he goes on employing each factor of production up to a point which makes marginal revenue productivity of the factor equals to its price.

Diagram:

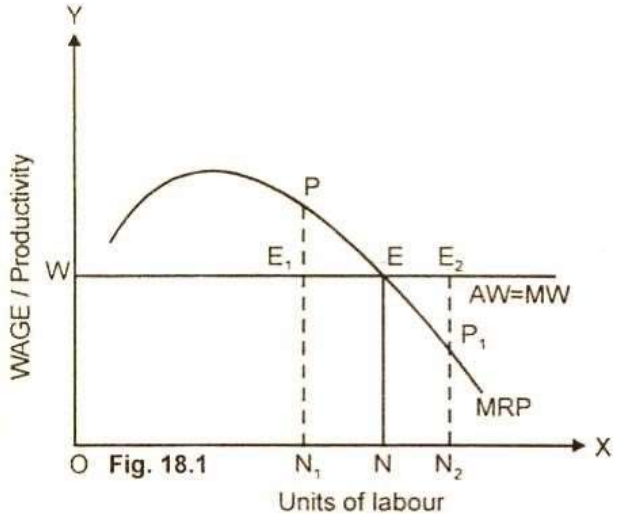


Fig. 18.1

In the figure 18.1, the supply of labor is perfectly elastic. The wage (W) is equal to average wage (AW) and marginal wage, (MW) = W = AW = MW. At point E, the MRP of labor is equal to marginal wage (MW). The producer is-in equilibrium at point E. He will employ ON units of labor because when ON units of labor are employed, the marginal revenue productivity of

labor MRPL = Wage. To the left of E the MRP of labor is higher than wage (MRP > W), the producer will increase the units of labor. To the right of the MRPL < wage, so the firm will curtail the units of labor. It is only at point E, the firm is in equilibrium where

MRPL = Wage.

Assumptions:

The theory of marginal productivity is based on the following assumptions:

(i) Factor identical: It assumes that all the units of a factor are exactly alike and so can be substituted to any extent.

(ii) Factors can be substituted: It is assumed that the various factors of production, which help in the production of particular commodity can also be substituted for one another. We can use more of labor or less of land or more of labor and less of capital.

(iii) Perfect mobility of factors: It is assumed that the various factors of production can be moved from one use to another.

(iv) Application of law of diminishing return: The theory rests en the assumption that the law of diminishing returns applies also to the organization of a business.

(v) Perfect competition: It is based on the assumption that the reward of each factor of production is determined under conditions, of perfect competition and full employment.

Criticism:

The marginal productivity theory has been subjected to scathing criticism on the following grounds.

(i) Theory based on unrealistic assumptions: The theory is based on a very wrong assumption, that all the units of a factor of production are homogeneous. The fact is that neither all land, nor all labor, nor all capital, nor all organizations are alike. We know it very well that labor varies in efficiency; capital in form, land in fertility and entrepreneur in ability.

(ii) Factors are not perfect substitutes: It is also wrong to assume that the factors of production are close substitutes for one another. Labor is not a perfect substitute for capital, and vice versa. So is also the case with land in relation to other factors of production.

(iii) Law of proportionate return: The theory rests on a very wrong assumption that the law of diminishing returns applies to a business. Is this not a fact that when there is

proportionate increase in the factors of production, "the law of diminishing return is held in, abeyance in all businesses.

(iv) Wage cuts does not determine demand: According to this theory, if employment is to be increased, the wages should be lowered. J.M. Keynes vehemently disagrees with this view and says that this may be true in case of an individual firm or industry but it is wrong when it is applied to aggregate or effective demand.

(v) Difficulty In the measurement of MP: The other criticism levied on the marginal productivity theory by Tausslng, Davenport and Ardiance is that production is the outcome of joint efforts of different factors and so it is not possible to separate the contribution of each factor individually.

(vi) Effect of withdrawal of a factor: Hobson criticizes this theory on the ground that if a factor of production which works in co-operation with other factors is withdrawn, it will disorganize the whole business and it may result in the decrease of production which may be greater than the addition made by the factor withdrawn.

(vii) Factor units cannot be raised: Another criticism levied by Hobson on the marginal productivity theory is that there are many cases in which the variations in the use of factors is not possible. The proportion in which factors of production are to be employed is already determined by the technical conditions prevailing in a business. For instance, there are many machines for the working of which only one labor is required. If we engages two laborers, it will not be of much use. A variation in proportions in such cases are not possible, therefore, the marginal productivity of such a factor cannot be ascertained.

(viii) One sided: The marginal productivity theory is also criticized on the ground that it assumes the supply of a factor or factors as fixed while in reality the remuneration paid to a factor does influence its supply. As the theory approaches the problem only from the side of demand and neglects the effect of supply, therefore, it cannot be accepted as true.

(ix) Static theory: Marginal productivity theory neglects the problem of technical change altogether. It is therefore, static theory.

Conclusion:

From all that we have said above, It can be concluded that the Theory is true only under the assumption of perfect competition and state of full employment Fraser has commented on the theory of distribution as such:

"No economist would claim that theory is as yet complete, even as a purely academic structure of framework. It has the defects of its quantities being simple and self-consistent; it is abstract and impersonal it is quantity of sins both of omission and commission; its postulates are unduly rigid and narrow".

In the words of Samuelson:

Marginal productivity theory is not a theory that at explains wages, rent or interest; on the contrary it simply explains how factors of production are hired by the firms, once their prices are known".

Definition and Meaning of Rent:

The term 'rent' is an unfortunate one. Its meanings in Economics differ from the ordinary usage. In the every day speech, the term, rent is applied to the periodic payments made regularly for the hire of a particular asset.

For example, the payments made by a tenant to the owner of a house, or factory or land on weekly, monthly, or yearly basis is a rent in the popular sense.

In Economics:

"The concept of rent or to be more precise 'economic rent' is used in a special sense. According to the classical economists, rent is a price of land. It is a payment made by a tenant farmer to the landlord for the use of original and Indestructible powers of the soil".

Modern Concept of Rent:

The modem economists do not use the concept of economic rent in the restricted some. They apply rent to all the factors of production which do not have a perfect elastic supply. According to them:

"Economic rent is a surplus or excess over the transfer earnings".

In the words of Boulding:

"Economic rent may be defined an any payment to a unit of production which Is in excess of the minimum amount necessary to keep that factor In its present occupation".

Example:

For example, a typist is ready to work for $4600 per month in a college but he is paid $4900 per month. This is because of the fact that the market demand for the typists is greater than its supply. So long as the supply cannot be adjusted to demand the typist will continue earning a payment in excess of $4600 of the amount which is necessary to keep him in that occupation. This monthly surplus money of $300 (4900 - 4600 = $300) is an economic rent.

Ricardian Theory of Rent/Ricardian Model of Rent:

Definition:

The theory of economic rent was first propounded by the English Classical Economist David Ricardo (1773 -1823). David Ricardo in his book. "Principles of Political Economy and Taxation", defined rent as that:

"Portion of the produce of the earth which is paid to a landlord on account of the original and indestructible powers of the soil, Ricardo in his theory of rent has emphasized that rent is a reward for the services of land which is fixed in supply. Secondly, it arises due to original qualities of land which are indestructible". (The original indestructible powers of the soil include natural soil, fertility, mineral deposits, climatic conditions etc., etc.).

Assumptions:

(i) Rent Under Extensive Cultivation.

(ii) Rent Under Intensive Cultivation.

Explanation and Example of Ricardian Theory of Rent:

Rent Under Extensive Cultivation:

According to Ricardo:

"All the units of land are not of the same grade. They differ in fertility and location. The application of the same amount of labor, capital and other cooperating resources give rise to difference in productivity. This difference in productivity or the surplus which arises on the superior units of land over the inferior units is an economic rent".

The Ricardian theory of rent is explained by taking an example:

Schedule:

Grades of Land	Yield in Quintals per Acre	Price per Quintal ($)	Total Return ($)
A	50	50	2500
B	35	60	2100
C	20	70	1400
D	15	80	1200

In the above schedule, we assume that there are four grades of land A, B, C and D in an uninhabited country. A grade land is more fertile than B grade land. B grade land is superior to C grade and so is C grade to D grade land.

Following Ricardo let us assume, a batch of settlers migrate to this island. They begin cultivating A grade land which yield 50 quintals of wheat per acre. Let us suppose now that the population of that country increases and A grade land is not sufficient to meet the food requirements of the growing population. The inhabitants of that country shall then have to bring under cultivation B grade land. With the identical amounts of labor and capital. B grade land yields 35 quintals of wheat per acre. A surplus of 15 quintal of wheat {50 - 35 = 15) which arises with the same outlay on A grade land is an economic rent. B grade land being a marginal land gives no rent. When owing to the pressure of growing population and a rise in demand for food, C grade land is brought under cultivation, it yields only 20 quintals of wheat with the identical amount of labor and capital. With the cultivation of C grade land, the economic rent of A grade land is now raised to 30 quintals per acre: (50 - 20 = 30) and that of B grade land 15 quintals of wheat per acre. C grade land is a no rent land as it is cultivated at the margin.

If the expenses of production on A grade of land yielding 50 quintals of wheat are $2500 and the market price of total yield on A grade land is also $2500, then A grade land only will be brought under cultivation. A grade land here is the marginal land. If the price of agricultural produce increases ($60 per quintal) and the expenses of producing wheat on B grade land

are equal to the market price of the produce i.e.. $2100, then B grade of land which was hitherto neglected would be brought under cultivation. B grade land then becomes the marginal land. Similarly, D grade land will be the marginal land when it compensates the cultivator by giving a yield of $1200, and enjoys no surplus over cost. Marginal land is thus not fixed. It varies with the changes in the price of agricultural produce. If population increase still further and the demand for food increases, then D grade land will be brought under plough. The surplus or economic rent of A grade land will go up to 35 quintals (50 - 15 = 35), of B grade 20 quintals, of C grade 5 quintals. D grade land being the marginal land yields no rent.

Diagram:

The Ricardian model is now explained with the help of a diagram:

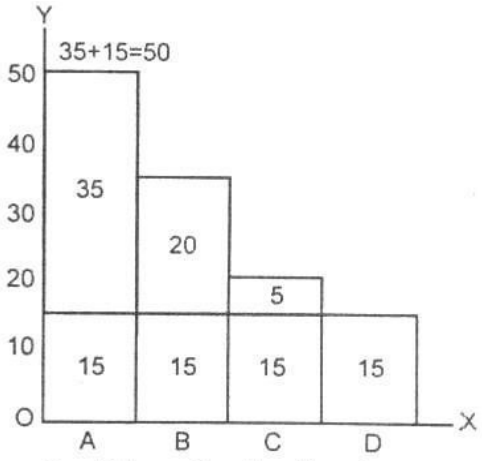


Fig. 19.1 Grades of Land

In the figure (19.1), the various grades of land in the descending order of fertility are plotted on OX axis and yield per acre is shown on OY axis. The cultivated area due to pressure of population and the rising demand for food is pushed to D grade of land which is a marginal land. The owner of A grade of land gets a surplus, or economic rent of 35 quintals of wheat, of B, 20 quintals and on C grade, the rent is 5 quintals of wheat.

Rent Under Intensive Cultivation:

The theory of rent which has been discussed above applies to Intensive margin of cultivation. The surplus or economic rent also arises to the land cultivated intensively. This occurs due to the operation of the famous law of diminishing returns.

When the land is cultivated intensively, the application of additional doses of labor and capital brings in less and less of yield. The dose whose cost just equates the value of

marginal return is regarded marginalor no rent dose. The rent arises on all the infra-marginal doses.

For example, the application of first unit of labor and capital to a plot of land yields 25 quintals of wheat, the 2nd dose gives 15 quintals of wheat and with third it drops down to 10 quintals only, the farmer applies only 3 doses of labor and capital as the total outlay on the third does equals its return. The rent when measured from the third or marginal dose is 15 quintal (25 - 10 = 15) on first dose and 5 quintal on second dose (15 -10 = 5). The third dose is a no rent dose.

Criticism of Ricardian Theory of Rent:

(i) No Original and Indestructible Power: Ricardo is of the opinion that rent is paid due to the original and indestructible powers of the soil. It is pointed out that there are no powers of the soil which are indestructible. As we go on cultivating a piece of land time and again, its fertility gradually diminishes. To this criticism, it is replied that there are properties of the soil, such as climate situation, sunshine, humidity, soil composition, etc., which are infect original and indestructible.

(ii) Wrong Assumption of 'No Rent Land': Ricardo assumes the existence of no-rent land. A land which just meets the cost of cultivation. The modern economists are of the opinion that if a plot of land can be put to several uses, then it does yield rent.

(iii) Rent Enters Into Price: According to Ricardo, rent does not enter into price. The modern economists are of the opinion that it does eater into price.

(iv) Wrong Assumption of Perfect Competition: Ricardo is of the opinion that perfect competition prevails between the landlord and the tenant, but in the actual world, it is imperfect competition which is the order of the day.

(v) All Lands are Equally Fertile: Ricardo assumes that rent arises due to difference in the fertility of the soil. But the modern economists assert that if all lands are equally fertile, even then the rent will arise. The rent can arise: (a) if the produce is not sufficient to meet the requirements of the people, and (b) due the operation of the law of diminishing returns.

(vi) Historically Wrong: Carey and Roscher have criticized the orders of cultivation assumed by Ricardo. They are of the opinion that it is not necessary that A grade land will be cultivated first, even if it lies far away from the city. To this it is replied by Walker that when Ricardo uses the words 'best land' he means by it the land which is superior both in fertility and in situation.

(vii) Neglect of Scarcity Principle: It is pointed out by the modem economists that the concept of rent can be easily explained with the help of the scarcity principle and so there is no need to have a separate theory of rent.

Definition of Interest:

"Interest is the price paid by the borrower to the lender for the use of borrowed funds during a certain period".

In the words of Eastham:

"Interest is the payment for parting with the advantage of liquid control of money balances".

According to Batch:

"Interest is the price paid for the use of money or credit".

It is normally expressed as a percentage on the funds loaned or borrowed.

In the words of J. M. Keynes:

"Interest is the premium which has to be offered to induce people to hold their wealth in some form other than hoarded money".

Example:

For instance, if a man gives a loan of $1000 to a needy person for a year and charges 9% per annum as the price for the use of loaned funds, we say that the rate of interest in 9% per annum.

The payment which is generally made for the use of money loan able funds is in fact a gross interest.Pure interest is only a part of the gross interest.

Keynesian Theory of Interest/Liquidity Preference Theory of Interest:

Definition:

J.M. Keynes in his epoch-making book the General Theory of employment, Interest and Money, has put forward a new theory of interest. According to him:

"Interest is not the price for waiting. It is not the remuneration necessary to call forth saving because a man may save money, bury it in his backyard and get nothing from it in the way of interest. Interest is the reward for surrendering liquidity, i.e., a reward for dispensing with the convenience of holding money immediately available".

Example:

Just to make it more clear, we take an example. Suppose, you lend a sum of $1000 to a person for six months in return for a promise to get something extra in addition to the sum borrowed. If the borrower returns you the same amount of money after six months, will you be interested to part with or lend your ready money? Well, if you are a philanthropist, then you may. But in case you are not, then some incentive must be given to you for dispensing with the convenience of holding money immediately available.

Interest is, thus, the reward for parting with liquid control over cash for a specific period, or we say:

"Interest is the payment for parting with the advantages of liquid control of money balance".

Here, a question can be asked as to why the need for liquidity arises when people can earn interest by lending their ready money. Keynes has given three distinct motives of demand for money or holding money in liquid form.

(i) Demand for Money:

The main components of demand for money are as under:

(a) Transaction motive.

(b) Precautionary motive.

(c) Speculative motive.

(a) Transaction motive. Transaction demand for money refers to the demand for money to hold cash balances for day to day transactions. The transaction motive relates to the desire of households and firms to keep a certain amount of cash in hand in order to bridge the interval between the receipt of income and expenditure. The transaction demand for money depends upon (i) size of income (ii) time gap between the receipt of income and (iii) spending habit of the people.

Formula:

In symbols we can write:

$L1 = F(y)$

Here:

L1 is the transaction demand for money and F(y) shows it to be a function of income.

(b) Precautionary motive. The precautionary motive relates to the desire of households and business concerns to hold a certain portion of the total ready money in cash in order to meet certain unforeseen or unexpected expenses like fire, theft etc. This demand for money depends upon (i) size of income, (ii) nature of the people and (iii) foresightedness of the people.

As transaction and the precautionary motives for holding cash depend upon income, as they are income elastic, Keynes has put them together. It is expressed in symbols us:

$L2 = F(y)$

Which means that the liquidity preference on account of the two motives called L2 is a function of income.

(c) Speculative motive. The speculative motive relates to the desire of the households and firms to keep a portion of their resources in ready cash in order to take advantage of changes in the interest rates. If people expect a rise in the rate of interest in the future, they will try to hold money in cash in order to lend it in the future. Conversely, if they expect a fall in the rate of interest, they will at once like to invest money now in order to avail themselves of the advantages of high rate of interest. Thus, we find that an expected rise in rate of interest stimulates liquidity preference and an' expected fall has the opposite effect. It is written in symbols as:

L3 = F(r)

The liquidity preference for speculative demand for money is a function of expected changes in the rate of interest.

We have discussed in all the three factors which exercise powerful influence on the people's desire to hold money. The first two factors, i.e. the transaction motive and the precautionary motive are not very much Influenced by; the changes in the rate of interest, but the third factor, viz, speculative motive is very sensitive to the changes in the interest rate. The major portion of money which people want to hold in the form of cash infact is meant for speculative purposes. When the rate of interest in a community is high, people hold less money in the form of cash because by lending it to other, they earn a sufficient amount of money. Conversely if the rate of interest is low, people will not be very anxious to lend money. So the total money held by individuals and business firms will be high. In short, the demand foe money to hold in cash under speculative purposes is a function of the current rate of interest. It increases as the interest rate falls and decrease as the interest rate rises. We can say that demand for money for speculative motive is a decreasing function of the rate of interest as is shown in the fig. 21.2.

Diagram/Curve:

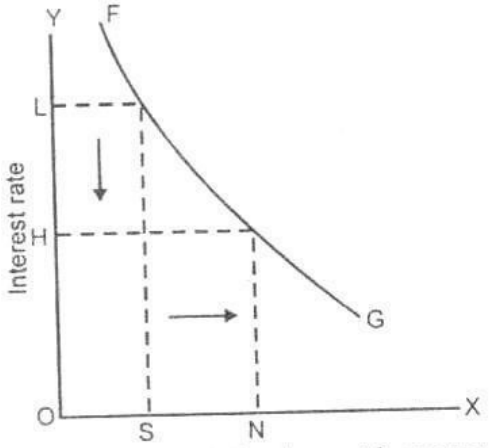


Fig. 21.2 Speculative demand for money

In fig, 21.2, along OX is measured the demand for money which people want to hold in the form of cash and along OY is shown the rate of interest. FG is the liquidity preference curve which slopes downward from left to right. When rate of interest is high, i.e. OL, the demand for money to hold in the form of ready money or cash is OS only. When the interest rate falls to OH, then the demand for money to hold in cash increases to ON.

(ii) Supply of Money:

The supply of money depends upon the currency issued by the central bank or the policy followed by the government of the country. The supply of money consists of currency and demand deposits. In the short run, the supply of money is assumed to be constant. Determination of the rate of interest.

According to J.M. Keynes:

The rate of interest is determined at a where demand for money is equal to the supply of money.

M = Sm

M = Total demand for money.

Sm = supply of money.

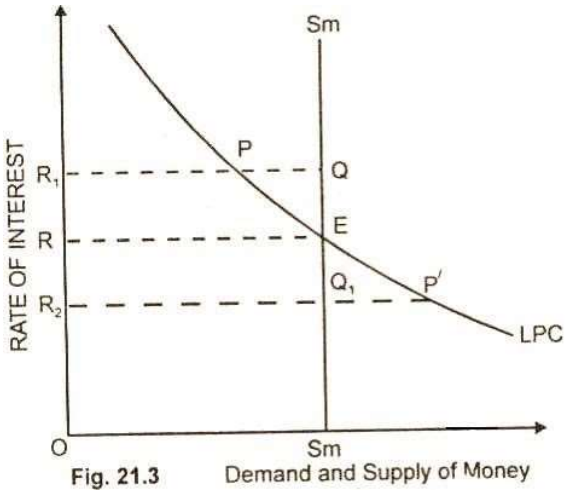


Fig. 21.3 Demand and Supply of Money

In the figure (21.3), the rate of interest as determined by the interaction of the forces of demand and supply of money is OR, if there is any deviation from this interest rate, it will not be stable. For example, if the interest rate is OR1 it will lead to more supply of money (by PQ) than its demand. This will lead to fall in the interest rate. The interest rate OR2 is also not stable. Here demand for money is more than its supply by P/Q1. This will lead to rise in interest rate.

Criticism:

Keynes theory of interest is criticized on the following grounds:

(i) Indeterminate: J M. Keynes has criticized the classical theory of interest as being indeterminate. According to him, these theories do not take income changes into account. The fact is that Keynes theory of interest itself assumes a particular level of income and does not take income changes into account. As such it is also indeterminate.

(ii) Ignores real factors: The theory put forward by Keynes offers only a monetary explanation of the determination of rate of interest. It altogether ignores the real factors such as marginal productivity of capital, thrift etc., which work behind the demand for money and supply of it.

(iii) No liquidity without saving: According to Keynes, interest is the reward for parting with liquidity. It is in no way as inducement for saving. According to Jocob Viner, it is saving which makes funds available to be kept as liquid. Without saving, there can be no liquidity to surrender. Keynes has ignored this aspect in the determination of rate of interest.

(iv) Interest in the short run: Keynes theory explain the determination of the rate of interest in the short run. It fails to explain the rate of interest in the long run.

(v) Not an integrated theory: According to Hicks, Learner, the rate of interest along with the level of income is determined by (a), marginal efficiency of capital, (b) consumption function, (c) the liquidity preference function and (d) the quantity of money function. Keynes has discussed the last two elements in his interest theory and has ignored the. first two elements. The theory of interest is, thus, not properly integrated by Keynes.

Wages

Meaning.

Wages are a payment for the services of labour whether mental or physical. It includes all payments (allowances etc.) which are made to labour. Wages include fees, commissions and salaries. In Economics wages is that part of the National income which every type of labourer gets for his work.

Kinds of wages:

Time wages:

Time wages may be paid weekly, fortnightly or monthly and partly at the end of the year in the form of bonus. These are time wages. But the bonus may be a task wage if a work is finished within a specified period or before that.

Sometimes time wages are supplemented by wages earned by working extra time. They are overtime wages.

Price wages: wages are also paid in accordance with the amount of work done. For example, in a shoe factory of a tailoring department wages are paid as per one pair of shoes or pants manufactured.

Money wages or nominal wages : relate to the amount of money income received by workers for their services in production.

Real wages: include the various facilities benefits and comforts which workers receive in terms of goods and services for their work in addition to the money wages of workers. Real wages depend upon the price level, money wages, nature of work, future prospects, trade expenses, social prestige and condition of work.

The Modern Theory of wages

According to the modern theory of wages, wage rate like any price is determined by the Demand for and supply of Labour. This theory assumes perfect competition and absence of trade unions, what forces determine the demand for and supply of labour.

Assumptions of the Theory.

The theory is based on the following assumptions:

1. There is full employment of labour vacant jobs are filled at the same time.
2. There is perfect mobility of workers in different employments.
3. There are many workers and employers in the labour market and no single worker or employer can influence the wage rate.
4. Workers and employers have perfect knowledge of labour market. Employers know where the workers are available and at what wage rate.
5. There is freedom of occupation. Any worker can work with any employer.

Demand for labour.

The demand for labour is dependent on various factors such as:-

a. **Demand for a product:**
   The demand for labour is derived from the demand of the product it produces. In case the demand for the product increases, the demand for labour would also increase. However, this is the expected demand of the product and not the current demand. Therefore the expected demand of the product determines the demand for labour.

b. **Other factors of Production:**
   The price and amount of other factors of production affects the demand for labour. For example, if other factors of production are expensive then the demand for labour would be high. Similarly, an increase in the demand for technology would reduce the demand for labour.

Marginal Productivity

Marginal Productivity is the most important factor that helps in the determination of demand for labour. An employer hires labour to increase his profit. An employer would employ labour until the increase in number of labour would increase the net output but at the diminishing rate. He will not hire anymore labour when the output produced by an additional labour is equal to the additional cost incurred to hire that labour. Therefore the wages paid to the labour is equal to the additional output produced by that labour.

Supply of labour.

Supply of labour refers to the number of hours spent by labour in the factor market. The relationship between wages and the quantity of labour is direct one. Greater quantity of labour is offered at rising wage levels.

Factors affecting the supply of labour.

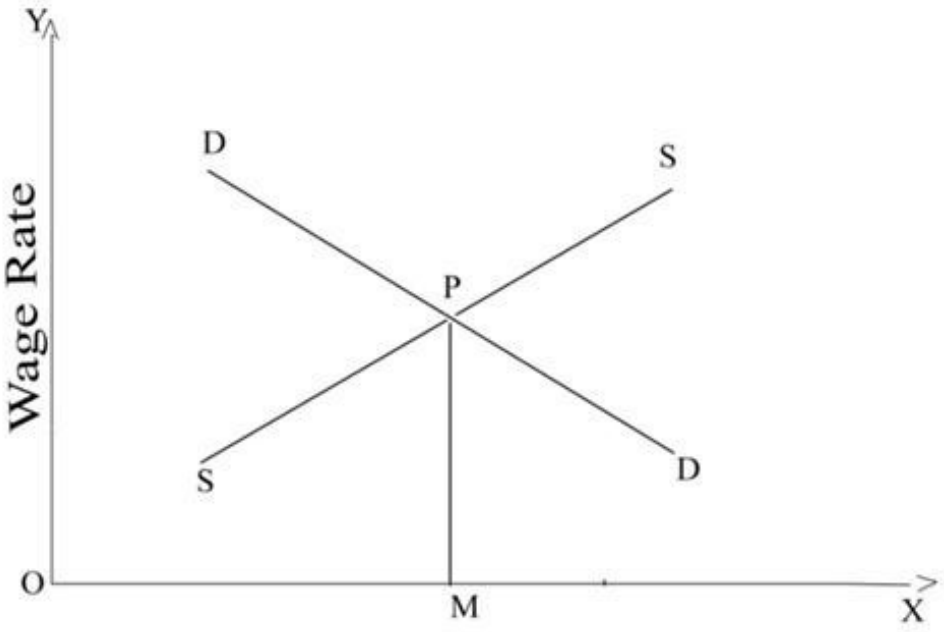
In an economy there are several factors that influence the supply of labour:-

a. **The rate of population growth.**
b. **The ages and sex distribution of population.**
c. **The working hours.**
d. **The normal period of education and training.**
e. **Labour laws regarding the employment of child and woman labour.**
f. **The mobility of labour.**

It is the mobility of labour which determines the elasticity of the supply of labour.

Wage determination

The determination of wages as a result of the intersection of the two curves is shown in the below diagram



Quantity of Labour

In the above diagram, DD is the demand curve for labour. It slopes downwards to the right. SS is the supply curve of labour. It slopes upwards to the right. The two curves cut each other at point P. PM is the equilibrium rate of wages while OM represents the quantity of labour demanded and supplied. At a wage higher than PM, some workers will not be able to find employment. So, the wages will come down till all the workers can be employed. If the wage rate is below PM, the demand for workers will exceed the supply and the wage rate will rise through competition among the employers of labour.

Profit Meaning

In Economics, the term profit is defined as the net income of a business after all the other costs – rent, wages and interest etc. have been deducted from the total income. The early classical economists regarded profit as accruing to the capitalist who supplied capital and owned the business. The first systematic explanation of the nature of profit was given by Marshall in terms of demand and supply of entrepreneurs. According to Clark Knight and

Schumpeter, “It is an income which arises out of change” Walker looked upon profit as the reward of the entrepreneur with a superior ability than others. Hawley ascribed it to the entrepreneurs risk taking. The greater the risk undertaken, the larger the profit.

Gross profit and Net profit

Gross profit includes.

- **Rent on land**
- **Interest on capital.** - **Wages of management** - **Depreciation charges.**
- **Insurance charges.**

Net profit or pure profit.

Net profit or pure profit is the residue left to the entrepreneur after deducting rent on land , interests on capital, wages of management, depreciation charges and insurance charges.

Net profit includes:-

- **Reward for uncertainty bearing.**
- **Reward for co-ordination.**
- **Rent of ability.**
- **Reward of innovation.**
- **Monopoly gains.**
- **Windfalls.**

The Innovation theory of Profit.

This theory was propounded by Prof. Joseph A . Schumpeter. Schumpeter attributes profits to dynamic changes resulting from an innovation. He takes a capitalist closed economy which is in a stationary equilibrium. This equilibrium is characterized by

Schumpeter a “Circular flow” which continues to repeat itself forever. In such static state there is perfectly competitive equilibrium. The price of each product just equals its cost of production and there is no profit.

Only exogenous factors like weather conditions can cause changes in the circular flow temporarily and the economy would again reach a circular flow position.

It is the entrepreneur who disturbs the channels of this circular flow by the introduction of an innovation. Thus Schumpeter attributes the role of an innovator to the entrepreneur and not to the capitalist. The entrepreneur introduces something entirely new.

The entrepreneur gets credit from the banks and uses his ability to untap the existing technical knowledge. This brings about an innovation which disturbs the circular flow of production in the economy and leads to the emergence of profits.

According to Schumpeter, an innovation may consists of :-

a. **The introduction of a new product.**
b. **The introduction of a new method of production.**
c. **The opening up of a new market.**
d. **The discovery of a new source of raw material and**
e. **The reorganization of an industry.**

When anyone of these innovations is introduced by an entrepreneur, it tends to reduce the cost of production of the commodity below its selling price profits emerge.

So long as this particular innovation remains a secret, the entrepreneur continues to earn profits. But this state of affairs cannot continue indefinitely. Other entrepreneurs follow this innovation. Competition in factor services tends to raise the cost of production and increase in production brings prices downward. This dual tendency leads to the disappearance of profits.

The emergence of profits due to an innovation is not peculiar to only one industry. Innovation in one field may induce other innovations in related fields. Profits may continue to arise and disappear. They are a temporary phenomena which accrue to the entrepreneur who innovates. But after sometime when it becomes common, profits disappear.

Criticism of the theory.

1. The element of uncertainty finds no place in Schumpeter's innovations theory profit is not regarded as the reward of uncertainty which is not a correct view for every innovation is associated with uncertainty.
2. Innovation is not the only function for which entrepreneur earns profit. Entrepreneur earns profit because of his organizational ability when he is able to reduce business costs.
3. Schumpeter regards the risk taking as the function of capitalist and not of entrepreneur. But in his book capitalism, socialism and democracy, he says that the rapid economic development of the 19th century in capitalist economies was partly due to many innovations made by entrepreneurs who happened to be risk takers. It is the shareholders of modern corporations who undertake risks and thus earn profits.

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Unit-iv.

Absolute Cost Advantage Theory

The principle of absolute advantage refers to the ability of a party (an individual, or firm, or country) to produce a greater quantity of a good, product, or service than competitors, using the same amount of resources. Adam Smith first described the principle of absolute advantage in the context of international trade, using labor as the only input. Since absolute advantage is determined by a simple comparison of labor productiveness, it is possible for a party to have no absolute advantage in anything; in that case, according to the theory of absolute advantage, no trade will occur with the other party.

Assumptions of the Theory

1.Trade is between two countries

2.Only two commodities are traded

3.Free Trade exists between the countries

4.The only element of cost of production is labor.

Smith argued that it was impossible for all nations to become rich simultaneously by following mercantilism because the export of one nation is another nation's import and instead stated that all nations would gain simultaneously if they practiced free trade and specialized in accordance with their absolute advantage. Smith also stated that the wealth of nations depends upon the goods and services available to their citizens, rather than their gold reserves. While there are possible gains from trade with absolute advantage, the gains may not be mutually beneficial.

Smith reasoned that trade between countries shouldn't be regulated or restricted by government policy or intervention. He stated that trade should flow naturally according to market forces. In a hypothetical two-country world, if Country A could produce a good cheaper or faster (or both) than Country B, then Country A had the advantage and could focus on specializing on producing that good. Similarly, if Country B was better at producing another good, it could focus on specialization as well. By specialization, countries would generate efficiencies, because their labor force would become more skilled by doing the same tasks. Production would also become more efficient, because there would be an incentive to create faster and better production methods to increase the specialization. Smith's theory reasoned that with increased efficiencies, people in both countries would benefit and trade should be encouraged. His theory stated that a nation's wealth shouldn't be judged by how much gold and silver it had but rather by the living standards of its people.

Implications (Significance) of Absolute Advantage Theory

1. More quantity of both products
2. Increased standards of living of both countries
3. Increased production efficiency
4. Increase in global efficiency and effectiveness

5. Maximization of Global productivity and other resources productivity

Criticism

No absolute advantages for many countries

Country size varies

Country by country differences in specialization

Deals with labor only and neglects other factors (Variety of resources)

Neglected Transport cost (It plays significant role)

Theory of comparative cost or The theory of comparative advantages

The classical theory, well known as the principle of comparative costs was first developed by David Ricardo. The theory went through many additions, improvements and refinements at the hands of John Stuart Mill, Cairness and Bastable. The best modern exponents of the theory are American economist Taussing and the German economist Haberler.

The classical theory of international trade states that every country produces and exports those goods in the production of which it has cost advantages and imports those goods in the production of which it has cost disadvantage.

Assumptions:-

(1). It is assumed that there are only two countries, they enter into international trade and they produce only two goods with the factor of production i.elabor.

(2). All units of labor are homogeneous.

(3). Cost ratio remains constant in both the countries.

(4). There is perfect mobility of factors of production within a country and their perfect, immobility between the countries.

(5). There is absence of transport cost.

(6). All factors of production are fully employed.

(7). There is existence of Barter economy.

(8). There is existence of free trade etc.

Comparative Cost Difference:-If there are comparative differences in production costs between two countries, international trade will inevitably take place between them. The reason is that these comparative differences in production costs will benefit both the countries. This can be illustrated with the help of following example.

= India can produce with 1 unit of labour either 2 units of jute or 1 unit of cotton.

= Egypt can produce with 1 unit of labour either 2 units of jute or 2 units of cotton.

In the above example, there are comparative difference in production costs between India and Egypt. Hence, trade between the two countries will be beneficial to both. If there is no trade between them, the exchange ratio between jute and cotton in the two countries will be as follows:

India 1 unit of jute = ½ unit of cotton
Egypt 1 unit of jute = 1 unit of cotton

Now, if India produces jute and Egypt cotton, international trade will take place between the two countries and it will benefit both the countries. By exporting 1 unit of jute. India can obtain from Egypt on the basis of its (Egypts) exchange ratio 1 unit of cotton.

Likewise, by exporting 1 unit of Cotton Egypt can obtain 2 units of jute from India. Thus international trade will benefit both the countries. The reason is that if there was no trade between them, India could produce only ½ unit of cotton as against 1 unit of jute. Likewise, Egypt could produce only 1 unit of jute as against 1 unit of cotton. But due to international trade Egypt can now obtain 2 units of jute from India in exchange for 1 unit of cotton.

It should however, be remembered that the cost of production of jute in Egypt is the same as in India. Even then, Egypt stands to benefit more by buying jute from India. Thus, permanent international trade between the two countries is possible only if there are comparative difference in production costs between the two countries. This is known as the theory of comparative costs.

Criticism of the Theory:-

1. The assumptions on which comparative cost theory is based do not hold good in actual practice.

2. The comparative cost theory implies specialization, but complete specialization is not always possible, nor considered desirable so far as countries are concerned.

3. The comparative cost theory is one sided theory of international trade. It considers the supply side of international trade but takes no account of demand aspect.

4. Actual trade between countries may be dictated by military or strategic consideration and not merely by comparative costs. Hence, the comparative cost theory does not furnish an adequate explanation of international trade.

Definition Of Terms Of Trade:

Terms of trade (TOT) is a measure of how much imports an economy can get for a unit of export goods. For example, if an economy is only exporting apples and only importing oranges, then the terms of trade are simply the price of apples over the price of oranges. In other words, how many oranges can you get for a unit of apples. Since economies typically export and import many goods, measuring the TOT requires defining price indices for exported and imported goods and comparing the two.[3]

A rise in the prices of exported goods in international markets would increase the TOT, while a rise in the prices of imported goods would decrease it. For example, countries that export oil will see an increase in their TOT when oil prices go up, while the TOT of countries that import oil would decrease

Terms of Trade: Concepts, Gains from Trade and Terms of Trade:

How the gain from international trade would be shared by the participating countries depends upon the terms of trade. The terms of trade refer to the rate at which one country exchanges its goods for the goods of other countries. Thus, terms of trade determine the international values of commodities. Obviously, the terms of trade depend upon the prices of exports a country and the prices of its imports.

When the prices of exports of a country are higher as compared to those of its imports, it would be able to obtain greater quantity of imports for a given amount of its exports. In this case terms of trade are said to be favourable for the country as its share of gain from trade would be relatively larger.

On the contrary, if the prices of its exports are relatively lower than those of its imports, it would get smaller quantity of imported goods for a given quantity of its exports. Therefore, in this case, terms of trade are said to be unfavourable to the country as its share of gain from trade would be relatively smaller. In what follows we first explain the various concepts of the terms of trade and then explain how they are determined.

Concepts of Terms of Trade:

Net Barter Terms of Trade: The most widely used concept of the terms of trade is what has been caned the net barker terms of trade which refers to the relation between prices of exports and prices of imports. **In symbolic terms:**

$T_n = P_x/P_m$

Where

T_n stands for net barter terms of trade.

P_x stands for price of exports (x),

P_m stands for price of imports (m).

When we want to know the changes in net barter tends of trade over a period of time, we prepare the price index numbers of exports and imports by choosing a certain appropriate base year and obtain the following ratio:

$Px_1/ Pm_1 : Px_0/ Pm_0$.

Px„ Pm„

where Px_o and Pm_0 stand for price index numbers of exports and imports in the base year respectively, and Px_1) and Pm_1) denote price index numbers of exports and imports respectively in the current year.

Since the prices of both exports and imports in the base year are taken as 100, the terms of trade in the base year would be equal to one

$Px_0/ Pm_0 = 100/100 = 1$

Suppose in the current period the price index number of exports has gone upto 165, and the price index number of imports has risen to 110, then terms of trade in the current period would be:

165/110: 100/100 = 1.5:1

Thus, in the current period, terms of trade have improved by 50 pa' cent as compared to the base period. Further, it implies that if the prices of exports of a country rise relatively greater than those of its imports, terms of trade for it would improve or become favourable.

On the other hand, if the prices of imports rise relatively greater than those of its exports, terms of trade for it would deteriorate or become unfavourable. Thus, net barter terms of trade is an important concept which can be applied to measure changes in the capacity of exports of a country to buy the imported products. Obviously, if the net barter terms of trade of a country improve over a period of time, it can buy more quantity of imported products for a given volume of its exports.

But the concept of net barter terms of trade suffers from some important limitations in that it shows nothing about the changes in the volume of trade. If the prices of exports rise relatively to those of its imports but due to this rise in prices, the volume of exports falls substantially, then the gain from rise in export prices may be offset or even more than offset by the decline in exports.

This has been well described by saying, "We make a big profit on every sale but we don't sell much". In order to overcome this drawback, the net barter terms of trade are weighted by the volume of exports. This has led to the development of another concept of terms of trade known as the income terms of trade which shall be explained later. Even so, the net barter terms of trade is most widely used concept to measure the power of the exports of a country to buy imports.

Gross Barter Terms of Trade:

This concept of the gross terms of trade was introduced by F.W. Taussig and in his view this is an improvement over the concept of net barter terms of trade as it directly takes into account the volume of trade. Accordingly, the gross barter terms of trade refer to the relation of the volume of imports to the volume of exports. Thus,

$T_g = Om/Qx$

Where

Tg = gross barter terms of trade, Qm = quantity of imports

Qx = quantity of exports

To compare the change in the trade situation over a period of time, the following ratio is employed:

$Om_1/Qx_1 : Qm_0/Qx_0$

Where the subscript 0 denotes the base year and the subscript I denotes the current year.

It is obvious that the gross barter tenns of trade for a country will rise (i.e., will improve) if more imports can be obtained for a given volume of exports. It is important to note that when the balance of trade is in equilibrium (that is, when value of exports is equal to the value of imports), the gross barter terms of trade amount to the same thing as net barter terms of trade.

This can be shown as under:

Value of imports = price of imports x quantity of imports = Pm. Qm

Value of exports = Price of exports x quantity of exports = Px. Qx Therefore,

when balance of trade is in equilibrium.

Px .Qx = Pm. Qm

Px .Qm = Pm Qx

However, when balance of trade is not it equilibrium, the gross barter terms of trade would differ from net barter terms of trade.

Income Terms of Trade:

In order to improve upon the net barter terms of trade G.S. Dorrance developed the concept of income terms of trade which is obtained by weighting net barter terms of trade by the volume of exports. Income terms of trade therefore refer to the index of the value of exports divided by the price of imports. Symbolically, income terms of trade can be written as

$Ty = Px.Qx/Pm$

Where

T_y = Income terms of trade

P_x = Price of exports

Q_x = Volume of exports

P_m= Price of imports

Income terms of trade yields a better index of the capacity to import of a country and is, indeed, sometimes called 'capacity to import. This is because in the long run balance of payments must be in equilibrium the value of exports would be equal to the value of imports.

Thus, in the long run:

$Pm, Qm = Px, Qx$

$Qm = Px.Qx/Pm$

It follows from above that the volume of imports (Qm) which a country can buy (that is, capacity to import) depends upon the income terms of trade i.e., Px.Qx/Pm. Since income terms of trade is a better indicator of the capacity to import and since the developing countries are unable to change Px and Pm. Kindleberger' thinks it to be superior to the net barter terms of trade for these countries, However, it may be mentioned once again that it is the concept of net barter terms of trade that is usually employed.

Other concepts of terms of trade:

1. Single and double factoral terms of trade. Factoral terms of trade consider the changes in productivity in the production of export goods of two countries. Factoral terms of trade may be single factoral or double factoral:

A: Single factoral terms of trade(SFTT). Single factoral terms of trade is the net barter terms of trade adjusted for changes in the productivity of a country's factors in its export industries. It measures "how much quantity of imports can be obtained per unit of factor input used in the production of exportables''.

Symbolically,

$$SFTT = NBTT .Zx$$

Where,

SFTT = Single factoral terms of trade.

NBTT = Net barter terms of trade.

Zx = export productivity index.

Arise in SPTT implies that a greater quantity of imports can be obtained per unit of factorinput used in the production of exportables.

B. Double factoral terms of trade(DFTT). The double factoral terms of trade is the net barter terms of trade adjusted for changes in the productivity in producting both imports and exports. Symbolically,

DFTT= NBTT .Zx/Zm where,

DFTT = double factoral terms of trade

Zm = import productivity index.

A rise is DFTT implies that one unit of home factors embodied in exports can now be exchanged for more units of the foreign factors embodied in imports.

2. Real cost terms of trade(RCTT). The concept of real cost terms of trade measures the gain from international trade in utility terms. The real cost terms of trade can be calculated ny multiplying single factoral terms of trade by the reciprocal of an index of the amount of disutility per unit of productive resources used in producing exports. Symbolically

$$RCTT = SFTT \cdot Rx = NBTT \cdot Zx \cdot Rx$$

Where,

RCTT=Real cost terms of trade

Rx=Idex of amount of disutility incurred per unit of productive factors in the expot sector.

A rise in RCTT indicates that the amount of imports obtained per unit of real costs is greater.

3. Utility terms of trade (UTT). The concept of utility terms of trade is an index of the relative utilityof imports and domestic commodities foregone to produce exports. The utility terms of trade is calculated b multiplying real cost terms of trade with an index of relative utility of imports as compared with the commodities that could have been produced for internal consumption with those productive factors which are at present used in the production of export goods. Symbolically,

$$UTT = RCTT \cdot Um = NBTT \cdot Zx \cdot Rx \cdot Um$$

Where,

UTT is utility terms of trade

Um is index of relative utility of imports as compared with those productive factors which are at present devoted to the production of export goods.

Factors influencing terms of trade:

Terms of trade are influenced by a number of factors. Important among them are given:

1. Elasticity of demand: The elasticity of demand for exports and imports of a country influence its terms of trade. If the demand for a country's exports is less elastic as compared to her imports, the terms of trade will tend to be favourable because the exports can command higher price than imports. On the other hand, if the demand for import is less elastic than that for exports the terms of trade will be unfavourable.

2. Elasticity of supply: The nature of elasticity of supply also significantly influence the country's terms of trade. If the supply of a country's export is more elastic than the imports, the terms of trade will tend to be favourable.

3. Nature of goods: If a country is producing and exporting only primary goods, and importing manufactured goods, the terms of trade will be unfavourable.

4. Economic development: the economic development has two types of effects:

(a) The demand effect: It refers to the increase in demand for imports as a result of increase in income associated with economic development.

(b) The supply effect: It refers to the increase in supply of import substitutes or import competing goods. The net effect of economic development depends upon the extent of these two effects.

5. Rate of exchange: Changes in the rate of exchange of a country's currency also affect its terms of trade. If a country's currency appreciates , its terms of trade will improve because a rise in the value of currency causes an increase in the export prices and decrease in the import prices.

6. Tariff policy: Tariffs & quotas also influence the terms of trade. The measures , if not retaliated by other countries, improve a country's terms of trade by restricting imports.

7. Size of population: An over populated country will have larger demand for imports. As a result, the terms of trade will tend to be unfavourable in this case relative to the underpopulated or optimally populated country.

8. Size of country: A larger country will tend to have less favourable terms of trade as compared to a smaller country. This is because the smaller country can reap the gains of economies of scale enjoyed by the larger one in the international trade.

9. Degree of competition: If a country enjoys monopoly power in case of its exports and there are many alternative sources of supply of its imports then it will have favourable terms of trade.

Sources of Comparative Advantage:

1. The quantity and quality of natural resources available for example some countries have an abundant supply of good quality farmland, oil and gas, or easily accessible fossil fuels. Climate and geography have key roles in creating differences in comparative advantage. More recently the shale gas revolution in the United States and elsewhere is leading to shifts in the future pattern of world energy production and trade as North America becomes more energy sufficient. Severe worries about water scarcity in the future in large parts of the developing world might have hugely significant effects on their ability to export products.
2. Demographics - An ageing population, net outward or inward migration, educational improvements and women's participation in the labour force will all affect the quantity and quality of the labour force available for industries engaged in international trade.

3. Rates of capital investment including infrastructure: Greater public infrastructure investment can reduce trade costs and hence increasing supply capacity. Investment in roads, ports and other transport infrastructure strengthens regional trade ties. ICT infrastructure is particularly important for countries wanting to build a competitive

advantage in information-intensive sectors such as mobile telecommunications, gaming and

financial services

4. Increasing returns to scale and the division of labour – increasing returns occur when output grows more than proportionate to inputs. Rising demand in markets where trade takes place helps to encourage specialisation, higher productivity and internal and external economies of scale. These long-run scale economies can give regions and countries a significant unit cost advantage.

5. Investment in research & development which can drive innovation and invention

6. Fluctuations in the exchange rate, which affect the relative prices of exports and imports and cause changes in demand from domestic and overseas customers.

7. Import controls such as tariffs, export subsidies and quotas – these can be used to create an artificial comparative advantage for a country's domestic producers.

8. Non-price competitiveness of producers - covering factors such as the standard of product design and innovation, product reliability, quality of after-sales support. Many countries are now building comparative advantage in high-knowledge industries and specializing in specific knowledge sectors – an example is the division of knowledge in the medical industry, some countries specialize in heart surgery, others in pharmaceuticals – health tourism is becoming more important.

9. Institutions – these are important for comparative advantage and for growth too. Banking systems are needed to provide capital for investment and export credits, legal systems help to enforce contracts, political institutions and the stability of democracy is a key factor behind decisions about where international capital flows.

Free Trade VS Protection.

Free trade refers to the elimination of barriers to international trade. The most common barriers to trade are tariffs, quotas, and nontariff barriers.

A tariff is a tax on imports, which is collected by the federal government and which raises the price of the good to the consumer. Also known as duties or import duties, tariffs usually aim first to limit imports and second to raise revenue.

A quota is a limit on the amount of a certain type of good that may be imported into the country. A quota can be either voluntary or legally enforced.

The effect of tariffs and quotas is the same: to limit imports and protect domestic producers from foreign competition. A tariff raises the price of the foreign good beyond the market equilibrium price, which decreases the demand for and, eventually, the supply of the foreign good. A quota limits the supply to a certain quantity, which raises the price beyond the market equilibrium level and thus decreases demand.

Tariffs come in different forms, mostly depending on the motivation, or rather the stated motivation. (The actual motivation is always to limit imports.) For instance, a tariff may be levied in order to bring the price of the imported good up to the level of the domestically produced good. This so-called scientific tariff—which to an economist is anything but—has the stated goal of equalizing the price and, therefore, “leveling the playing field,” between foreign and domestic producers. In this game, the consumer loses.

A peril-point tariff is levied in order to save a domestic industry that has deteriorated to the point where its very existence is in peril. An economist would argue that the industry should be allowed to expire. That way, factors of production used by that inefficient industry could move into a new one where they would be better employed.

A retaliatory tariff is one that is levied in response to a tariff levied by a trading partner. In the eyes of an economist, retaliatory tariffs make no sense because they just start tariff wars in which no one—least of all the consumer—wins.

Nontariff barriers include quotas, regulations regarding product content or quality, and other conditions that hinder imports. One of the most commonly used nontariff barriers are product standards, which may aim to serve as “barriers to trade.” For instance, when the United States prohibits the importation of unpasteurized cheese from France, is it protecting the health of the American consumer or protecting the revenue of the American cheese producer?

Other nontariff barriers include packing and shipping regulations, harbor and airport permits, and onerous customs procedures, all of which can have either legitimate or purely anti-import agendas, or both.Free Trade Versus Protection

The foreign trade policy is concerned with whether a country should adopt the policy of free trade or of protection.

The foreign trade policy has been the subject of heated discussion since the time of Adam Smith who advocated for free trade and recommended that tariffs should be removed to avail of the advantages of free trade. Even today, economists are divided

over this question of foreign trade policy.

Various arguments have been given for and against free trade Case

for Free Trade:

The following arguments have been given in

defence of free trade:

1. Gains in Output and Well-being from Specialization:

The case for free trade is fundamentally based on the gain in output and well-being a country obtains from specializing in the production of those goods in which it is relatively more efficient and therefore export a part of them and in exchange gets those goods from other countries in production of which they are comparatively more efficient.

Specialization and trading in this way would achieve a more efficient allocation of

resources and a higher level of output and well-being. To quote Prof.Haberler,

"International division of labor and international trade which enable every country to

specialize and to export those things which it can produce cheaper in exchange for what others can provide at a lower cost, have been and still are one of the basic factors promoting well-being and increasing national income of every participating country."

2. Gains from Economies of Scale:

An important gain from trade is that it enables the trading countries to benefit from the economies of scale. If a country does not trade with others, its firms will produce goods to meet the domestic demand for a product. If domestic demand for a product is small, each of them will produce at a higher cost since they would not be able to enjoy the benefits of the economies of large scale production.

Accordingly, the production of goods will be inefficient. Trade allows a country to export goods with the result that level of output of goods in a country will exceed domestic demand within a country. Thus, trade expands the market for goods and enables the

producers to take advantage of the economies of scale. Adam Smith was the first economist who pointed out that specialization was limited by the size of the market. Trade makes it possible for the producers to move beyond domestic market into international market and therefore makes it worthwhile to specialize and produce on a large scale and thereby to lower cost per unit.

For example, in a small country such as Ceylon domestic demand would not be sufficient to produce efficiently large luxury cars on a large scale at a lower cost. Their production on a large scale at lower cost requires wider international market for sale of luxury cars.

3. Long-Run Dynamic Gains:

Free trade also leads to dynamic gains being obtained from trade. Dynamic gains from trade refer to its stimulation of economic growth. Dennis Robertson described foreign trade as 'an engine of growth'. The stimulation of growth through foreign trade are apparent from the rapid growth of such economies such as Japan, Taiwan, South Korea,

Singapore, Hong Kong and China.

Free trade promotes economic growth through:

(1) Raising the rate of saving and investment;

(2) Import of capital goods, and

(3) Transfer of technology.

(i) Raising rate of saving and investment:

Increase in national product or real national income of a country obtained through trade above the level that prevails in autarky leads to a higher level of saving. The higher level of saving ensures a higher rate of investment and capital formation which stimulates growth.

Hence if trade raises the rate of saving, it also promotes economic growth. The higher rate of saving makes it easier for the developing countries to break 'the vicious circle of

poverty' and to "take off into self-sustained growth." (ii)

Import of capital goods:

Besides trade permits a country to import capital goods in exchange for exports of consumer goods or surplus raw materials, and thereby accelerates industrial growth.

Imports of capital goods adds to the capital stock in a country and raises its productive

capacity more than it would have been possible without trade. Free trade also often enables a country to borrow from other countries to finance import of capital goods.

(iii) Transfer of technology:

If different countries worked in isolation the new technology developed in one country would remain confined locally. Through trade technological progress tends to feed on each other. A technology discovered by one is improved by another and so technology goes on being improved successively.

Imagine if every country had to invent a wheel, a steam engine, electricity operating in an isolated manner, how slow would have been the progress in technology. The trade increases international diffusion of technology and in this way transfer of technology from the developed countries to the developing countries have been possible.

In the modern times technology developed in one country by a firm is licensed to firms in other countries. Through this process, technology is transferred from country to country. In

the absence of trade between countries such transfer of technology would not take

place and as a result economic growth would be slower.

4. Promotes Competition and Prevents

Monopoly:

The case for free trade also rests on the fact that it promotes competition and prevents the emergence of monopolies in the domestic economy. In the absence of trade and therefore without facing any competition from foreign firms, domestic firms tend to

become inefficient which causes rise in cost per unit of output and therefore higher prices of goods.

When trade is free, increased competition by foreign firms forces domestic firms to adopt measures to increase their efficiency and make efforts to reduce cost by employing lowest-cost production techniques. Free trade also compels them to be innovative and to improve the quality of their products.

Further, free trade provides consumers a wide range of products from which to choose.

The increase in efficiency and the adoption of improved technology not only lowers prices of products but also contributes to economic growth.

5. Political Gains from Free Trade:

Free trade increases well-being or standard of living of the trading countries and this mutual welfare gains from trade make different nations economically dependent on each other. The economic interdependence raises the likelihood of reduced hostility between countries.

Economic interdependence provides powerful incentives for peaceful solution of disputes. Trade between economically interdependent countries increases the potential losses from war and thus reduces the likelihood of armed conflict.

Despite the above gains from free trade, countries have put up various barriers to free trade flows.

The important barriers to free trade are:

(1) The imposition of tariffs (i.e., duties on imports of goods),

(2) The fixation of import quotas,

(3) The licensing of imports.

The reasons for these trade barriers are that different nations want to protect their domestic industries, to increase employment opportunities, to improve their balance of payments and to achieve other goals. We therefore discuss below the case for

protection and then in a later section will examine the impact of trade barriers, especially tariffs on welfare and growth.

Case for Protection:

Despite gains from free trade, many arguments have been given against free trade and infavor of protection. By protection we mean in order to safeguard the domestic industries from low-priced imports some barriers against import of foreign goods are imposed. Some arguments given in defense of protection are irrational and invalid, whereas some are valid. We critically examine below various arguments given in favor of protection (i.e., against free foreign trade).

Nationalism:

First argument for protection has been that nationalistic feeling or patriotism requires that people of a country should buy products of their domestic industries rather than foreign products. In the USA, there has been a campaign 'Be American, buy American' appealing people to buy American goods instead of imported foreign products.

Similarly, in India recent campaign of 'Swadeshi' appeals to the patriotic feeling of the Indian people that we should protect our indigenous industries and impose barriers on imports of foreign goods or provide subsidies to our industries. However, this argument is misplaced and invalid.

Those policy makers who yield to such arguments deny the people of a country the gains from trade such as rise in productive efficiency and greater well-being, stimulus to growth through higher capital formation and spread of superior technology. Thus, restrictions imposed on trade in the name of nationalism or swadeshi are actually contrary to our national interests because they promote inefficiency and prevents rapid economic growth.

Employment Argument:

An important argument for protection is that it will lead to increase in domestic employment or at least preserves present domestic employment. It is often believed that

imports of goods from abroad reduce domestic employment.

Therefore, if instead of imports we produce those goods at home, employment in the country will increase. Besides, as prices of imported goods are lower, the domestic producers would not be able to compete with them and may be competed out of the market. This will destroy even present jobs in the domestic industries. It is therefore concluded that protection of domestic industries will lead to their expansion and therefore employment in them will increase.

In our view employment argument for protection is not logical and valid. This argument ignores the adverse effects of protection on our industries. An important economic principle is that exports must pay for imports. If imports are restricted by imposing barriers, the exports cannot remain unaffected.

For example, many raw materials and capital goods are imported to be used in industries which export goods. If imports are restricted, exports will therefore fall. This will lead to the decline in employment in export industries which will offset the increase in employment in the import-substituting industries.

Further, when you restrict imports to protect domestic industries so that they should expand, other countries are likely to retaliate and will impose restrictions on our exports which are imported by them. This too will reduce exports and cause reduction in employment in export industries. Thus, net effect on employment of restricting imports for providing protection to domestic industries may not be positive.

Infant Industry Argument:

A powerful argument given in support of protection, especially in the context of developing countries is infant industries should be provided protection from the competition of low-priced imports of the mature and well-established industries of the developed industrialized countries.

Shortly after American Revolution, Alexander Hamilton argued that British industrial supremacy was due to its early start over American infant industries. He pointed out that these infant American industries required temporary protection for some time so that they should grow and achieve production efficiency and economies of scale before they

could successfully compete with low-cost British goods. He thus argued that temporary protection of infant American industries was necessary for industrial development of America.

Similarly, the infant industry argument has been advanced for protecting infant industries of the developing countries from competition of the low-cost firms of the industrialized developed countries. Given some time, these infant industries will grow and will be able to benefit from the economies of scale and learn the techniques necessary to lower their cost of production.

As a result, over a period of time their cost per unit will go down and will therefore be in a position to compete with the foreign imports. Therefore, for some time they should be protected otherwise they would be destroyed by foreign competition.

However, there are some lacuna in infant industry argument. First, it is assumed that protected infant industries will make efforts to lower cost when provided protection. However, actual experience shows that it is more likely that protected industries lose incentives to become efficient and lower cost. It is said “once an infant, always an infant.”

Secondly, even if an industry makes efforts to improve productivity and lower cost per unit when it is provided protection, it has been assumed in the argument that the Government is the best judge as to which industries will prove to be capable of competing low-priced foreign goods.

It has been asserted in defense of free trade that selection of industries which will acquire competitive strength can be done better by private market mechanism. It is pointed out that when opening up the economy to foreign competition the domestic industries would try to increase their efficiency.

As a result, only those industries will survive which are efficient and produce at a lower cost. Therefore, it is argued that it is better if the domestic industries are left to foreign competition and in this way, they will have incentives to improve productivity to escape

from losses. Only those domestic industries will survive and operate which are efficient and produce at a low cost per unit.

Indian Automobile industry is a shining example of an industry not making any efforts to become efficient even after given protection for more than three decades. Before the setting-up of MarutiUdyog with Japanese collaboration, Indian car industry was fully protected by heavy duties on imports of cars.

The two domestic firms producing Ambassador and Fiat cars did not make any efforts to improve their efficiency, nor did they bring out any better models of their cars. It is only after 1991 that following the policy of liberalization that new foreign firms such as Daewoo of South Korea, General Motors have come in India and are producing new models at relatively low prices. Even Maruti is now trying to improve its efficiency further and brought out new models of Maruti.

However, it may be noted that in developing countries the Government is in a better position to protect certain industries such as steel, cement which lead to an expansion of the infrastructure of the developing economies. This is because these industries create external economies and the private firms will not be compensated for creating these external benefits.

Anti-dumping Argument:

The other important argument for protection is that foreign producers compete unfairly by dumping the goods in another country. Dumping is a form of price discrimination when producers of a country sell goods in another country at lower prices than those charged at home.

Of course, consumers in a country in which foreign goods are dumped are beneficiaries, the industries of that country suffer as they are unable to compete with the 'dumped goods'. Besides, there is more harmful 'predatory dumping' which implies that foreign firms try to sell goods in other countries even below cost to establish a worldwide monopoly by driving competitors out of the market. Once the local industries are competed out, they raise prices to obtain monopoly profits.

There is a lot of evidence that firms of USA and Japan often indulge in dumping of their goods in other countries to eliminate competition. But, in our view, instead of providing protection to domestic industries through tariffs or non-tariffs barriers, it will be a better policy to enact laws against dumping. Dumping should be prohibited by law declaring it illegal. In India, such a law has been enacted but is not being properly implemented.

Correcting Balance of Payments Deficit:

Correcting deficit in balance of payments is also mentioned as justification for imposing tariffs to restrict imports or fixing of quotas of imports. This appears to be a valid argument for providing protection.

However, in our view the solution for fundamental disequilibrium in the balance of payments lies in the adoption of suitable adjustment in exchange rate, appropriate fiscal and monetary policies to lower domestic prices so as to encourage exports. The deficit in balance of payments can be reduced by ensuring rapid growth in exports of a country.

Redistribution Income:

Case for protection has also been built up on the ground that it can be used for making desirable redistribution of income from one section of society to another. Protection makes some people better off, while others worse off. By providing protection to domestic producers their profits can be raised at the expense of consumers who suffer a loss in consumer surplus as protection denies them consumption of low-priced imported goods. That is, protection redistributes income in favor of domestic producers. Sometimes

protection causes transfer of income from some factors to the others. For

example, Heckscher-Ohlin Model of international trade shows that trade benefits the abundant factor and harms the scarce factor. It is therefore scarce factor that demands protection by the Government against imports so that its income may not decrease. This implies that the workers, the owners of labor, and capitalists tend to take opposite views

with regard to protection. This is however not confirmed by empirical evidence. In some countries one of the objectives of economic policy is to redistribute income from the rich to the poor. This can be done by imposing high tariffs on imports of goods considered to be luxury items and levying tariffs on exports of those goods which are considered as necessities.

Higher import tariffs on luxuries will reduce the incomes of the rich as they would pay taxes to the Government. Similarly, higher taxes on exports of necessities ensure greater supplies of them in the domestic market which would lower their domestic prices and benefit the poor.

It may however be noted that direct taxes such as income tax are considered better methods of redistributing income among various sections of a society than the commercial policy. This is because as we shall see below import tariffs levied for protecting industries cause down-weight loss of welfare which are avoided under the direct tax system.

Conclusion:

We have critically examined the various arguments in favor of protection. Some of them are valid, other appears to be misplaced. Some people consider trade as a 'zero sum game', that is, in trading if one gains, the other loses. This has given rise to the doctrine of exploitation. However, in our view, this is wrong thinking. No trade can occur without expectations of gain.

OR

UNIT-4

International trade is the exchange of capital, goods, and services across international borders or territories. In most countries, such trade represents a significant share of gross domestic product (GDP).

THE BASIS OF INTERNATIONAL TRADE

The fundamental basis of international trade lies in the fact that countries are endowed by nature with different elements of productive power. In other words, factor endowments are unevenly distributed among the countries of the world. This is due to geographic facts. physical features and climatic differences. Some countries have the monopoly of certain minerals. e.g.• Bengal and Bangladesh for jute. Thus. international trade is inevitable when there are marked differences in the countries regarding materials. natural vegetation. climate. soils and other physical and geographical conditions. International trade is also affected by several other factors besides the natural or geographical factors, stage of economic development. accumulation of capital by a nation and its foreign investments. technological progress trade and financial regulations. political' affiliations. and soon.

Diversity of economic resources in different countries is the reasons for international trade. Different countries are endowed with different natural resources. All countries are not endowed by nature with the same productive facilities, there are differences in climatic conditions, geological deposits and in the supply of labor and capital. due to those differences, each country finds it advantageous to specialize in the production of some specific commodities. Sub specialization would not be economically practicable but for the possibility of exchange of surplus production through international trade. If there was no international trade, there would be no surplus available for export. International Trade will take place when buyers find foreign markets cheaper to buy in and sellers find them more profitable to sell off their products than the domestic market. Thus, a more effective use of world's resources is made possible through international trade.

International trade vs. inter-regional trade

The swap of goods and services involving different nations is termed as International Trade. On the other hand, trade of goods and services within a nation is known as Inter-Regional Trade.

What difference then does it make to the theory of trade whether these goods are made in the same country or in different countries? Why is a separate theory of international trade needed? Well, domestic and foreign trade -are really one and the same. They both imply exchange of goods between persons. They both aim at achieving increased production through division of labor.

There are, however, a number of things which make a difference between foreign trade and domestic trade. They are as under: —

1. Immobility of Factors of Production. Labor and capital do not move as freely from one country to another as they do within the same country. Much more difficult so when a foreign frontier has to be crossed. Hence, disparities in cost of production can't be eliminated by shifting men along with money. The consequence is the moving of goods.

2. Different Currencies. Each nation has a special currency. India for instance has the rupee, U.S.A., the dollar, Germany the mark, Italy the lira, Spain the peso, Japan the yen and so on. Hence, business between countries increases complications missing in internal trade.

The important fact is not the different money so much as the possibility of change of their value. If exchange rates were fixed, currencies convertible, and both were expected to remain so, one currency was as good as another. But in actual practice exchange rates change and complicate the matter.

The possibility of variations in the exchange rates between different currencies increases the risks and thereby discourages the movement of the factors of production, particularly that of capital between different countries.

3. Restrictions on Trade. Trade between different countries is not free. Very often there are restrictions imposed by custom duties, exchange restrictions, fixed quotas or other tariff barriers. For example, our own country has imposed heavy duty on the import of motor cars, wines and liquors and other luxury goods,

4. Separate Markets. National markets of different countries are usually separated due to difference in usage, habits, tastes, terms of sale, etc., e.g., the British drive to the left and the French drive to the right. Therefore, the British use the right-hand drive cars and the French left-hand drive cars. This makes the markets for automobiles effectively separated. Similarly, in some countries goods are designed in inches, feet and yards while in others in terms of metric measurements. But, there is no such difficulty as between different regions of the same country. All this creates a difference between international and inter-regional Trade.

Absolute Cost Advantage Theory

The principle of absolute advantage refers to the ability of a party (an individual, or firm, or country) to produce a greater quantity of a good, product, or service than competitors, using the same amount of resources. Adam Smith first described the principle of absolute advantage in the context of international trade, using labor as the only input. Since absolute advantage is determined by a simple comparison of labor productiveness, it is possible for a party to have no absolute advantage in anything; in that case, according to the theory of absolute advantage, no trade will occur with the other party.

Assumptions of the Theory

1.Trade is between two countries

2.Only two commodities are traded

3.Free Trade exists between the countries

4.The only element of cost of production is labor.

Smith argued that it was impossible for all nations to become rich simultaneously by following mercantilism because the export of one nation is another nation's import and instead stated that all nations would gain simultaneously if they practiced free trade and specialized in accordance with their absolute advantage. Smith also stated that the wealth of nations depends upon the goods and services available to their citizens, rather than their gold reserves. While there are possible gains from trade with absolute advantage, the gains may not be mutually beneficial.

Smith reasoned that trade between countries shouldn't be regulated or restricted by government policy or intervention. He stated that trade should flow naturally according to market forces. In a hypothetical two-country world, if Country A could produce a good cheaper or faster (or both) than Country B, then Country A had the advantage and could focus on specializing on producing that good. Similarly, if Country B was better at producing another good, it could focus on specialization as well. By specialization, countries would generate efficiencies, because their labor force would become more skilled by doing the same tasks. Production would also become more efficient, because there would be an incentive to create faster and better production methods to increase the specialization.

Smith's theory reasoned that with increased efficiencies, people in both countries would benefit and trade should be encouraged. His theory stated that a nation's wealth shouldn't be judged by how much gold and silver it had but rather by the living standards of its people.

Implications (Significance) of Absolute Advantage Theory

1. More quantity of both products
2. Increased standards of living of both countries 3. Increased

   production efficiency
4. Increase in global efficiency and effectiveness
5. Maximization of Global productivity and other resources productivity

Criticism

No absolute advantages for many countries

Country size varies

Country by country differences in specialization

Deals with labor only and neglects other factors (Variety of resources)

Neglected Transport cost (It plays significant role)

Comparative Cost Theory

This theory is developed by a classical economist David Ricardo. According to this theory, the international trade between two countries is possible only if each of them has absolute or comparative cost advantage in the production of at least one commodity. This theory is based upon following assumption

- There are only two countries and two commodities
- There is no governmental intervention in export and import
- Only labor is factor of production. Quantity of labor used gives cost of production
- There is perfect mobility of labor within the country but not between the countries
- There is no cost of transportation between the countries
- The law of constant returns to scale operates in production.
- The units of labor are homogeneous
- The units of each commodity in both countries are homogeneous

According to comparative cost advantage theory of international trade, each country exports the commodity in which it has cost advantage and imports the commodity in which it has cost disadvantage. This theory can be explained as following:

Comparative cost advantage

If a country can produce both commodities with less cost than another country but in different ratio, the country is said to have comparative cost advantage

country	Labor required to produce clothe	Labor required to produce shoe
Nepal	10	4
India	20	12
ratio	10/20=0.5	4/12=0.33

In the above table, the cost of production of clothe in Nepal is only 50% of cost of production of clothe in India. In case of shoes, the cost of production is only 1/3rd of cost in India. It shows that Nepal can produce both commodities with fewer cots than India. But in order to take advantage, it produces only shoes and let India produce clothe for it. Nepal produces shoes and exports to India. India produces clothe and exports to Nepal. If they do so, both of them can take benefits.

Absolute cost advantage:

If a country can produce a commodity with less cost but has to bear more cost in the production of another commodity than another country, then the country is said to have absolute cost advantage. In this case, both of the countries produce and export the commodities in which they have absolute cost advantage

country	Labor required to produce clothe	Labor required to produce shoe
Nepal	10	8
India	20	4
ratio	10/20=0.5	8/4=2

In the above table, the cost of production of clothe in Nepal is less than in India. But cost of production of shoes is less in India than in Nepal. In this case, Nepal is said to have absolute cost advantage in production of clothe but absolute cost disadvantage in production of shoes. India is said to have absolute cost advantage in production of shoes but absolute cost disadvantage in production of cloth. Therefore, Nepal produces only clothe and exports to India. India produces only shoes and exports to Nepal. Doing it, both the countries can take benefit.

No cost advantage:

If a country can produce both commodities with less cost than another country but in equal ratio, the country is said to have no cost advantage.

country	Labor required to produce clothe	Labor required to produce shoe
Nepal	10	4
India	20	8
ratio	10/20=0.5	4/8=0.5

In the above table, Nepal is shown able to produce both commodities with less cost than India in equal ratio. It means Nepal has no cost advantage. It is loss to the Nepal to import any commodity form India. That's why it decides to produce both goods for itself. Therefore, India too produces both goods for itself. Hence there is no trade between them.

Criticisms

This theory is not applicable if there are more than two countries and more than two commodities

In every country, there is more or less government intervention in international trade

There is no cost of transportation form one country to another country

The units of labor are not homogeneous and the workers are paid more or less in different countries

There may be increasing or decreasing returns to scale

Labor is not perfectly mobile within the country too. In the modern era, there is mobility of labor form one country to another

The commodities produced in the different countries differ in quality, taste, size, quantity etc.

Haberler's Theory of Opportunity Cost in International Trade: -

Professor Gottfried Haberler propounded the opportunity cost theory. According to the opportunity cost theory, the cost of the commodity is the amount of the second commodity that must be given up to release just enough resources to produce one additional unit of the first commodity. Like comparative cost theory, here assumptions like labor is the only factor of production, labor is homogeneous, or cost of commodity depends on its labor content only etc. are not made. As a result, the nation with the lower

opportunity cost in the production of commodity has a comparative advantage in that commodity (i.e. comparative disadvantage in the second commodity). Thus the exchange ratio between the two commodities is expressed in terms of their opportunity costs.

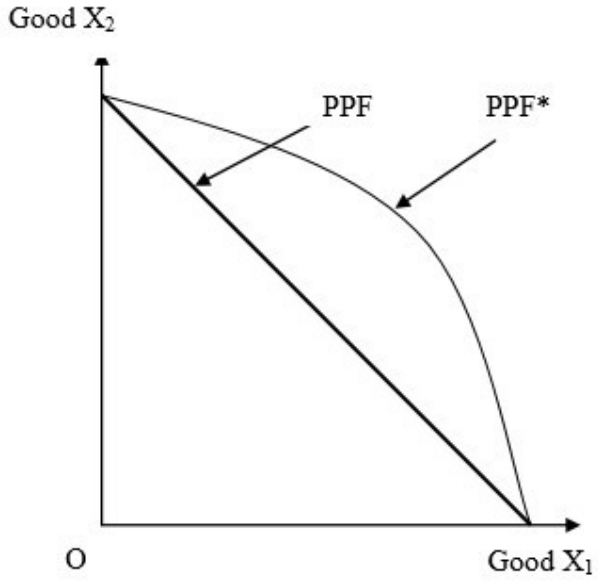
Assumptions of Opportunity Cost Theory

Haberler makes the following assumptions for his theory.

1. There are only two nations. 2. There are only two commodities in both the nations. 3. There are only two factors of production such as labor and capital in both the nations. 4. There is perfect competition in both the factor and commodity markets. 5. The price of each commodity equals its marginal money costs. 6. In each employment, the price of each factor equals its marginal value productivity. 7. Supply of each factor is fixed. 8. In each country there is full employment. 9. No change in technology. 10. Factors are not mobile between two countries. 11. Within countries factors are totally mobile. 12. There is free and unrestricted trade between the two countries.

Haberler demonstrated his theory by constructing a simple diagram that is called Production Possibility Frontier which shows the trade-offs that an economy faces between producing any two products. The community can produce either one of the goods or some combination of the two. The curve shows the additional amount of one good that can be obtained by foregoing a particular quantity of the other.

Illustration of Opportunity Cost Using PPF



We have drawn two production possibility frontiers-one linear Production possibility frontier, PPF and the other non-linear production possibility frontier, PPF* which is concave. The slope of any production possibility frontier is the opportunity cost of X1 in

terms of X2. In the linear case the slope is constant. In case of concave production possibility frontier, the opportunity cost changes as we change the combinations of X1 and X2. The concave curve, PPF* shows that the more that is produced of X1 the more and more we have to give up of X2. In other words, opportunity cost of X1 in terms of X2 increases.

Opportunity Cost

The opportunity cost is defined in terms of the alternative use of the resources. The minimum amount of Good X which has to be given up for producing an additional unit of Good Y is called the opportunity cost of Good Y in that country.

Table – 4 Labour Requirements per Unit of Output

	Country A	Country B
Commodity X	4	6
Commodity Y	2	12

The concept of opportunity cost is explained with hypothetical figures in Table-4. In country A labor coefficients for commodity X and Commodity Y are 4 and 2 respectively. In country B the corresponding figures are 6 and 12. How many units of commodity X should country A give up in order to produce one more unit of commodity Y? It is half a unit of X. This is the opportunity cost of producing Y in terms of X in country A. Compare this with the position in country B. How many units of X should country B give up in order to produce one more unit of Y? The answer is 2 units. Hence the opportunity cost of producing Y in terms of X in country B is 2.

It should be noted here that opportunity cost of X in terms of Y is the reciprocal of opportunity cost of Y in terms of X. For example, in country A opportunity cost of X in terms of Y is 2 and in country B the opportunity cost of X in terms of Y is ½.

Comparative Cost Defined in Terms of Opportunity Costs

It follows that country A has comparative advantage in the production of Y, because opportunity cost of Y in terms of X is lower in country A than in country B. On the other hand, country B has a comparative advantage in the production of X the opportunity cost of X in terms of Y (2 × ½) is lower in country B than in country A. Once comparative advantage is defined in terms of opportunity cost, It makes no difference whether commodities are actually produced by labor alone. Thus, classical conclusion is saved. Hence opportunity cost theory is useful to strengthen Ricardian conclusions.

Critical Appraisal

The critical appraisal of Haberler ‘s opportunity cost theory can be discussed under two heads namely,

1. Superiority over comparative cost theory

2. Criticisms. 1. Superiority over Comparative Cost Theory

Haberler's opportunity cost theory is regarded as superior to the comparative cost theory of international trade formulated by the classical economists like Adam Smith and David Ricardo. The arguments put for the superiority are summarized below: 1. Dispenses with the Unrealistic Assumption of Labor Theory of Value:

The classical theory is based on the unrealistic assumption of labor theory of value. But Haberler 's opportunity cost theory dispenses with such unrealistic assumption and is more realistic.

2. Analyses the Pre-trade and Post-trade situations Completely: The opportunity cost theory analyses pre-trade post-trade situations under constant, increasing and decreasing opportunity costs, whereas the comparative cost theory is based on the constant cost of production within the country with comparative advantage and disadvantage between the two countries. Hence, Haberler's opportunity cost theory is considered to be more realistic over the classical theory.

3. Highlights the Importance of Factor Substitution: The opportunity cost theory highlights the importance of factor substitution in trade theory. It is vital in the production process especially for a growing economy.

4. Facilitates the Easy Measurement of Opportunity Cost: The opportunity cost can be measured easily.

5. Explains the Time, Reason etc. about Trade: The opportunity cost theory explains why trade takes place or when it should take place, showing how the gains shared between the countries etc.

6. Explain about the Complete Specialization: It explains when complete specialization is possible and when it is not possible etc. Criticisms

Haberler's opportunity cost theory is also not free from criticisms. It has been vehemently criticized by Jacob Viner in his —Studies in the Theory of International Trade (1937) ‖. Some of the important criticisms are listed down below:

1. Inferior as a Tool of Welfare Evaluation: Jacob Viner says that opportunity cost approach is inferior as a tool of welfare analysis when compared to classical real cost approach. Further he says that the doctrine of opportunity cost fails to measure real costs in the form of Sacrifices or Disutilities.

2. Fails to consider Changes in Factor Supplies: Viner further criticizes that the production possibility curve of opportunity cost theory does not consider changes in the factor supplies.

3. Fails to consider Preferences for Leisure against Income: Viner also criticizes the opportunity costs theory on the ground that the production possibility curve does not take into account the preference for leisure against income.

4. Unrealistic Assumptions: Haberler 's opportunity cost theory is based on many assumption like two countries, two commodities, two factors, perfect competition, perfect factor market, full employment, no technical change etc. All these assumptions are unrealistic because they do not hold in the real word.

Free Trade Versus Protection

The foreign trade policy is concerned with whether a country should adopt the policy of free trade or of protection.

The foreign trade policy has been the subject of heated discussion since the time of Adam Smith who advocated for free trade and recommended that tariffs should be removed to avail of the advantages of free trade. Even today, economists are divided over this question of foreign trade policy.

Various arguments have been given for and against free trade

Case for Free Trade:

The following arguments have been given in defence of free trade:

1. Gains in Output and Well-being from Specialization:

The case for free trade is fundamentally based on the gain in output and well-being a country obtains from specializing in the production of those goods in which it is relatively more efficient and therefore export a part of them and in exchange gets those goods from other countries in production of which they are comparatively more efficient.

Specialization and trading in this way would achieve a more efficient allocation of resources and a higher level of output and well-being. To quote Prof. Haberler, "International division of labor and international trade which enable every country to specialize and to export those things which it can produce cheaper in exchange for what others can provide at a lower cost, have been and still are one of the basic factors promoting well-being and increasing national income of every participating country."

2. Gains from Economies of Scale:

An important gain from trade is that it enables the trading countries to benefit from the economies of scale. If a country does not trade with others, its firms will produce goods to meet the domestic demand for a product. If domestic demand for a product is small, each of them will produce at a higher cost since they would not be able to enjoy the benefits of the economies of large scale production.

Accordingly, the production of goods will be inefficient. Trade allows a country to export goods with the result that level of output of goods in a country will exceed domestic demand within a country. Thus, trade expands the market for goods and enables the producers to take advantage of the economies of scale. Adam Smith was the first economist who pointed out that specialization was limited by the size of the market.

Trade makes it possible for the producers to move beyond domestic market into international market and therefore makes it worthwhile to specialize and produce on a large scale and thereby to lower cost per unit.

For example, in a small country such as Ceylon domestic demand would not be sufficient to produce efficiently large luxury cars on a large scale at a lower cost. Their production on a large scale at lower cost requires wider international market for sale of luxury cars.

3. Long-Run Dynamic Gains:

Free trade also leads to dynamic gains being obtained from trade. Dynamic gains from trade refer to its stimulation of economic growth. Dennis Robertson described foreign trade as 'an engine of growth'. The stimulation of growth through foreign trade are apparent from the rapid growth of such economies such as Japan, Taiwan, South Korea, Singapore, Hong Kong and China.

Free trade promotes economic growth through:

(1) Raising the rate of saving and investment;

(2) Import of capital goods, and

(3) Transfer of technology.

(i) Raising rate of saving and investment:

Increase in national product or real national income of a country obtained through trade above the level that prevails in autarky leads to a higher level of saving. The higher level of saving ensures a higher rate of investment and capital formation which stimulates growth.

Hence if trade raises the rate of saving, it also promotes economic growth. The higher rate of saving makes it easier for the developing countries to break 'the vicious circle of poverty' and to "take off into self-sustained growth."

(ii) Import of capital goods:

Besides trade permits a country to import capital goods in exchange for exports of consumer goods or surplus raw materials, and thereby accelerates industrial growth. Imports of capital goods adds to the capital stock in a country and raises its productive capacity more than it would have been possible without trade. Free trade also often enables a country to borrow from other countries to finance import of capital goods.

(iii) Transfer of technology:

If different countries worked in isolation the new technology developed in one country would remain confined locally. Through trade technological progress tends to feed on each other. A technology discovered by one is improved by another and so technology goes on being improved successively.

Imagine if every country had to invent a wheel, a steam engine, electricity operating in an isolated manner, how slow would have been the progress in technology. The trade increases international diffusion of technology and in this way transfer of technology from the developed countries to the developing countries have been possible.

In the modern times technology developed in one country by a firm is licensed to firms in other countries. Through this process, technology is transferred from country to country. In the absence of trade between countries such transfer of technology would not take place and as a result economic growth would be slower.

4. Promotes Competition and Prevents Monopoly:

The case for free trade also rests on the fact that it promotes competition and prevents the emergence of monopolies in the domestic economy. In the absence of trade and therefore without facing any competition from foreign firms, domestic firms tend to become inefficient which causes rise in cost per unit of output and therefore higher prices of goods.

When trade is free, increased competition by foreign firms forces domestic firms to adopt measures to increase their efficiency and make efforts to reduce cost by employing lowest-cost production techniques. Free trade also compels them to be innovative and to improve the quality of their products.

Further, free trade provides consumers a wide range of products from which to choose. The increase in efficiency and the adoption of improved technology not only lowers prices of products but also contributes to economic growth.

5. Political Gains from Free Trade:

Free trade increases well-being or standard of living of the trading countries and this mutual welfare gains from trade make different nations economically dependent on each other. The economic interdependence raises the likelihood of reduced hostility between countries.

Economic interdependence provides powerful incentives for peaceful solution of disputes. Trade between economically interdependent countries increases the potential losses from war and thus reduces the likelihood of armed conflict.

Despite the above gains from free trade, countries have put up various barriers to free trade flows.

The important barriers to free trade are:

(1) The imposition of tariffs (i.e., duties on imports of goods),

(2) The fixation of import quotas,

(3) The licensing of imports.

The reasons for these trade barriers are that different nations want to protect their domestic industries, to increase employment opportunities, to improve their balance of payments and to achieve other goals. We therefore discuss below the case for protection and then in a later section will examine the impact of trade barriers, especially tariffs on welfare and growth.

Case for Protection:

Despite gains from free trade, many arguments have been given against free trade and in favor of protection. By protection we mean in order to safeguard the domestic industries from low-priced imports some barriers against import of foreign goods are imposed. Some arguments given in defense of protection are irrational and invalid, whereas some are valid. We critically examine below various arguments given in favor of protection (i.e., against free foreign trade).

Nationalism:

First argument for protection has been that nationalistic feeling or patriotism requires that people of a country should buy products of their domestic industries rather than foreign products. In the USA, there has been a campaign 'Be American, buy American' appealing people to buy American goods instead of imported foreign products.

Similarly, in India recent campaign of 'Swadeshi' appeals to the patriotic feeling of the Indian people that we should protect our indigenous industries and impose barriers on imports of foreign goods or provide subsidies to our industries. However, this argument is misplaced and invalid.

Those policy makers who yield to such arguments deny the people of a country the gains from trade such as rise in productive efficiency and greater well-being, stimulus to growth through higher capital formation and spread of superior technology. Thus, restrictions imposed on trade in the name of nationalism or swadeshi are actually contrary to our national interests because they promote inefficiency and prevents rapid economic growth.

Employment Argument:

An important argument for protection is that it will lead to increase in domestic employment or at least preserves present domestic employment. It is often believed that imports of goods from abroad reduce domestic employment.

Therefore, if instead of imports we produce those goods at home, employment in the country will increase. Besides, as prices of imported goods are lower, the domestic producers would not be able to compete with them and may be competed out of the market. This will destroy even present jobs in the domestic industries. It is therefore concluded that protection of domestic industries will lead to their expansion and therefore employment in them will increase.

In our view employment argument for protection is not logical and valid. This argument ignores the adverse effects of protection on our industries. An important economic principle is that exports must pay for imports. If imports are restricted by imposing barriers, the exports cannot remain unaffected.

For example, many raw materials and capital goods are imported to be used in industries which export goods. If imports are restricted, exports will therefore fall. This will lead to the decline in employment in export industries which will offset the increase in employment in the import-substituting industries.

Further, when you restrict imports to protect domestic industries so that they should expand, other countries are likely to retaliate and will impose restrictions on our exports which are imported by them. This too will reduce exports and cause reduction in employment in export industries. Thus, net effect on employment of restricting imports for providing protection to domestic industries may not be positive.

Infant Industry Argument:

A powerful argument given in support of protection, especially in the context of developing countries is infant industries should be provided protection from the competition of low-priced imports of the mature and well-established industries of the developed industrialized countries.

Shortly after American Revolution, Alexander Hamilton argued that British industrial supremacy was due to its early start over American infant industries. He pointed out that these infant American industries required temporary protection for some time so that they should grow and achieve production efficiency and economies of scale before they

could successfully compete with low-cost British goods. He thus argued that temporary protection of infant American industries was necessary for industrial development of America.

Similarly, the infant industry argument has been advanced for protecting infant industries of the developing countries from competition of the low-cost firms of the industrialized developed countries. Given some time, these infant industries will grow and will be able to benefit from the economies of scale and learn the techniques necessary to lower their cost of production.

As a result, over a period of time their cost per unit will go down and will therefore be in a position to compete with the foreign imports. Therefore, for some time they should be protected otherwise they would be destroyed by foreign competition.

However, there are some lacuna in infant industry argument. First, it is assumed that protected infant industries will make efforts to lower cost when provided protection. However, actual experience shows that it is more likely that protected industries lose incentives to become efficient and lower cost. It is said “once an infant, always an infant.”

Secondly, even if an industry makes efforts to improve productivity and lower cost per unit when it is provided protection, it has been assumed in the argument that the Government is the best judge as to which industries will prove to be capable of competing low-priced foreign goods.

It has been asserted in defense of free trade that selection of industries which will acquire competitive strength can be done better by private market mechanism. It is pointed out that when opening up the economy to foreign competition the domestic industries would try to increase their efficiency.

As a result, only those industries will survive which are efficient and produce at a lower cost. Therefore, it is argued that it is better if the domestic industries are left to foreign competition and in this way, they will have incentives to improve productivity to escape from losses. Only those domestic industries will survive and operate which are efficient and produce at a low cost per unit.

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However, it may be noted that in developing countries the Government is in a better position to protect certain industries such as steel, cement which lead to an expansion of the infrastructure of the developing economies. This is because these industries create external economies and the private firms will not be compensated for creating these external benefits.

Anti-dumping Argument:

The other important argument for protection is that foreign producers compete unfairly by dumping the goods in another country. Dumping is a form of price discrimination when producers of a country sell goods in another country at lower prices than those charged at home.

Of course, consumers in a country in which foreign goods are dumped are beneficiaries, the industries of that country suffer as they are unable to compete with the 'dumped goods'. Besides, there is more harmful 'predatory dumping' which implies that foreign firms try to sell goods in other countries even below cost to establish a worldwide monopoly by driving competitors out of the market. Once the local industries are competed out, they raise prices to obtain monopoly profits.

There is a lot of evidence that firms of USA and Japan often indulge in dumping of their goods in other countries to eliminate competition. But, in our view, instead of providing protection to domestic industries through tariffs or non-tariffs barriers, it will be a better policy to enact laws against dumping. Dumping should be prohibited by law declaring it illegal. In India, such a law has been enacted but is not being properly implemented.

Correcting Balance of Payments Deficit:

Correcting deficit in balance of payments is also mentioned as justification for imposing tariffs to restrict imports or fixing of quotas of imports. This appears to be a valid argument for providing protection.

However, in our view the solution for fundamental disequilibrium in the balance of payments lies in the adoption of suitable adjustment in exchange rate, appropriate fiscal and monetary policies to lower domestic prices so as to encourage exports. The deficit in balance of payments can be reduced by ensuring rapid growth in exports of a country.

Redistribution Income:

Case for protection has also been built up on the ground that it can be used for making desirable redistribution of income from one section of society to another. Protection makes some people better off, while others worse off. By providing protection to domestic producers their profits can be raised at the expense of consumers who suffer a loss in consumer surplus as protection denies them consumption of low-priced imported goods. That is, protection redistributes income in favor of domestic producers.

Sometimes protection causes transfer of income from some factors to the others. For example, Heckscher-Ohlin Model of international trade shows that trade benefits the abundant factor and harms the scarce factor. It is therefore scarce factor that demands protection by the Government against imports so that its income may not decrease. This implies that the workers, the owners of labor, and capitalists tend to take opposite views with regard to protection. This is however not confirmed by empirical evidence.

In some countries one of the objectives of economic policy is to redistribute income from the rich to the poor. This can be done by imposing high tariffs on imports of goods considered to be luxury items and levying tariffs on exports of those goods which are considered as necessities.

Higher import tariffs on luxuries will reduce the incomes of the rich as they would pay taxes to the Government. Similarly, higher taxes on exports of necessities ensure greater supplies of them in the domestic market which would lower their domestic prices and benefit the poor.

It may however be noted that direct taxes such as income tax are considered better methods of redistributing income among various sections of a society than the commercial policy. This is because as we shall see below import tariffs levied for protecting industries cause down-weight loss of welfare which are avoided under the direct tax system.

Conclusion:

We have critically examined the various arguments in favor of protection. Some of them are valid, other appears to be misplaced. Some people consider trade as a 'zero sum game', that is, in trading if one gains, the other loses. This has given rise to the doctrine of exploitation. However, in our view, this is wrong thinking. No trade can occur without expectations of gain.

Tariffs:

Tariffs are excise duties imposed on imported goods. The objective of imposing tariffs may be either raising revenue for the Government or providing protection to the domestic industries.

Therefore, two types of tariffs are distinguished:

(1) Revenue tariffs, and

(2) Protective tariffs.

Revenue tariffs are usually imposed on the imports of those products which are not produced domestically. Rates of revenue tariffs are generally small but yields a good revenue for the Government. For example, in USA, tariffs are imposed on tin, coffee and

bananas which are not produced in that country. Their obvious purpose is to provide revenue to the Government.

Protective tariff, on the other hand are imposed to provide protection to the domestic producers from foreign competition. The rates of these tariffs are not so high as to completely prohibit their imports into a country. Rise in prices of their products as a result of imposition of tariffs, foreign producers lose their superior competitive power.

2. Import Quotas:

Import quotas are another instrument used to check free trade. Import quotas refer to the maximum quantities of goods which may be permitted to be imported during any period of time. They are also referred to as quantitative restrictions on imports. Quotas are more effective method of reducing trade than tariffs.

A given commodity may be imported in a relatively large quantity despite high tariffs but low quotas totally stop the imports of a commodity beyond the fixed quota of the commodity. Since international negotiations to reduce trade barriers have tended to focus on tariffs, the various countries have resorted to non-tariff barriers to free trade. We discuss below the effects of tariffs and quotas.

Effects of a Tariff:

Let us now examine the economic effects of tariffs used as a trade barrier to protect domestic industries. We use partial equilibrium approach represented by supply and demand analysis to examine the effects of tariffs. Let us take a product, say computer, in which India has a comparative disadvantage.

In Fig. 26.1 we have drawn domestic demand and supply curve D_d and S_d respectively of computers in India. In the absence of foreign trade, domestic price OP_d is determined at which OQ quantity of computers is demanded and sold. Assume now that the Indian economy is now opened to trade with USA which has a comparative advantage in the production of computers.

Suppose OP_w represents the world price at which USA sells computers. We assume that when the Indian economy is opened to trade, it can import computers from the USA at this world price OP_w. In other words, free trade price is OP_w.

It will be seen from Fig. 26.1 that at free trade OP_w, the domestic demand (or consumption) for computers is OH and the domestic producers are supplying ON quantity. Thus, with free trade out of OH quantity of consumption of computers, domestic production is ON. The quantity NH of computers is being imported.

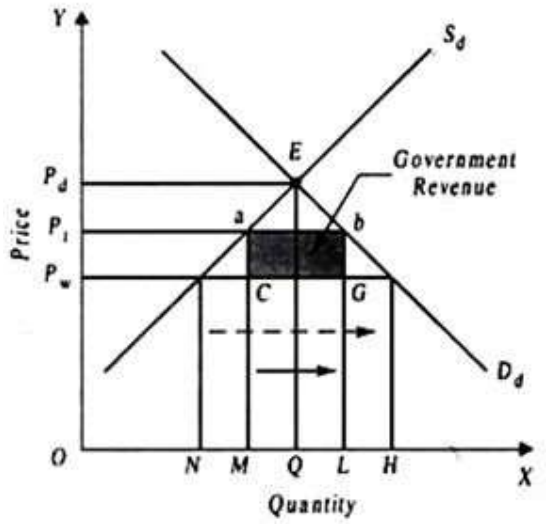

Fig. 26.1. *Economic Effects of a Tariff*

Consumption Effect:

Now suppose that in order to protect domestic computer industry India imposes a tariff of P_w P_t per computer. As a result price of computer in India will rise to OP_t. The imposition of tariff and consequently rise in the price of computers in India will have a variety of effects.

First, as shall be seen from Fig. 26.1 that at a higher price OP_t, the consumption of computers in India will decline to OL computers as the higher price causes buyers of computers to move up the demand curve D_d. This is a consumption effect of the tariff. It follows that the Indian consumers of computers have been badly hurt by the imposition of tariff on computers.

As a result of tariff, they pay P_wP_t more per computer which they now buy at the higher price. Besides, tariff induces them to buy fewer computers with the result that they reallocate a part of their expenditure to less desired substitute products.

Production Effect:

Second, tariff benefits Indian producers of computers as they will now be able to sell their computers at a higher price OP_t instead of free trade price OP_w. Further, at a higher price OP_t, they will produce and supply more computers by moving up the domestic supply curve S_d.

It will be seen from Fig. 26.1 that at price OP_t, domestic producers of computers raise domestic production and quantity supplied from ON to OM. This is the production effect of tariff. It should be further noted that the increase in domestic production of computers by NM implies that some scarce resources will be bid away from other presumably more efficient industries.

Trade Effect:

Third, as a result of imposition of tariff by India, American producers will be hurt. It may be noted that American producers would not get the higher price OP_t as the higher price is due to tariff which will be obtained by the Indian Government. For American producers' price of computers will remain at OP_w. Since due to rise in price to OP_t, domestic production increases to OM and domestic consumption falls to OL, the imports of computers fall from NH to ML. This is trade effect of tariff.

Revenue Effect:

Now, the important effect which is to be examined is whether economic well- being of the nation will increase as a result of imposition of tariff. The answer is in the negative. Of course, the Indian Government will gain from tariff equal to the revenue it collects from tariff.

With rise in price by P_w P_t per computer and the import of computers reduced to ML, (or ab) the total revenue of the Government from tariff will be equal to the shaded area abGC. This is the revenue effect of tariff. This revenue from tariff obtained by the Government is "essentially a transfer of income from the consumers to government and does not represent any net change in the nation's wellbeing. The result is that government gains a portion of what consumers lose."

But the effects of tariffs go beyond the basis of partial equilibrium analysis of demand and supply. The imposition of tariff on computers will reduce export earnings of American computer industry-the industry in which it has a comparative advantage. Because of lower exports of computers, the production of computers will be reduced in the USA.

This will cause the resources to be shifted from relatively more efficient computer industry to relatively inefficient industries of the USA in which it has a comparative disadvantage. Thus, tariffs cause misallocation of resources. To conclude in the words of Professors McConnel and Brue, "specialization and unfettered world trade based on comparative advantage would lead to the efficient use of world resources and an expansion of the world's real output. The purpose and effect of protective tariffs are to reduce world trade. Therefore, aside from their specific effects upon consumers, foreign and domestic producers, tariffs diminish the world's real output."

Effects of Quotas:

Quotas are quantitative restrictions on the quantity or value of a commodity to be imported in a country during a period. Since quota limits the imports of a commodity, it reduces supply of a commodity in a country as compared to the case with a free trade.

Like tariffs, quotas raise the prices of imported goods and encourage domestic production of those goods. But in case of quotas, the government does not collect any revenue. Quotas may be imposed against imports from all countries or used against the imports of only a few countries.

Economic effects of quota are graphically shown in Fig. 26.2 where DM and SM are domestic demand and supply curves of a commodity respectively. In the absence of trade, price of the commodity in the country is P_A. Suppose the world price of the product is P_W.

Under free trade, at price P_w of the commodity the domestic producers of country will produce OQ_1 quantity but as domestic demand of the product at price P_w is OQ_3 the quantity Q_1 Q_3 represents the imports at the world price P_w. Now assume that the Government imposes a quota and fixes the quantity of the product equal to Q_1Q_2 to be imported.

With this the total supply of the product in the domestic market will be away from the domestic supply S_M equal to the distance Q_1Q_2. Incorporating the quota equal to Q_1Q_2 we draw a new supply curve S_M+ Quota, which lies to the left of the free-trade supply curve S_M.

It will be seen from Fig. 26.2 that interaction of the supply curve (S_M + Quota) with the domestic demand curve D_M determines price P_d which is higher than the world price P_w. It will be seen from Fig. 26.2 that difference AB between demand and domestic supply at price P_d is exactly equal to the fixed quota of Q_1Q_2 quantity of imports.

It is thus dear that, like tariffs, fixation of quota has served to limit trade and raise price. It will therefore have same effects as we have explained in case of tariff. It may however be noted that, unlike tariff, in case of quota Government would not collect any revenue.

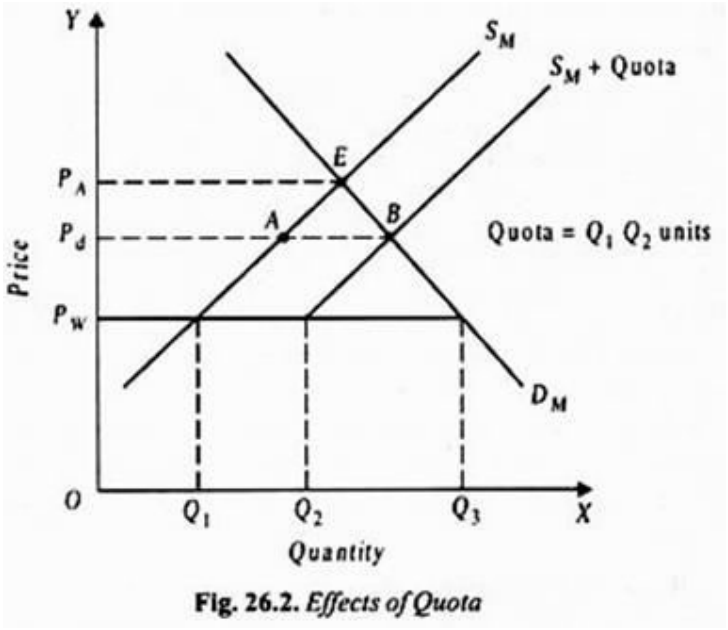

Fig. 26.2. *Effects of Quota*

Balance of Payment (BOP) - Concept & Definition

Most of exports and imports involve finance i.e. receipts and payments in money. An account of all receipts and payments is termed as Balance of Payments (BOP).

According to Kindle berger, "The balance of payments of a country is a systematic record of all economic transactions between the residents of the reporting country and residents of foreign countries during a given period of time".

The balance of payment record is maintained in a standard double-entry book-keeping method. International transactions enter in to the record as credit or debit. The payments received from foreign countries enter as credit and payments made to other countries as debit.

Balance of Payment is a record pertaining to a period of time; usually it is all annual statement. All the transactions entering the balance of payments can be grouped under three broad accounts; (1) Current Account, (2) Capital Account, and (3) Official International Reserve Account. However, it can be vertically divided into many categories as per the requirement.

Structure of Balance of Payment (BOP)

Receipts (Credits)	*Payments (Debits)*
1) Exports of goods	1) Imports of goods
Trade Account Balance	
2) Exports of services	2) Imports of services
3) Interests, profits and dividends received	3) Interests, profits and dividends paid
4) Unilateral receipts	4) Unilateral Payments
Current Account Balance (1 to 4)	
5) Foreign Investments	5) Investments abroad
6) Short term borrowing	6) Short term lending
7) Medium and long term borrowing	7) Medium and long term lending
8) Statistical discrepancy (Errors and omission)	
Capital Account Balance (5 to 8)	
9) Change in reserves (+)	9) Change in reserves
Total Receipts = Total payments	

1. Trade Account Balance

It is the difference between exports and imports of goods, usually referred as visible or tangible items. Till recently goods dominated international trade. Trade account balance tells as whether a country enjoys a surplus or deficit on that account. An industrial country with its industrial products comprising consumer and capital goods always had an advantageous position. Developing countries with its export of primary goods had most of the time suffered from a deficit in their balance of payments. Most of the OPEC countries are in better position on trade account balance.

The Balance of Trade is also referred as the 'Balance of Visible Trade' or 'Balance of Merchandise Trade'.

2. Current Account Balance

It is difference between the receipts and payments on account of current account which includes trade balance. The current account includes export of services, interests, profits, dividends and unilateral receipts from abroad, and the import of services, interests, profits, dividends and unilateral Payments to abroad. There can be either surplus or deficit in current account. The deficit will take place when the debits are more than credits or when payments are more than receipts and the current account surplus will take place when the credits are more than debits.

3. Capital Account Balance

It is difference between the receipts and payments on account of capital account. The capital account involves inflows and outflows relating to investments, short term borrowings/lending, and medium term to long term borrowing/lending. There can be surplus or deficit in capital account. The surplus will take place when the credits are more than debits and the deficit will take place when the debits are more than credits.

4. Foreign Exchange Reserves

Foreign exchange reserves (Check item No.9 in above figure) shows the reserves which are held in the form of foreign currencies usually in hard currencies like dollar, pound etc., gold and Special Drawing Rights (SDRs). Foreign exchange reserves are analogous to an individual's holding of cash. They increase when the individual has a surplus in his transactions and decrease when he has a deficit. When a country enjoys a net surplus both in current account & capital account, it increases foreign exchange reserves. Whenever current account deficit exceeds the inflow in capital account, foreign exchange from the reserve accounts is used to meet the deficit If a country's foreign exchange reserves rise, that transaction is shown as minus in that country's balance of payments accounts because money is being transferred to the foreign exchange reserves.

Foreign exchange reserves (forex) are used to meet the deficit in the balance of payments. The entry is in the receipt side as we receive the forex for the particular year by reducing the balance from the reserves. When surplus is transferred to the foreign exchange reserve, it is shown as minus in that particular year's balance of payment

account. The minus sign (-) indicates an increase in forex and plus sign (+) shows the borrowing of foreign exchange from the forex account to meet the deficit.

5. Errors and Omission

The errors may be due to statistical discrepancies & omission may be due to certain transactions may not be recorded. For example.: A remittance by an Indian working abroad to India may not yet recorded, or a payment of dividend abroad by an MNC operating in India may not yet recorded or so on. The errors and omissions amount equals to the amount necessary to balance both the sides.

Free Trade vs Protection

Free Trade:-A trade policy which does not impose any barrier on the exchange of goods and services between different countries is generally known as the free trade policy.

According to Adam Smith, the term “freetrade” is used to denote,” that system of commercial policy which draws no distinction between domestic and foreign commodities and therefore, neither imposes additional burdens on the later, nor grants any special favour to the former.” In other words, free trade implies complete freedom of international exchange. Under such a policy, there are no barriers to the movement of goods between countries and exchange takes its perfectly natural course. Classical economists like Adam Smith, Ricardo etc pleaded for free trade for the welfare of the world.

Arguments in favour of Free Trade Policy:- The following arguments have been advanced in favour of free trade policy.

(1). Maximisation of output:- Free trade adds to the productivity of the world by making each country specialized in the production of those goods for which it is best fitted. Labour and capital of every country are employed in the most profitable occupations.

(2). Optimum utilisation of resources:- Free trade leads to international specialisation and division of labour. As a result, the existing resources in each trading country are employed more productively and the resource allocation becomes more efficient. There is more efficient utilisation of factors within a firm or industry.

(3). Advantage to consumers:- Free trade benefits the consumers because they are able to buy a variety of commodities from aboard at the minimum possible prices. Thus higher standard of living can be built up and maintained.

(4). Wide markets:- Free trade widens the size of market. As the demand for goods is not confined to one country but to a number of countries, the entire world becomes the market for all types of goods.

(5). Educative value:-According to Heberler, free trade has an educative value. International competition keeps producers in every country alert and they are ready to sacrifice their leisure in order to increase productivity. There is every inducement, therefore, to make technical improvement.

(6). If there is free trade, then various evils associated with protection like, corruption, formation of monopolies, exploitation of consumers etc are avoided.

Arguments against free trade policy:-

1. Free trade policy runs smoothly if all the countries follow the same policy. If some countries do not adopt it, the system cannot work gainfully.
2. Free trade policy may prove advantageous to developed and technologically advanced countries but less developed nations are certainly at a disadvantage on account of unfavorable terms of trade.
3. Competition induced under free trade is unfair and unhealthy. Backward countries cannot compete with advanced countries.
4. Some injurious articles may be imported in the country. The consumer may suffer an irreparable damage. China used to import opium and in course of time, became a nation of opium-eaters. This caused a great damage to their health and morals.
5. Imports of cheap manufactured articles from abroad injure the home industries. There is a great loss to the country.

Protection

The term “protection” is used to denote a policy of encouraging the home industries by the use of bounties or by imposition of high customs duties on foreign products. The object is to build up national industries even by sacrificing utilities on the part of existing consumers.

Arguments for protection:- The main arguments in favor of protection are as under.

Economic arguments for protection

(1). Infant industry arguments:- The late HarkishanLal placed before the Fiscal Commission of 1921 the precept: “Protect the infant, feed the child, and free the adult”. All economists have admitted the force of the argument that industries in their

state of infancy must be protected. Otherwise they will simply wither away in the face of competition. Hence they must be protected.

(2). Diversification of Industry:- It is desirable, in the broader national interests, that varied type of economic life should be fostered in the country. Even if some industries have no chance of developing naturally, they must be developed by the artificial aid of protection. Not merely the quantity, but also the quality of employment has to be considered. For diversifying industries protection is essential.

(3). Key Industries:- For rapid economic development a country should have a stable and sound industrial structure. To achieve this, it must develop key and basic industries like iron and steel, heavy chemical, metallurgical etc. Protection is, therefore, inevitable for the development of such key industries.

(4). Revenue Argument:- Tariffs are a very good source of revenue to a Government, especially because it is the foreigners who pay tariff duties. In Indians customs duties have been a very productive source of state revenue.

(5). Anti-dumping Argument:- Protection is an anti-dumping measure. If a foreign country resorts to dumping with a view to capture market in another country, the home country can grant protection to its own industries. This can be done through the imposition of heavy protective duties on foreign goods.

(6). Balance of payment Argument:- If we do not develop our industries, the balance of payment will become unfavourable and we shall lose gold. We must, therefore develop our own industries, cut down imports and save the outflow of gold.

Non- Economic Arguments

(1). Defence Argument:- Adam Smith remarked," Defense is better than opulence". Even if means a little lessening of economic prosperity, every country must look after its defence. Several industries, which are important for defence, must be developed by means of protection.

(2). Patriotism Argument:- We must patronize our own goods. It is the duty of every citizen to prefer homemade (Swadeshi) goods to foreign goods. As such homemade goods should be available in the right quantity and quality. This is not possible without such home industries being development with the aid of protection.

(3). Preservation Argument:- Protection has been advocated in some countries for the purpose of preserving certain classes of the population or certain occupations. This argument was particularly applied to agricultural duties, to the preservation of an agricultural community or farming industry of the country for political and social reasons. It has been argued that tariff duties should preserve the peasant class as it is the backbone of the society.

Arguments against Protection:- These are as under:

(1). Corruption:- The industrialists try by all possible means, fair or foul, to retain the concessions that they have obtained. It is generally found that in countries where protection has been adopted, systematic efforts are made to bribe the Government officials and the legislators.

(2). Vested interests:- Protection creates vested interests. Concessions once granted cannot easily be withdrawn. We give protection to infant industries. But when they grow, the infants start kicking at the slightest indication that the concession is going to be withdrawn. Infants remain infants.

(3). Monopolies:- Tariff is said to be the "mother of trusts". Wherever protection has been adopted, it has given rise to combinations. These combinations exploit the consumers and ruthlessly crush their rivals.

(4). Lethargy:- When the home manufacturers have been protected from foreign competition, they become lethargic. They do not try to introduce any improvement either to cheapen their products or to improve their quantity.

(5). Consumers suffer:- Protection raises prices and the consumers suffer. The unprotected industries also suffer in the same manner.

(6). Leads to war:- Protection leads to retaliation and international conflicts. This may lead to war.

Tariffs:- "A schedule of duties levied upon the importation of commodities into a given nation from abroad" is called a tariff. In a broader sense, however, tariffs include all custom duties, export duties and transit duties.

Types of Tariffs:-

(1). Specific Tariffs:- A duty is said to be specific when it is imposed according to a standard of weight or measurement e.g Rs.10 per yard of cloth or Rs.20 per 40 kg of wheat etc.

(2). Advalorem Tariff:- The duty is called advalorem when it is imposed according to value e.g 10% on motor car or radio sets.

(3). Sliding scale Tariffs:-These are imposed in relation to the prices of goods, when the price falls, tariff is reduced and when the price rises, tariff is increased . Sliding scale tariff may be specific or ad-valorem.

(4). Compound Tariffs:- Compound tariffs are those which combine a specific duty with advalorem duty. As the price of the imposed goods rise, the advalorem tariffs brings greater revenue to the tariff imposing country, where as specific tariffs lack such revenue elasticity with respect to import price changes.

(5). Discriminatory Tariffs:- It involves different rates of duties depending on the country of origin. For example, a country can impose higher rates of duty on goods coming from country "A" and lower rates of duty on goods coming from country "B".

(6). Non-discriminatory Tariffs:- It involves a uniform rate of duty regard less of their source of origin. Tariffs are said to be a single column when they are non-discriminatory and multiple column when they are discriminatory.

(7). Revenue Tariffs:- Revenue Tariffs are those whose primary purpose is to provide revenue to the state. They are generally at a lower rate and not intended to exclude imports. They are usually levied on imports of consumption goods.

(8). Protective Tariffs:- when the tariffs are imposed primarily to protect the domestic industries from the foreign competition, the country is said to have protective tariffs.

(9). Retaliatory Tariffs:- When country "A" imposes duties against the products from country "B", it is possible that country "B" will retaliate and levy duties on goods imported from country "A". Country B's tariffs are then described as retaliatory tariffs.

(10). Countervailing Tariffs:- Tariffs are said to be counter-veiling when a country imposes import duties with a view to offset export subsidy in the country of origin.

Effects of Tariffs (Partial equilibrium Analysis)

Tariffs have a variety of effects which depend upon their power to reduce imports. Prof Kindle Berger has listed eight effects of tariffs which are as under.

(1). Price effect:- The price effect of a tariff is explained in terms of fig 1 where D and S are the domestic demand and supply curves of a commodity. OP represents the constant world price at which the foreign producers are prepared to sell their commodity in the domestic market. Thus, the horizontal line PB is the supply curve of imports which is perfectly elastic at OP price. Thus under free trade the equilibrium market position is given by point B where the domestic demand curve D intersects the world supply curve PB at the price OP. The total demand for the commodity is OQ3. The domestic supply is OQ. The difference between domestic demand and domestic supply is met by importing QQ3 quantity at "OP" price.

suppose a tariff of PP1 is imposed on the imports of the commodity. Given a constant foreign price, the domestic price of the commodity rise by the full amount of the tariff to OP1. Thus the rise in price of the commodity by PP1 is the price effect of the tariff

. Redistribution Effect

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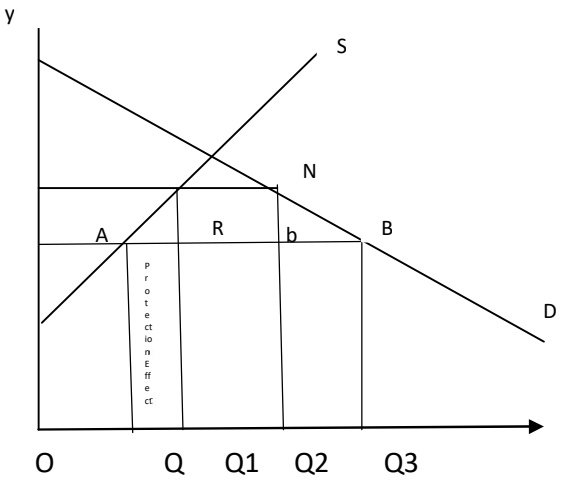

. Consumption effect p1

. p

As a result, the new equilibrium market position is given by point "N" so that the total demand for the commodity is OQ2 which is partly met by the domestic supply OQ1 and partly by importing Q1Q2.

(2). Protective effect:- The protective effect shows how the domestic industry can be protected from foreign competition by imposing and import duty. In fig 1, under the free trade, QQ3 quantity of the commodity is imported at OP price with the imposition of the import duty of PP1, imports are reduced to Q1Q2, while the domestic production of the commodity increases from OQ to OQ1. Thus the increase in the domestic production of the commodity by QQ1 as a result of the tariff is protective effect.

(3). Consumption effect:- Before the imposition of a tariff, consumers were consuming OQ3 quantity of the commodity at price OP. With the levying of an import duty of PP1, the price of the commodity rises to OP1. Now imports are reduced by Q3 Q2 and the total consumption of the commodity is also reduced from OQ3 to OQ2. Thus Q3Q2 is the consumption effect of the tariff.

(4). Revenue Effect:- Initially the tariff is assumed zero at price OP. So when PP1 import duty is levied, the revenue to the Government, is equal to the amount of the import duty multiplied by the quantity of imports. The revenue effect is therefore, PP1 X Q1Q2 or the rectangular shaded area R.

(5). Competitive Effect:- Imposition of tariff eliminates foreign competition and gives scope for the domestic producers to capture the market. Similarly, removal of tariff increases competition from abroad and breaks domestic monopolies.

(6). Income Effect:-If a country is facing unemployment problem imposition of tariff will increase employment and thus increase national income.

(7). The terms of trade effect:- Tariff will reduce the volume of trade and the terms of trade will improve for the country imposing the tariff.

(8). Redistribution effect:- The imposition of the tariff increases the price of the commodity and thus reduces the consumes surplus. In this way, some income is transferred from the consumers to the producers. This affects distribution of income. It is called redistribution effect. In the diagram it is represented by the quadrilateral P1PAM.

Import Quotes

Like tariff, import quotes are another protectionist device and an old form of trade restriction that come into existence since the Mercantilist era.

An import quota implies a fixed quantity or value of a commodity that has been allowed to be imported in the country during a given period of time. In practice, quotas may be fixed either in terms of the physical volume or monetary value of imports or a combination of the two.

Types of Quotas:- Quota system may be of following types:

(1). The tariff quota:- Under this system , imports of a commodity upto a specified quantity are allowed to be imported duty-free or at a special low rate of duty.

(2). The unilateral Quota:- Under this system, a country places an absolute limit on the importation of a commodity during a given period. It is imposed without prior negotiation with foreign Governments.

(3). The Bilateral Quota:- Under this system, quotas are set through negotiation between the importing country and the exporting country.

(4). The Mixing Quota:- It is a type of regulation which requires producers to utilise a certain proportion of domestic raw materials along with imported parts to produce finished goods domestically. It thus sets limits on the proportion of foreign-made raw materials to be used in domestic production.

(5). Import Licensing:- Under this system, the prospective importers are required to obtain a license from the proper authorities for importing any quantity within the specified quotas.

Tariffs versus Quotas

Tariffs and quotas are the two method of protection. Although the effect of these two methods of protection are almost similar, but both the methods are useful in different conditions. In some cases, quotas are superior to tariffs but in other tariffs are more effective than the quotas.

Superiority of quotas over tariffs:-

(1). As compared to tariffs, quotas are much precise and their effects are much more certain.

(2). It has been argued that quotas tend to be more flexible, more easily imposed and more easily removed instruments of commercial policy than tariffs.

(3). As a protectionist measure, a quota is more effective than the tariff. A tariff seeks to discourage imports by raising the price of imported articles. It, however, fails to restrict imports when the demand for imports is price inelastic. But a quota is very effective in restricting imports within the required limits.

(4). Quotas may be employed as a measure to prevent the international transmission of severe recessions. A recession usually causes a decline in prices, and this may encourage exports. A country may make use of quotas to guard against such recession induced exports into the country.

Superiority of tariffs over quotas:-

A country imposes an import tariff to make her condition better off i.e to enjoy a higher community welfare. If, after the imposition of the tariff, the country reaches the highest possible trade indifference curve, she will realise the maximum welfare from the imposition of tariff. Tariffs are superior to quotas in the following ways;

1. The effects of quotas are more rigorous and arbitrary and they tend to distort international trade much more than tariffs. That is why GATT condemns quotas and prefers tariffs to quotas for controlling imports.
2. Usually, quotas fix a rigid quantitative limit on imports. Thus, they are harsh and inflexible in their operation. In case of tariffs, on the other hand, no such rigidity lies. A tariff is rather mild and flexible in its restrictive influence.
3. Quotas are too restrictive and generally lead to retaliatory action by other countries.
4. Quota system gives too much power to the administrative officials and thus encourages corruption and favoritism.
5. Tariffs permit the market forces of supply and demand to operate freely.
6. When tariffs are imposed, the rise in price is absorbed partly or fully by the states as revenue. Thus, a revenue to the government.

ACE INTERATIONAL SCHOOL MATTAN.

WRITE FULL FORM:

CPU: SUB: COMPUTER.

ATM:

CD:

VDU:

USB:

SUB: SCIENCE.

Q.1 WHAT IS AN ENGINEAR ?

ANS:_____.

Q.2 WHA DO YOU MEAN BY A.E.E ?

ANS: _____.

Q.3 WHAT IS THE NAME OF YOUR SCHOOL TEAM ?

ANS: _____.