MODULE=III

Q.1.Explain different market structure & their characterstics.

Ans. **Meaning of Market:**

Ordinarily, the term "market" refers to a particular place where goods are purchased and sold. But, in economics, market is used in a wide perspective. In economics, the term "market" does not mean a particular place but the whole area where the buyers and sellers of a product are spread.

This is because in the present age the sale and purchase of goods are with the help of agents and samples. Hence, the sellers and buyers of a particular commodity are spread over a large area. The transactions for commodities may be also through letters, telegrams, telephones, internet, etc. Thus, market in economics does not refer to a particular market place but the entire region in which goods are bought and sold. In these transactions, the price of a commodity is the same in the whole market.

According to Prof. R. Chapman, "The term market refers not necessarily to a place but always to a commodity and the buyers and sellers who are in direct competition with one another." In the words of A.A. Cournot, "Economists understand by the term 'market', not any particular place in which things are bought and sold but the whole of any region in which buyers and sellers are in such free intercourse with one another that the price of the same goods tends to equality, easily and quickly." Prof. Cournot's definition is wider and appropriate in which all the features of a market are found.

Contents :

Characteristics of Market:

The essential features of a market are:

(1) An Area:

In economics, a market does not mean a particular place but the whole region where sellers and buyers of a product ate spread. Modem modes of communication and transport have made the market area for a product very wide.

(2) One Commodity:

In economics, a market is not related to a place but to a particular product.

Hence, there are separate markets for various commodities. For example, there are separate markets for clothes, grains, jewellery, etc.

(3) Buyers and Sellers:

The presence of buyers and sellers is necessary for the sale and purchase of a product in the market. In the modem age, the presence of buyers and sellers is not necessary in the market because they can do transactions of goods through letters, telephones, business representatives, internet, etc.

(4) Free Competition:

There should be free competition among buyers and sellers in the market. This competition is in relation to the price determination of a product among buyers and sellers.

(5) One Price:

The price of a product is the same in the market because of free competition among buyers and sellers.

On the basis of above elements of a market, its general definition may be as follows:

The market for a product refers to the whole region where buyers and sellers of that product are spread and there is such free competition that one price for the product prevails in the entire region.

Market Structure:

Meaning:

Market structure refers to the nature and degree of competition in the market for goods and services. The structures of market both for goods market and service (factor) market are determined by the nature of competition prevailing in a particular market.

Determinants:

There are a number of determinants of market structure for a particular good.

They are:

(1) The number and nature of sellers.

(2) The number and nature of buyers.

(3) The nature of the product.

(4) The conditions of entry into and exit from the market.

(5) Economies of scale.

They are discussed as under:

1. Number and Nature of Sellers:

The market structures are influenced by the number and nature of sellers in the market. They range from large number of sellers in perfect competition to a single seller in pure monopoly, to two sellers in duopoly, to a few sellers in oligopoly, and to many sellers of differentiated products.

2. Number and Nature of Buyers:

The market structures are also influenced by the number and nature of buyers in the market. If there is a single buyer in the market, this is buyer's monopoly and is called monopsony market. Such markets exist for local labour employed by one large employer. There may be two buyers who act jointly in the market. This is called duopsony market. They may also be a few organised buyers of a product.

This is known as oligopsony. Duopsony and oligopsony markets are usually found for cash crops such as rice, sugarcane, etc. when local factories purchase the entire crops for processing.

3. Nature of Product:

It is the nature of product that determines the market structure. If there is product differentiation, products are close substitutes and the market is characterised by monopolistic competition. On the other

hand, in case of no product differentiation, the market is characterised by perfect competition. And if a product is completely different from other products, it has no close substitutes and there is pure monopoly in the market.

4. Entry and Exit Conditions:

The conditions for entry and exit of firms in a market depend upon profitability or loss in a particular market. Profits in a market will attract the entry of new firms and losses lead to the exit of weak firms from the market. In a perfect competition market, there is freedom of entry or exit of firms.

But in monopoly and oligopoly markets, there are barriers to entry of new firms. Usually, governments have a monopoly in public utility services like postal, air and road transport, water and power supply services, etc. By granting exclusive franchises, entries of new supplies are barred. In oligopoly markets, there are barriers to entry of firms because of collusion, tacit agreements, cartels, etc. On the other hand, there are no restrictions in entry and exit of firms in monopolistic competition due to product differentiation.

5. Economies of Scale:

Firms that achieve large economies of scale in production grow large in comparison to others in an industry. They tend to weed out the other firms with the result that a few firms are left to compete with each other. This leads to the emergency of oligopoly. If only one firm attains economies of scale to such a large extent that it is able to meet the entire market demand, there is monopoly.

Forms of Market Structure:

On the basis of competition, a market can be classified in the following ways:

1. Perfect Competition

2. Monopoly

3. Duopoly

4. Oligopoly

5. Monopolistic Competition

1. Perfect Competition Market:

A perfectly competitive market is one in which the number of buyers and sellers is very large, all engaged in buying and selling a homogeneous product without any artificial restrictions and possessing perfect knowledge of market at a time. In the words of A. Koutsoyiannis, "Perfect competition is a market structure characterised by a complete absence of rivalry among the individual firms." According to R.G. Lipsey, "Perfect competition is a market structure in which all firms in an industry are price- takers and in which there is freedom of entry into, and exit from, industry."

Characteristics of Perfect Competition:

The following are the conditions for the existence of perfect competition:

(1) Large Number of Buyers and Sellers:

The first condition is that the number of buyers and sellers must be so large that none of them individually is in a position to influence the price and output of the industry as a whole. The demand of individual buyer relative to the total demand is so small that he cannot influence the price of the product by his individual action.

Similarly, the supply of an individual seller is so small a fraction of the total output that he cannot influence the price of the product by his action alone. In other words, the individual seller is unable to influence the price of the product by increasing or decreasing its supply.

Rather, he adjusts his supply to the price of the product. He is "output adjuster". Thus no buyer or seller can alter the price by his individual action. He has to accept the price for the product as fixed for the whole industry. He is a "price taker".

(2) Freedom of Entry or Exit of Firms:

The next condition is that the firms should be free to enter or leave the industry. It implies that whenever the industry is earning excess profits, attracted by these profits some new firms enter the industry. In case of loss being sustained by the industry, some firms leave it.

(3) Homogeneous Product:

Each firm produces and sells a homogeneous product so that no buyer has any preference for the product of any individual seller over others. This is only possible if units of the same product produced by different

sellers are perfect substitutes. In other words, the cross elasticity of the products of sellers is infinite.

No seller has an independent price policy. Commodities like salt, wheat, cotton and coal are homogeneous in nature. He cannot raise the price of his product. If he does so, his customers would leave him and buy the product from other sellers at the ruling lower price.

The above two conditions between themselves make the average revenue curve of the individual seller or firm perfectly elastic, horizontal to the X-axis. It means that a firm can sell more or less at the ruling market price but cannot influence the price as the product is homogeneous and the number of sellers very large.

(4) Absence of Artificial Restrictions:
The next condition is that there is complete openness in buying and selling of goods. Sellers are free to sell their goods to any buyers and the buyers are free to buy from any sellers. In other words, there is no discrimination on the part of buyers or sellers.

Moreover, prices are liable to change freely in response to demand-supply conditions. There are no efforts on the part of the producers, the government and other agencies to control the supply, demand or price of the products. The movement of prices is unfettered.

(5) Profit Maximisation Goal:
Every firm has only one goal of maximising its profits.

(6) Perfect Mobility of Goods and Factors:

Another requirement of perfect competition is the perfect mobility of goods and factors between industries. Goods are free to move to those places where they can fetch the highest price. Factors can also move from a low-paid to a high-paid industry.

(7) Perfect Knowledge of Market Conditions:
This condition implies a close contact between buyers and sellers. Buyers and sellers possess complete knowledge about the prices at which goods are being bought and sold, and of the prices at which others are prepared to buy and sell. They have also perfect knowledge of the place where the transactions are being carried on. Such perfect knowledge of market conditions forces the sellers to sell their product at the prevailing market price and the buyers to buy at that price.

(8) Absence of Transport Costs:
Another condition is that there are no transport costs in carrying of product from one place to another. This condition is essential for the existence of perfect competition which requires that a commodity must have the same price everywhere at any time. If transport costs are added to the price of the product, even a homogeneous commodity will have different prices depending upon transport costs from the place of supply.

(9) Absence of Selling Costs:
Under perfect competition, the costs of advertising, sales-promotion, etc. do not arise because all firms produce a homogeneous product.

Perfect Competition vs Pure Competition:

Perfect competition is often distinguished from pure competition, but they differ only in degree. The first five conditions relate to pure competition while the remaining four conditions are also required for the existence of perfect competition. According to Chamberlin, pure competition means, competition unalloyed with monopoly elements," whereas perfect competition involves perfection in many other respects than in the absence of monopoly." The practical importance of perfect competition is not much in the present times for few markets are perfectly competitive except those for staple food products and raw materials. That is why, Chamberlin says that perfect competition is a rare phenomenon."

Though the real world does not fulfil the conditions of perfect competition, yet perfect competition is studied for the simple reason that it helps us in understanding the working of an economy, where competitive behaviour leads to the best allocation of resources and the most efficient organisation of production. A hypothetical model of a perfectly competitive industry provides the basis for appraising the actual working of economic institutions and organisations in any economy.

2. Monopoly Market:

Monopoly is a market situation in which there is only one seller of a product with barriers to entry of others. The product has no close substitutes. The cross elasticity of demand with every other product is very low. This means that no other firms produce a similar product. According to D. Salvatore, "Monopoly is the form of market organisation in which there is a single firm selling a commodity for

which there are no close substitutes." Thus the monopoly firm is itself an industry and the monopolist faces the industry demand curve.

The demand curve for his product is, therefore, relatively stable and slopes downward to the right, given the tastes, and incomes of his customers. It means that more of the product can be sold at a lower price than at a higher price. He is a price-maker who can set the price to his maximum advantage.

However, it does not mean that he can set both price and output. He can do either of the two things. His price is determined by his demand curve, once he selects his output level. Or, once he sets the price for his product, his output is determined by what consumers will take at that price. In any situation, the ultimate aim of the monopolist is to have maximum profits.

Characteristics of Monopoly:

The main features of monopoly are as follows:

1. Under monopoly, there is one producer or seller of a particular product and there is no difference between a firm and an industry. Under monopoly a firm itself is an industry.

2. A monopoly may be individual proprietorship or partnership or joint stock company or a cooperative society or a government company.

3. A monopolist has full control on the supply of a product. Hence, the elasticity of demand for a monopolist's product is zero.

4. There is no close substitute of a monopolist's product in the market. Hence, under monopoly, the cross elasticity of demand for a monopoly product with some other good is very low.

5. There are restrictions on the entry of other firms in the area of monopoly product.

6. A monopolist can influence the price of a product. He is a price-maker, not a price-taker.

7. Pure monopoly is not found in the real world.

8. Monopolist cannot determine both the price and quantity of a product simultaneously.

9. Monopolist's demand curve slopes downwards to the right. That is why, a monopolist can increase his sales only by decreasing the price of his product and thereby maximise his profit. The marginal revenue curve of a monopolist is below the average revenue curve and it falls faster than the average revenue curve. This is because a monopolist has to cut down the price of his product to sell an additional unit.

3. Duopoly:

Duopoly is a special case of the theory of oligopoly in which there are only two sellers. Both the sellers are completely independent and no agreement exists between them. Even though they are independent, a change in the price and output of one will affect the other, and may set a chain of reactions. A seller may, however, assume that his rival is

unaffected by what he does, in that case he takes only his own direct influence on the price.

If, on the other hand, each seller takes into account the effect of his policy on that of his rival and the reaction of the rival on himself again, then he considers both the direct and the indirect influences upon the price. Moreover, a rival seller's policy may remain unaltered either to the amount offered for sale or to the price at which he offers his product. Thus the duopoly problem can be considered as either ignoring mutual dependence or recognising it.

4. Oligopoly:

Oligopoly is a market situation in which there are a few firms selling homogeneous or differentiated products. It is difficult to pinpoint the number of firms in 'competition among the few.' With only a few firms in the market, the action of one firm is likely to affect the others. An oligopoly industry produces either a homogeneous product or heterogeneous products.

The former is called pure or perfect oligopoly and the latter is called imperfect or differentiated oligopoly. Pure oligopoly is found primarily among producers of such industrial products as aluminium, cement, copper, steel, zinc, etc. Imperfect oligopoly is found among producers of such consumer goods as automobiles, cigarettes, soaps and detergents, TVs, rubber tyres, refrigerators, typewriters, etc.

Characteristics of Oligopoly:

In addition to fewness of sellers, most oligopolistic industries have several common characteristics which are explained below:

(1) Interdependence:

There is recognised interdependence among the sellers in the oligopolistic market. Each oligopolist firm knows that changes in its price, advertising, product characteristics, etc. may lead to counter-moves by rivals. When the sellers are a few, each produces a considerable fraction of the total output of the industry and can have a noticeable effect on market conditions.

He can reduce or increase the price for the whole oligopolist market by selling more quantity or less and affect the profits of the other sellers. It implies that each seller is aware of the price-moves of the other sellers and their impact on his profit and of the influence of his price-move on the actions of rivals.

Thus there is complete interdependence among the sellers with regard to their price-output policies. Each seller has direct and ascertainable influences upon every other seller in the industry. Thus, every move by one seller leads to counter-moves by the others.

(2) Advertisement:

The main reason for this mutual interdependence in decision making is that one producer's fortunes are dependent on the policies and fortunes of the other producers in the industry. It is for this reason that oligopolist firms spend much on advertisement and customer services.

As pointed out by Prof. Baumol, “Under oligopoly advertising can become a life-and-death matter.” For example, if all oligopolists continue to spend a lot on advertising their products and one seller does not match up with them he will find his customers gradually going in for his rival’s product. If, on the other hand, one oligopolist advertises his product, others have to follow him to keep up their sales.

(3) Competition:

This leads to another feature of the oligopolistic market, the presence of competition. Since under oligopoly, there are a few sellers, a move by one seller immediately affects the rivals. So each seller is always on the alert and keeps a close watch over the moves of its rivals in order to have a counter-move. This is true competition.

(4) Barriers to Entry of Firms:

As there is keen competition in an oligopolistic industry, there are no barriers to entry into or exit from it. However, in the long run, there are some types of barriers to entry which tend to restraint new firms from entering the industry.

They may be:

(a) Economies of scale enjoyed by a few large firms; (b) control over essential and specialised inputs; (c) high capital requirements due to plant costs, advertising costs, etc. (d) exclusive patents and licenses; and (e) the existence of unused capacity which makes the industry unattractive. When entry is restricted or blocked by such natural and

artificial barriers, the oligopolistic industry can earn long-run super normal profits.

(5) Lack of Uniformity:

Another feature of oligopoly market is the lack of uniformity in the size of firms. Finns differ considerably in size. Some may be small, others very large. Such a situation is asymmetrical. This is very common in the American economy. A symmetrical situation with firms of a uniform size is rare.

(6) Demand Curve:

It is not easy to trace the demand curve for the product of an oligopolist. Since under oligopoly the exact behaviour pattern of a producer cannot be ascertained with certainty, his demand curve cannot be drawn accurately, and with definiteness. How does an individual seller s demand curve look like in oligopoly is most uncertain because a seller's price or output moves lead to unpredictable reactions on price-output policies of his rivals, which may have further repercussions on his price and output.

The chain of action reaction as a result of an initial change in price or output, is all a guess-work. Thus a complex system of crossed conjectures emerges as a result of the interdependence among the rival oligopolists which is the main cause of the indeterminateness of the demand curve.

If the oligopolist seller does not have a definite demand curve for his product, then how does he affect his sales. Presumably, his sales

depend upon his current price and those of his rivals. However, a number of conjectural demand curves can be imagined.

For example, in differentiated oligopoly where each seller fixes a separate price for his product, a reduction in price by one seller may lead to an equivalent, more, less or no price reduction by rival sellers. In each case, a demand curve can be drawn by the seller within the range of competitive and monopoly demand curves.

Leaving aside retaliatory price movements, the individual seller's demand curve under oligopoly for both price cuts and increases is neither more elastic than under perfect or monopolistic competition nor less elastic than under monopoly. It may still be indefinite and indeterminate.

This situation is shown in Figure 1 where KD_1 is the elastic demand curve and MD is the less elastic demand curve. The oligopolies' demand curve is the dotted kinked KPD. The reason is quite simple. If a seller reduces the price of his product, his rivals also lower the prices of their products so that he is not able to increase his sales.

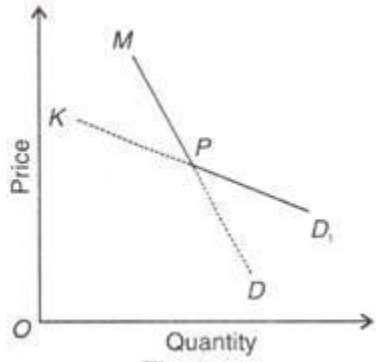

Fig. 1.

So the demand curve for the individual seller's product will be less elastic just below the present price P (where $KD_1$and MD curves are shown to intersect). On the other hand, when he raises the price of his product, the other sellers will not follow him in order to earn larger profits at the old price. So this individual seller will experience a sharp fall in the demand for his product.
Thus his demand curve above the price P in the segment KP will be highly elastic. Thus the imagined demand curve of an oligopolist has a comer or kink at the current price P. Such a demand curve is much more elastic for price increases than for price decreases.

(7) No Unique Pattern of Pricing Behaviour:
The rivalry arising from interdependence among the oligopolists leads to two conflicting motives. Each wants to remain independent and to get the maximum possible profit. Towards this end, they act and react on the price-output movements of one another in a continuous element of uncertainty.

On the other hand, again motivated by profit maximisation each seller wishes to cooperate with his rivals to reduce or eliminate the element of uncertainty. All rivals enter into a tacit or formal agreement with regard to price-output changes. It leads to a sort of monopoly within oligopoly.

They may even recognise one seller as a leader at whose initiative all the other sellers raise or lower the price. In this case, the individual seller's demand curve is a part of the industry demand curve, having the elasticity of the latter. Given these conflicting attitudes, it is not

possible to predict any unique pattern of pricing behaviour in oligopoly markets.

5. Monopolistic Competition:

Monopolistic competition refers to a market situation where there are many firms selling a differentiated product. “There is competition which is keen, though not perfect, among many firms making very similar products.” No firm can have any perceptible influence on the price-output policies of the other sellers nor can it be influenced much by their actions. Thus monopolistic competition refers to competition among a large number of sellers producing close but not perfect substitutes for each other.

It’s Features:

The following are the main features of monopolistic competition:

(1) Large Number of Sellers:

In monopolistic competition the number of sellers is large. They are “many and small enough” but none controls a major portion of the total output. No seller by changing its price-output policy can have any perceptible effect on the sales of others and in turn be influenced by them. Thus there is no recognised interdependence of the price-output policies of the sellers and each seller pursues an independent course of action.

(2) Product Differentiation:

One of the most important features of the monopolistic competition is differentiation. Product differentiation implies that products are

different in some ways from each other. They are heterogeneous rather than homogeneous so that each firm has an absolute monopoly in the production and sale of a differentiated product. There is, however, slight difference between one product and other in the same category.

Products are close substitutes with a high cross-elasticity and not perfect substitutes. Product "differentiation may be based upon certain characteristics of the products itself, such as exclusive patented features; trade-marks; trade names; peculiarities of package or container, if any; or singularity in quality, design, colour, or style. It may also exist with respect to the conditions surrounding its sales."

(3) Freedom of Entry and Exit of Firms:

Another feature of monopolistic competition is the freedom of entry and exit of firms. As firms are of small size and are capable of producing close substitutes, they can leave or enter the industry or group in the long run.

(4) Nature of Demand Curve:

Under monopolistic competition no single firm controls more than a small portion of the total output of a product. No doubt there is an element of differentiation nevertheless the products are close substitutes. As a result, a reduction in its price will increase the sales of the firm but it will have little effect on the price-output conditions of other firms, each will lose only a few of its customers.

Likewise, an increase in its price will reduce its demand substantially but each of its rivals will attract only a few of its customers. Therefore,

the demand curve (average revenue curve) of a firm under monopolistic competition slopes downward to the right. It is elastic but not perfectly elastic within a relevant range of prices of which he can sell any amount.

(5) Independent Behaviour:

In monopolistic competition, every firm has independent policy. Since the number of sellers is large, none controls a major portion of the total output. No seller by changing its price-output policy can have any perceptible effect on the sales of others and in turn be influenced by them.

(6) Product Groups:

There is no any 'industry' under monopolistic competition but a 'group' of firms producing similar products. Each firm produces a distinct product and is itself an industry. Chamberlin lumps together firms producing very closely related products and calls them product groups, such as cars, cigarettes, etc.

(7) Selling Costs:

Under monopolistic competition where the product is differentiated, selling costs are essential to push up the sales. Besides, advertisement, it includes expenses on salesman, allowances to sellers for window displays, free service, free sampling, premium coupons and gifts, etc.

(8) Non-price Competition:

Under monopolistic competition, a firm increases sales and profits of his product without a cut in the price. The monopolistic competitor

can change his product either by varying its quality, packing, etc. or by changing promotional programmes.

2.Determination of equilibrium under perfect competition.

Ans. *Under perfect competition, many factors influence the determination of the price of goods. In this article, we will look at the equilibrium of the industry and the equilibrium of a firm as important factors behind price determination under perfect competition.*

Equilibrium of the Industry under Perfect Competition

In economic terms, an industry consists of many independent firms. Each firm has a number of factories, farms or mines, as required. Each such firm in industry produces a homogeneous product. Equilibrium of the industry happens when the total output of the industry is equal to the total demand. In such a scenario, the prevailing price of a commodity is its equilibrium price.

We know that under competitive conditions, the interaction of demand and supply determines the equilibrium price as shown below:

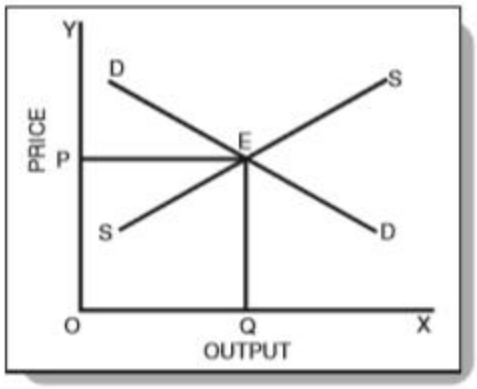

Fig. 1 : Equilibrium of a competitive industry

In Fig. 1 above, OP is the equilibrium price. Further, OQ is the equilibrium quantity sold at that price. Now, the equilibrium price is the price at which both the demand and supply are equal. In other words, no buyer, who wanted to buy at that price, goes dissatisfied and no seller, who wanted to sell his goods at that price, goes dissatisfied either.

Note that with the demand remaining the same, if the price is higher or lower than OP, then the market is not in equilibrium. Also, if goods are lesser or higher than the demand, the equilibrium is not attained.

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- *Monopoly Market*
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Equilibrium of the Firm under Perfect Competition

A firm is in equilibrium when it maximizes its profits. Hence, the output that offers maximum profit to a firm is the equilibrium output. When a firm is in equilibrium, there is no reason to increase or decrease the output.

In a competitive market, firms are price-takers. The reason being the presence of a large number of firms who produce homogeneous products. Therefore, firms cannot influence the price in their individual capacities. They have to follow the price determined by the industry.

The following figure shows a firm's demand curve under perfect competition:

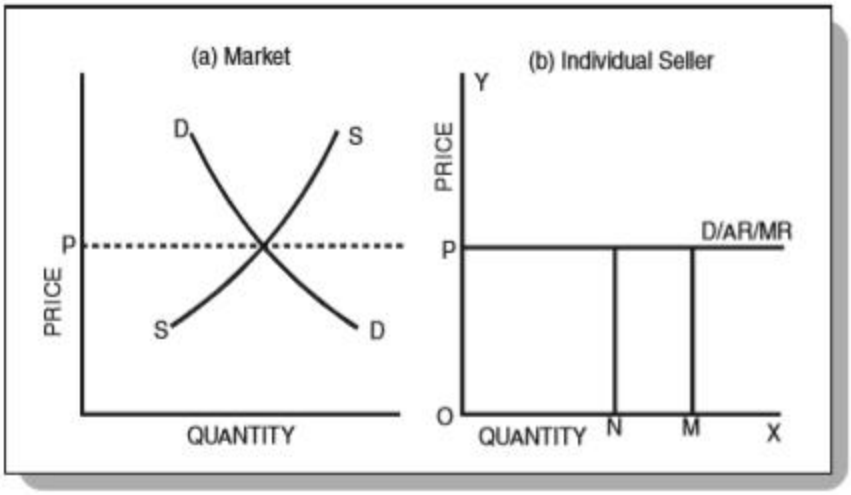


Fig. 2 : The firm's demand curve under perfect competition

From Fig. 2 above, you can see that the industry price, OP, is fixed throughout the interaction of demand and supply of the industry. Firms have to accept this price. Hence, they are price-takers and not price-makers. Hence, they cannot increase or decrease the price OP.

Therefore, the line P acts as a demand curve for such firms. Hence, in perfect competition, the demand curve of an individual firm is a horizontal line at the level of the industry-set market price. Firms have to choose the level of output that yields maximum profit.

Conditions for the equilibrium of a firm

To attain an equilibrium position, a firm must satisfy the following two conditions:

They must ensure that the marginal revenue is equal to the marginal cost (MR = MC).

- *If MR > MC, the firm has an incentive to expand its production and sell additional units.*
- *If MR < MC, the firm must reduce the output since additional units add more cost than revenue.*
- *The firm gets maximum profits only when MR = MC.*

1. *The MC curve must have a positive slope and cut the MR curve from below.*

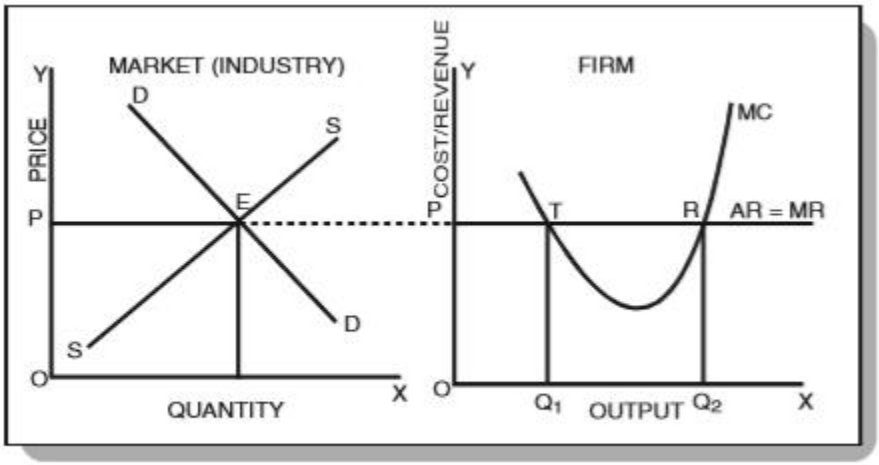


Fig. 3 : Equilibrium position for a firm under perfect competition

In Fig. 3 above, DD is the demand curve and SS is the supply curve. They equilibrate at point E and set the market price as OP. Under perfect competition, firms adopt OP as the industry price and consider the P-line as the demand curve or AR – average revenue curve (perfectly elastic at P).

Since all units are equally priced, the MR curve is a horizontal line and is equal to the AR line. Observe that the curve MC cuts the MR curve at two points – T and R. At point T, the MC curve cuts the MR curve from above

whereas at point R it cuts the MR curve from below. Therefore, according to the conditions of equilibrium of a firm, point R is the point of equilibrium and OQ_2 is the equilibrium level of output.

3.Explain Break Even Analysis in Linear Approach.

Ans. **Break-Even Analysis:**
Break-even analysis seeks to investigate the interrelationships among a firm's sales revenue or total turnover, cost, and profits as they relate to alternate levels of output. A profit-maximizing firm's initial objective is to cover all costs, and thus to reach the break-even point, and make net profit thereafter.

The break-even point refers to the level of output at which total revenue equals total cost. Management is no doubt interested in this level of output. However, it is much more interested in the broad question of what happens to profits (or losses) at various rates of output.

Therefore, the primary objective of using break-even charts as an analytical device is to study the effects of changes in output and sales on total revenue, total cost, and ultimately on total profit. Break-even analysis is a very generalized approach for dealing with a wide variety of questions associated with profit planning and forecasting.

The following list seeks to highlight some of the more practical applications of break-even analysis:
1. What happens to overall profitability when a new product is introduced?

2. What level of sales is needed to cover all costs and earn, say, Rs. 1, 00,000 profit or a 12% rate of return?

3. What happens to revenues and costs if the price of one of a company's products is changed?

4. What happens to overall profitability if a company purchases new capital equipment or incurs higher or lower fixed or variable costs?

5. Between two alternative investments, which one offers the greater margin of profit (safety)?

6. What are the revenue and cost implications of changing the process of production?

7. Should one make, buy, or lease capital equipment?

Our basic objective here is to introduce the general break-even model, in both graphical and algebraic forms, and to explore the practical use of the model. It may be noted at the outset that although the model has some limitations, if used properly, it can provide management with some valuable guidelines in making certain strategic decisions. After presenting the model these limitations will be brought into focus.

Graphical Presentation of Break-Even Model:

Figure 21.1 presents the simplest and most common graphical representation of break-even analysis. The horizontal axis measures the rate of output, and revenues and costs, measured in rupees, are shown on the vertical axis. Figure 21.1 combines an inverted U-shaped total revenue (TR) curve and the familiar S-shaped short run total cost curve (TC).

The curvilinear shape of the total revenue curve follows from the assumption that the firm faces a downward-sloping demand curve and must reduce its price to be able to sell more. The law of diminishing returns accounts for the curvilinear shape of the total cost curve.

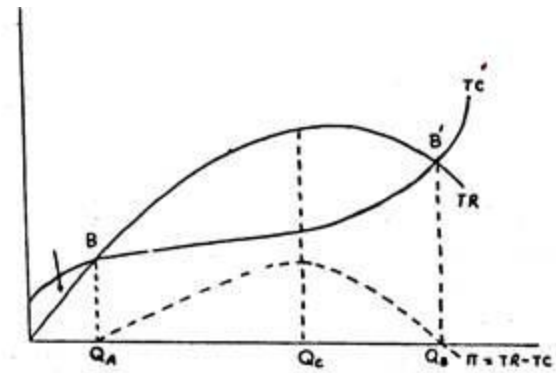


Fig 21.1 Break Analysis: the generalized model

The vertical distance between TR and TC measures the profit or loss associated with any specific level of output. To the left of Q_a and to the right of Q_b total costs exceed total revenues, and there are losses.

So there are two break-even points. Between these two points, profits are positive because TR exceeds TC. The point at which profits are maximized (that is, the point at which the vertical distance between TR and TC is the largest) is shown as Q_c.

The generalized model in Figure 21.1 is usually simplified to a linear break-even chart, such as that in Figure 21.2. Linearity in the total revenue function implies that the firm is selling in a perfectly competitive market, and hence is a pure price taker and does not have to reduce its price to sell more.

Conversely, linearity in the case of the total cost curve implies that the firm can expand output without changing its variable cost per unit very much. For a relatively narrow output range, this is no doubt a reasonable assumption.

Moreover, we make this linearity assumption to make our analysis simple, and thus to provide management with general profit guidelines, not to suggest exact answers to certain problems. These qualifications apart, there is much to -be said for using the linear break-even model in the real commercial world.

commercial world.

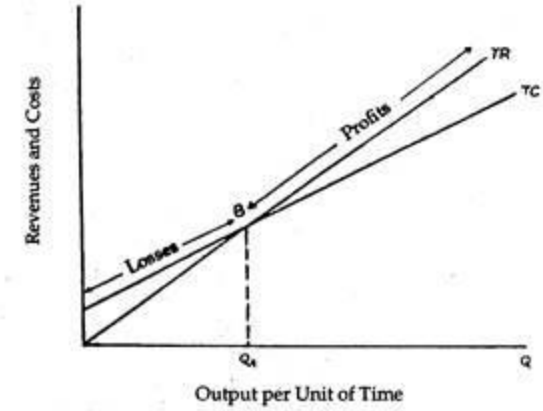


Fig 21.2 Linear Breakeven Chart

The break-even point is the point where total revenue = total cost, or price per unit = cost per unit. In Figure 21.1 the firm breaks even at two different points B and B'. At both the points there is neither profit nor loss.

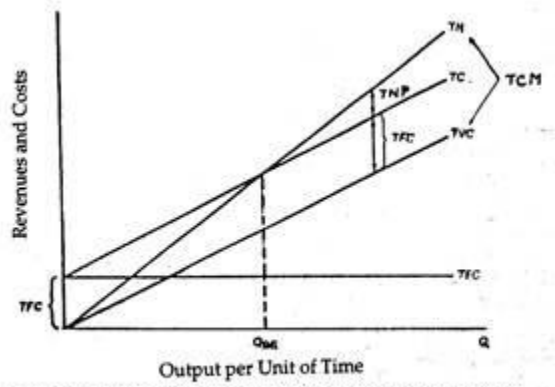


Fig 21.3 Contribution Margin Breakeven Chart

In Figure 21.2 the point at which TR equals TC, point Q_A, is the break-even level of output. To the left of this point the firm incurs losses because TC exceeds TR. But in Figure 21.1 there were two break-even points. In the decision-making process managers often employ a modified breakeven model.

This modification follows from the notion that management may not necessarily think of profit in the economic sense of total revenues, minus total costs. When used for short-run decision making, where a portion of the firm's monetary resource has already been blocked in the purchase of fixed capital, a more appropriate measure known as the contribution margin or contribution to profit is used.

In the short-run a firm's initial objective is to cover variable cost. If this cannot be covered, a firm would prefer to close down its operations completely and attempt to minimize its losses. If the price of the product exceeds variable cost, the firm would attempt to expand production with a view to covering fixed cost and make profit subsequently. So output will expand if price exceeds average variable costs.

The difference between the two (i.e., P — AVC) is called the contribution margin per unit, or average contribution margin. This shows the contribution of the product toward the recovery of fixed cost and toward net profit. If it is multiplied by the sales volume (Q), we arrive at the total contribution margin.

In short, contribution margin refers to the difference between total revenue and total variable cost. For example, if a product sells for Rs. 5 per unit, and overall variable cost is Rs. 3 per unit, each unit sold makes a contribution of Rs. 2 toward the recovery of fixed cost.

Figure 21.3 illustrates a contribution margin break-even chart based on linear cost and revenue curves. Here total net profit TNP, is the difference between TR and TC.

Total contribution margin (or profit) TCM is expressed as:
TCM = TNP + TFC

TCM = TR – TVC.

Contribution as a Decision Criterion:

The difference between the revenue produced from sale of a product, and its production and selling cost, is the contribution towards fixed

costs and to the ultimate net profit. This contribution concept is often used for decision-making purposes.

There is hardly any reason, however, why every product-line made and marketed by the firm should be expected to make the same contribution. By contrast, there is a case for assuming that preference should be given to those product-lines which offer the possibility of making the largest contribution.

An important element of cost-volume-profit analysis is the marginal income ratio or profit-volume ratio, defined as **"the percentage of the sales which is available as a contribution to fixed costs and profits after direct costs are deducted."**
It is expressed as:

$$\frac{\text{Sales} - \text{Variable Costs}}{\text{Sales}} \times 100$$

$$= \frac{\text{Fixed Cost} + \text{Net Profit}}{\text{Sales}} \times 100$$

One may contrast this method with that of 'full cost'. Suppose that a hypothetical company is considering the relative merits of two products, X and Y.

Initially, it approaches the problem by way of full cost and produces some such statement as the following:

	Product X	Product Y
Sales price	Rs. 8.00	Rs. 12.00
Full cost	7.00	10.50
Profit	1.00	1.50
Net profit on sales	$12\frac{1}{2}\%$	$12\frac{1}{2}\%$

It may apparently seem, from this example, that both products yield the same percentage profit on sales and that there is nothing to choose between them.

If, however, one focusses on the dubious nature of the cost allocation embodied in the above figures, an alternative presentation might be made on the following lines:

	Product X	Product Y
Sales price	Rs. 8.00	Rs. 12.00
Variable cost	4.00	9.00
Contribution	4.00	3.00
Profit-volume ratio	50%	25%

Now we get a completely different picture. Each unit of X sold produces a higher cash contribution and a higher rate of contribution towards fixed costs and profit. It would surely merit the attention of the management in preference to product Y. The relationship is illustrated in Figure 21.4.

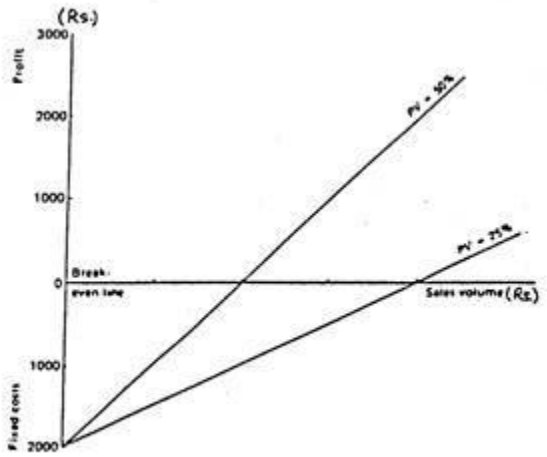


Fig 21.4 Profit-Volume Breakeven Chart

In order to adopt this type of approach, one must relate the costs directly to the production and marketing of the product—the costs which could be avoided by not producing the item. Clearly, the selling price must generate sufficient revenue to cover these in the normal course of business.

If the company is largely a 'price taker', having to accept the prevailing market price, the above cost data can be used to determine the product mix which will yield the maximum contribution for the least sales revenue. If, however, the company is a 'price maker' with some degree of independence in price fixing, it can use the data as the starting point in price determination.

In a multi-product firm, it is not enough merely to determine the product mix with a view to the maximization of contribution. The firm

will be equipped with production facilities, some of which may be specific to given products, whilst others can be used for more than one product, though the demands made on them in terms of time will vary from one product to another.

Thus, in settling for a given pattern of contribution, the manufacturer must make certain that this does not make him suffer from capacity constraints.

As a guide to the solution of this problem it may appear necessary to evolve some yardstick to enable a decision to be made as to which product-line or order is to be discarded, when particular production facilities are overburdened.

Consider the following example:

	Product *A*	Product *B*
Selling price	Rs. 50,000	Rs. 50,000
Avoidable cost	40,000	30,000
Contribution	10,000	20,000
Profit-volume ratio	20%	40%
Production facility hours required	40	100
Contribution per hour	Rs. 250	Rs. 200

The order B contributes Rs. 20,000 to fixed charges and profit as against the Rs. 10,000 provided by order A. But its claim on production facilities if 25 times as great. The result is that the contribution per facility hour is Rs. 200 as against Rs. 250.

If capacity is inadequate, say 60 hours, to undertake both orders, and if part orders cannot be taken, then the management may be constrained to reject order B. Thus, if the volume of production which the firm can sell exceeds the existing capacity, the optimal results will be obtained by producing those orders which make the maximum contribution per facility hour in the area where the bottleneck occurs.

Example 1:
A company produces two products X and Y. The following facts are given regarding them:

Products	X	Y
Profit contribution per unit	Rs. 2	Rs. 3
Required production hour per unit	1	2

Products	X	Y
Profit contribution per unit	Rs. 2	Rs. 3
Required production hour per unit	1	2

Products	X	Y
Sales potential (unit)	1,500	800
Available production hours: 2,000		

Solution.

	X	Y
Contribution per unit	Rs. 2	Rs. 3
Required production hour per unit	1	2
Contribution per hour	Rs. 2	Rs. 1.50

Since the production hour is the limiting factor, product X, which makes greater contribution per hour, will be accorded priority.

Therefore, optimum product mix will be as under:

Total available hours	2,000
Hours required for X (for 15,000 units)	1,500
Balance	500

The remaining 500 hours will be utilised for the production of Y, i.e., 500/2 = 250 units of Y can be produced in the remaining hours.

X : 1500 units × 1 hrs per unit	1,500 hrs
Y : 250 units × 2 hrs per unit	500 hrs
	2,000 hrs

We know that average net profit, i.e., ANP = P- ATC = P- AVC – AFC or ANP + AFC = P — AVC = ACM or average contribution margin. Now at the break-even point ANP = 0. Therefore, AFC = ACM. So the break-even point can be identified by finding out the level of sales at which AFC = ACM. See Figure 21.5.

Algebra of Break-Even Analysis:

Let us continue to assume linear cost and revenue functions. We may now define the symbols usually used in break-even analysis:

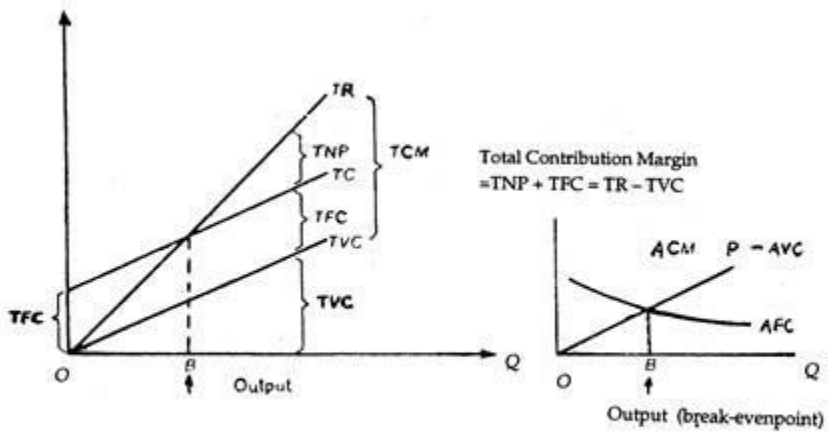


Fig 21.5 Contribution Margin

Q	=	quantity of output, measured in units at a point of time.
P	=	Selling price per unit of output (assumed to remain constant in the short run)
TR	=	$P \times Q$, total (sales) revenue.
TFC	=	total fixed costs = a.
AVC	=	average variable costs = b.
TVC	=	total varible costs = $b \times Q$.
ACM	=	average (or per-unit) contribution margin
	=	$P - AVC = ANP + AFC$.
TC	=	total costs, $TFC + TVC$ or $TFC + Q(AVC)$.
TCP	=	total contribution to profit
	=	$TR - TVC = TNP + TFC$
	=	$Q(ACM)$.
TNP	=	the total profit from the sales of Q units
	=	$TR - TC$
	=	$TR - TFC - TVC$, or, $TR = TCM + TVC$, or, $TCN = TR - TVC$.
B	=	break-even output level, in units.
Q_b	=	break-even sales level = $P \times B$, (in rupees).
$\%B$	=	break-even utilization rate (load factor).
Q_{cap}	=	plant capacity.

As per definition, the break-even point occurs when TR equals TC. Substituting into this equality, we obtain,

$$\begin{aligned} TR &= TC \\ P \times Q_b &= TFC + TVC \\ &= TFC + AVC \times Q_b \\ Q_b(P - AVC) &= TFC. \qquad (1) \end{aligned}$$

Thus the break-even quantity may be expressed as

$$Q_b = \frac{(TFC)}{(P - AVC)} = \frac{(TFC)}{(ACM)} \qquad (2)$$

$$\begin{aligned} \text{or,} \quad & P \times Q_b - a + bQ_b = 0, \\ & \qquad \text{at the break-even point} \\ \text{or,} \quad & P \times Q_b = a + bQ_b \\ \text{or,} \quad & P \times Q_b - bQ_b = a \\ \text{or,} \quad & Q_b(P - b) = a \\ \text{or,} \quad & Q_b = \frac{a}{P - b} = \frac{TFC}{ACM}. \qquad (2a) \end{aligned}$$

Three Alternatives:

The breakeven point may now be computed in one of three different but interrelated ways:

(1) As a number of units mat must be sold,

(2) Money value of sales, or

(3) As a percentage of plant capacity.

To illustrate, assume that we have a factory that can produce a maximum of 20,000 units of output per month. These 20,000 units can be sold at a price of Rs. 100 per unit. Variable costs are Rs. 20 per unit and the total fixed costs are Rs. 2, 00,000.

1. By a direct application of Eq. (2) we can compute the number of units that must be sold to break even:

$$Q_b = \frac{\text{Rs. } 200,000}{\text{Rs. } 100 - \text{ Rs. } 20} = 2500 \text{ units.}$$

In order to verify this, we could simply compute the TR and the TC when output equals 2500 units:

$$\begin{aligned} TR &= P \times Q \\ &= (100) \times (2500) \\ &= \text{Rs. } 250,000 \\ TC &= TFC + Q(AVC) \\ &= 200,000 + (2500)(\text{Rs. } 20) \\ &= \text{ Rs. } 250,000. \end{aligned}$$

2. If one is to determine the break-even level measured in terms of rupee sales, Eq. (2) has to be slightly modified to yield where S_b denotes the breakeven sales level.

$$Q_b = \frac{TFC}{P - AVC} = \frac{TFC}{1 - \left(\frac{AVC}{P}\right)} \qquad (3)$$

$$\text{or,} \quad S_b = P \cdot Q_b = \left(\frac{TFC}{P - AVC}\right) \cdot P$$

$$= \frac{TFC}{1 - \left(\frac{AVC \cdot Q_b}{P \cdot Q_b}\right)}$$

$$\text{or,} \quad S_b = \frac{TFC}{1 - \left(\frac{TVC}{TR}\right)}, \qquad (3a)$$

The denominator in equation (3a) provide a measure of the contribution made by the product to recover fixed costs. For our example, the breakeven level in rupee sales is which is the same result that can be obtained by multiplying the break-even quantity by unit price.

$$S_b = \frac{\text{Rs. } 200,000}{1 - \left(\frac{20}{100}\right)} = \text{Rs. } 250,000$$

In equation (3), the contribution margin is calculated on a per unit basis from the ratio of AVC to price. In equation (3a), the contribution margin is calculated on a total sales revenue basis from the ratio of TVC to TR. The ratio is the same in each case and in both the situations the calculated ratio is subtracted from 1 to yield the percentage of revenue that contributes to recovery of fixed costs or overhead.

3. In order to determine the breakeven point in terms of percentage utilization of plant capacity (%B), (or load factor to be achieved) Eq. (2) has to be modified as follows:

$$\%B = \frac{TFC}{(P - AVC) \times Q_{cap}} \times 100. \qquad (4)$$

Here Q_{cap} refers to maximum capacity of the plant expressed in units of output.

Thus in our example

$$\%B = \frac{\text{Rs. } 200,000}{(\text{Rs. } 100 - \text{Rs. } 20)20,000} \times 100 = 12.5\%$$

which indicates that the firm can break even by using only 12.5% of its capacity.

Example 2:

Indian Airlines has a capacity to carry a maximum of 10,000 passengers per month from Calcutta to Guwahati at a fare of Rs. 500. Variable costs are Rs. 100 per passenger, and fixed costs are Rs. 3, 00,000 per month. How many passengers should be carried per

month to break even? What load factor (i.e., average percentage of seating capacity filled) must be reached to break even?

We may note that P – AVC = Rs. 500 – Rs. 100 = Rs. 400. Then, by equation (7) or (7a) we get

$$Q_b \text{ (passengers)} = \frac{\text{Rs. } 30,00,000}{\text{Rs. } 400} = 7,500 \text{ passengers.}$$

The break-even sales value can be calculated by using equation (10) thus:

$$Q_b = \frac{\text{Rs. } 30,00,000}{1 - \left(\frac{\text{Rs. } 100}{\text{Rs. } 500}\right)} = \frac{\text{Rs. } 30,00,000}{0.8} = \text{Rs. } 37,50,000.$$

Obtaining Information Necessary for Break-Even Models:
To construct break-even charts or models we have to study a single time period's income and expense accounts. With the income and expense statements in hand we have to then categorise the various costs as either fixed or variable. We may then proceed to construct our model. The principal advantage of this approach is that it highlights the role of each of the cost categories affecting profits.

Alternatively one can compare a series of income and expense accounts over several time periods in which management has been varying both cost and output levels. This information may then be utilized to arrive at an estimate of an empirical cost function (usually, via regression), which, when combined with the revenue functions, provides information on breakeven levels.

This approach has one obvious advantage that more information is incorporated into the model. But the major problem with this approach is that sufficient data may not be available to enable us to estimate either the cost or revenue functions.

1.Explain the causes of depreciation.

Ans. **Meaning of Depreciation:**

"Depreciation may be defined as the permanent decrease in the value of an asset through wear and tear in use or the passage of time."

"The Primary meaning of the word depreciation is loss of value through wear and the tear or some other form of material deterioration. The secondary sense of depreciation is the operation of adjusting the book values of assets. As the machines or other assets get old, it is the practice of the Accountant to reduce their values in the books of accounts and it is usual to call this as depreciation."

"Depreciation is an expense or loss involved in using machinery, motor vehicles, tools and other fixed assets in the process of production and has to be provided for; this is done by estimating the amount to be written off the value of a particular asset each year and setting this amount against the profits for that year."

"The term depreciation represents loss or diminution in the value of an asset consequent upon wear and tear, obsolescence, effluxion of time or permanent fall in market value."

Causes of Depreciation:

1. Wear and Tear:

Some assets physically deteriorate due to wear and tear in use. When an asset is constantly used for production, the asset wears out. More and more use of an asset, the greater would be the wear and tear. Physical deterioration of an asset is caused from movement, strain, friction, erosion etc. For instance, building, machineries, furniture,

vehicles, plant etc. The wear and tear is general but primary cause of depreciation.

2. Lapse of Time:

There are certain assets like leasehold property, patents, copy-right etc. that are acquired for a particular period. After the expiry of the period, they are rendered useless i.e. their value ceases to exist. Thus, their cost is written off over their legal life.

3. Obsolescence:

Appearance of new and improved machines results in discarding of old machines. Thus new inventions, change in fashions and taste, market condition, Government policies etc. are the causes to discard the value of an asset. But this is not the cause of depreciation and not depreciation in real sense

A new machine performs the same function more quickly and cheaply than the existing machine. As such, existing machine may become out of date or outmoded or obsolete.

4. Exhaustion:

Some assets are of wasting nature. For instance, quarries, mines, oil-well etc. It is the reduction in the value of natural deposits as resources have been extracted year after year. As such these assets are known as wasting assets. The coalmine or oil well gets physically exhausted by the removal of its contents.

5. Non-Use:

Machines which are idly lying become less and less useful with the passage of time. Certain types of machines exposed to weather

conditions, may have more depreciation from not using it than from its use.

6. Maintenance:

A good maintenance of machine will naturally increase its life. When there is no maintenance, there is more depreciated value. When there is good maintenance, there is longer life to the machines. The long life of machine depends upon good and skilled maintenance.

7. Market Trend:

The market price may fluctuate in case of certain assets, for instance, investments in gilt-edged securities. When the prices go down, the concerned asset may depreciate its value. In certain cases, accident causes diminution in the value of assets.

Need For Depreciation:

Depreciation is provided for the assets with a view to achieve the following results:

1. To Ascertain the True Working Result:

Asset is an important tool in earning revenues. Huge amounts are spent for acquisition of assets which are worn out in the process of earning income. Thus, the assets get depreciated in their value, over a period of time due to many reasons explained above.

When the value of assets decreases, this loss must be brought into account; otherwise a true working result cannot be known. Depreciation is an operating expense of a physical asset, the same should be considered in arriving the true profit earned during each year.

The basic need of depreciation is to ascertain the true income. If depreciation is ignored, the loss that is occurring in respect of fixed assets will be ignored. So, depreciation should be debited to Profit and Loss Account before profit is ascertained.

2. To Ascertain True Value of Asset:

The function of the Balance Sheet is to show the true and correct view of the state of affairs of a business. If no depreciation is charged and when assets are shown at the original cost year after year, Balance Sheet will not disclose the correct state of affairs of a business.

3. To Retain Funds for Replacement:

Assets used in the business need replacement after the expiry of their service. It is always not possible to determine the useful life of assets. But, in certain cases, machine often becomes, obsolete long before it wears out because of rapid changes in tastes and technology. It is a permanent loss in value of the asset. When an asset is continuously used, a time will come when the asset is to be given up and hence its replacement is essential.

Therefore, if no depreciation is charged against the profit, during the life time of the asset, it will be very difficult to find cash to replace the asset and if replaced it may cripple resources. Therefore, it is necessary to make provision and create funds to replace such assets, in proper time.

4. To Reduce Tax Liability:

Depreciation is a tax deductible expense. As such, it is permitted by the prevailing taxation laws to be deducted from profit. Consequently,

the owner of a business may avail himself of this benefit by charging depreciation to his profit and reducing his tax liability.

5. To Present True Position:

Financial position can be studied from the Balance Sheet and for the preparation of the Balance Sheet fixed assets are required to be shown at their true value. If assets are shown in the Balance Sheet without any charge made for their use, (that is, depreciation) then their value must have been overstated in the Balance Sheet and will not reflect the true financial position of the business.

Therefore, for the purpose of reflecting true financial position, it is necessary that depreciation must be done.

3.Explain the meaning,types and causes of Inflation

Meaning of Inflation:

Inflation is often defined in terms of its supposed causes. Inflation exists when money supply exceeds available goods and services. Or inflation is attributed to budget deficit financing. A deficit budget may be financed by the additional money creation. But the situation of monetary expansion or budget deficit may not cause price level to rise. Hence the difficulty of defining 'inflation'.

Inflation may be defined as 'a sustained upward trend in the general level of prices' and not the price of only one or two goods. G. Ackley defined inflation as 'a persistent and appreciable rise in the general level or average of prices'. In other words, inflation is a state of rising prices, but not high prices.

Types of Inflation:

As the nature of inflation is not uniform in an economy for all the time, it is wise to distinguish between different types of inflation. Such

analysis is useful to study the distributional and other effects of inflation as well as to recommend anti-inflationary policies. Inflation may be caused by a variety of factors. Its intensity or pace may be different at different times. It may also be classified in accordance with the reactions of the government toward inflation.

Thus, one may observe different types of inflation in the contemporary society:

A. On the Basis of Causes:

(i) Currency inflation:

This type of inflation is caused by the printing of currency notes.

(ii) Credit inflation:

Being profit-making institutions, commercial banks sanction more loans and advances to the public than what the economy needs. Such credit expansion leads to a rise in price level.

(iii) Deficit-induced inflation:

The budget of the government reflects a deficit when expenditure exceeds revenue. To meet this gap, the government may ask the central bank to print additional money. Since pumping of additional money is required to meet the budget deficit, any price rise may the be called the deficit-induced inflation.

(iv) Demand-pull inflation:

An increase in aggregate demand over the available output leads to a rise in the price level. Such inflation is called demand-pull inflation (henceforth DPI). But why does aggregate demand rise? Classical economists attribute this rise in aggregate demand to money supply. If the supply of money in an economy exceeds the available goods and services, DPI appears. It has been described by Coulborn as a situation of “too much money chasing too few goods.”

Keynesians hold a different argument. They argue that there can be an autonomous increase in aggregate demand or spending, such as a rise

in consumption demand or investment or government spending or a tax cut or a net increase in exports (i.e., C + I + G + X – M) with no increase in money supply. This would prompt upward adjustment in price. Thus, DPI is caused by monetary factors (classical adjustment) and non-monetary factors (Keynesian argument).

DPI can be explained in terms of Fig. 4.2, where we measure output on the horizontal axis and price level on the vertical axis. In Range 1, total spending is too short of full employment output, Y_F. There is little or no rise in the price level. As demand now rises, output will rise. The economy enters Range 2, where output approaches towards full employment situation. Note that in this region price level begins to rise. Ultimately, the economy reaches full employment situation, i.e., Range 3, where output does not rise but price level is pulled upward. This is demand-pull inflation. The essence of this type of inflation is that "too much spending chasing too few goods."

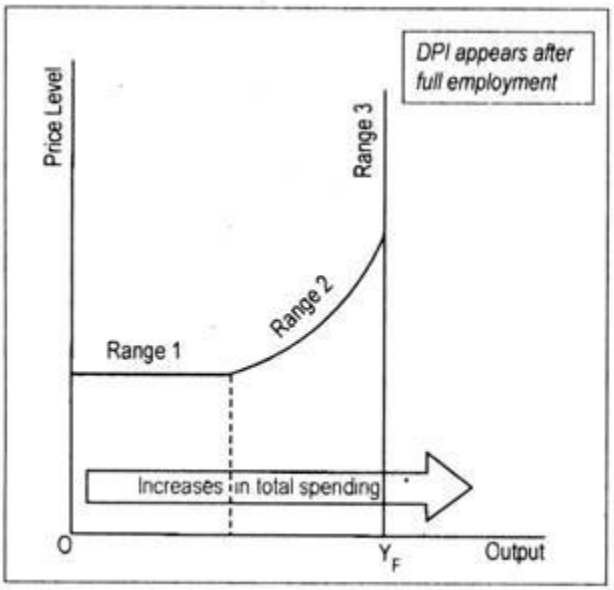


Fig. 4.2: Demand-pull Inflation

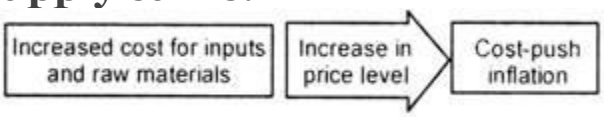
(v) Cost-push inflation:

Inflation in an economy may arise from the overall increase in the cost of production. This type of inflation is known as cost-push inflation (henceforth CPI). Cost of production may rise due to an increase in the prices of raw materials, wages, etc. Often trade unions are blamed for

wage rise since wage rate is not completely market-determinded. Higher wage means high cost of production. Prices of commodities are thereby increased.

A wage-price spiral comes into operation. But, at the same time, firms are to be blamed also for the price rise since they simply raise prices to expand their profit margins. Thus, we have two important variants of CPI wage-push inflation and profit-push inflation.

Anyway, CPI stems from the leftward shift of the aggregate supply curve:



B. On the Basis of Speed or Intensity:

(i) Creeping or Mild Inflation:

If the speed of upward thrust in prices is slow but small then we have creeping inflation. What speed of annual price rise is a creeping one has not been stated by the economists. To some, a creeping or mild inflation is one when annual price rise varies between 2 p.c. and 3 p.c. If a rate of price rise is kept at this level, it is considered to be helpful for economic development. Others argue that if annual price rise goes slightly beyond 3 p.c. mark, still then it is considered to be of no danger.

(ii) Walking Inflation:

If the rate of annual price increase lies between 3 p.c. and 4 p.c., then we have a situation of walking inflation. When mild inflation is allowed to fan out, walking inflation appears. These two types of inflation may be described as 'moderate inflation'.

Often, one-digit inflation rate is called 'moderate inflation' which is not only predictable, but also keep people's faith on the monetary system of the country. Peoples' confidence get lost once moderately

maintained rate of inflation goes out of control and the economy is then caught with the galloping inflation.

(iii) Galloping and Hyperinflation:
Walking inflation may be converted into running inflation. Running inflation is dangerous. If it is not controlled, it may ultimately be converted to galloping or hyperinflation. It is an extreme form of inflation when an economy gets shattered."Inflation in the double or triple digit range of 20, 100 or 200 p.c. a year is labelled "galloping inflation".

(iv) Government's Reaction to Inflation:
Inflationary situation may be open or suppressed. Because of anti-inflationary policies pursued by the government, inflation may not be an embarrassing one. For instance, increase in income leads to an increase in consumption spending which pulls the price level up.

If the consumption spending is countered by the government via price control and rationing device, the inflationary situation may be called a suppressed one. Once the government curbs are lifted, the suppressed inflation becomes open inflation. Open inflation may then result in hyperinflation.

It is not high prices but rising price level that constitute inflation. It constitutes, thus, an overall increase in price level. It can, thus, be viewed as the devaluing of the worth of money. In other words, inflation reduces the purchasing power of money. A unit of money now buys less. Inflation can also be seen as a recurring phenomenon.

Causes:-

- Inflation can arise from internal and external events
- Some inflationary pressures direct from the domestic economy, for example the decisions of utility businesses providing electricity or gas or water on their tariffs for the year ahead, or the pricing strategies of the food retailers based on the strength of demand and competitive pressure in their markets.

- A rise in the rate of VAT would also be a cause of increased domestic inflation in the short term because it increases a firm's production costs.
- Inflation can also come from external sources, for example a sustained rise in the price of crude oil or other imported commodities, foodstuffs and beverages.
- Fluctuations in the exchange rate can also affect inflation – for example a fall in the value of the pound against other currencies might cause higher import prices for items such as foodstuffs from Western Europe or technology supplies from the United States – which feeds through directly or indirectly into the consumer price index

Demand-pull inflation

- Demand pull inflation occurs when aggregate demand is growing at an unsustainable rate leading to **increased pressure on scarce resources** and a **positive output gap**
- When there is **excess demand**, producers can raise their prices and achieve bigger **profit margins**
- Demand-pull inflation becomes a threat when an economy has experienced a boom with GDP rising faster than the long-run trend growth of potential GDP
- Demand-pull inflation is likely when there is **full employment of resources** and SRAS is inelastic

What are the main causes of Demand-Pull Inflation?

1. A **depreciation of the exchange rate** increases the price of imports and reduces the foreign price of a country's exports. If consumers buy fewer imports, while exports grow, AD in will rise – and there may be a multiplier effect on the level of demand and output
2. **Higher demand from a fiscal stimulus** e.g. lower direct or indirect taxes or higher government spending. If direct taxes are reduced, consumers have more disposable income causing demand to rise. Higher government spending and increased borrowing creates extra demand in the circular flow
3. **Monetary stimulus to the economy:** A fall in interest rates may stimulate too much demand – for example in raising demand for loans or in leading to house price inflation. Monetarist economists believe that inflation is caused by “too much money chasing too few goods" and that governments can lose control of inflation if they allow the financial system to expand the money supply too quickly.
4. **Fast growth in other countries** – providing a boost to UK exports overseas. Export sales provide an extra flow of income and spending into the UK circular flow – so what is happening to the economic cycles of other countries definitely affects the UK

Methods to Control Inflation

August 1, 2019 by Tejvan Pettinger

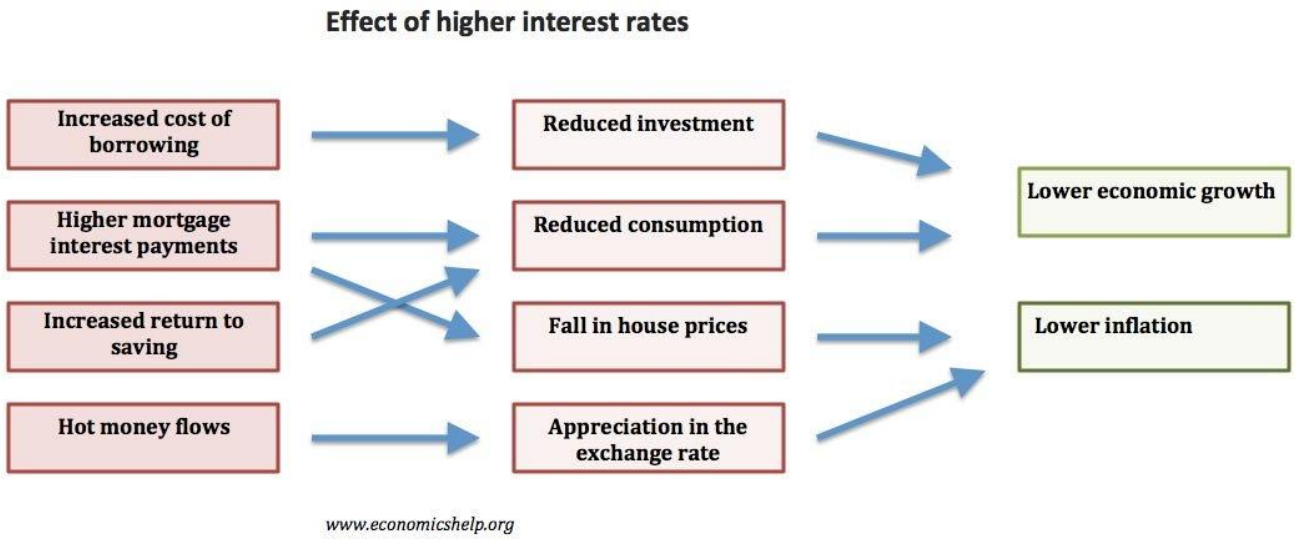
Inflation is generally controlled by the Central Bank and/or the government. The main policy used is monetary policy (changing interest rates). However, in theory, there are a variety of tools to control inflation including:

1. **Monetary policy** – Higher interest rates reduce demand in the economy, leading to lower economic growth and lower inflation.
2. **Control of money supply** – Monetarists argue there is a close link between the money supply and inflation, therefore controlling money supply can control inflation.
3. **Supply-side policies** – policies to increase the competitiveness and efficiency of the economy, putting downward pressure on long-term costs.
4. **Fiscal policy** – a higher rate of income tax could reduce spending, demand and inflationary pressures.
5. **Wage controls –** trying to control wages could, in theory, help to reduce inflationary pressures. However, apart from the 1970s, it has been rarely used.

Monetary Policy

In a period of rapid economic growth, demand in the economy could be growing faster than its capacity to meet it. This leads to inflationary pressures as firms respond to shortages by putting up the price. We can term this demand-pull inflation. Therefore, reducing the growth of aggregate demand (AD) should reduce inflationary pressures.

The Central bank could **increase** interest rates. Higher rates make borrowing more expensive and saving more attractive. This should lead to lower growth in consumer spending and investment. See more on higher interest rates



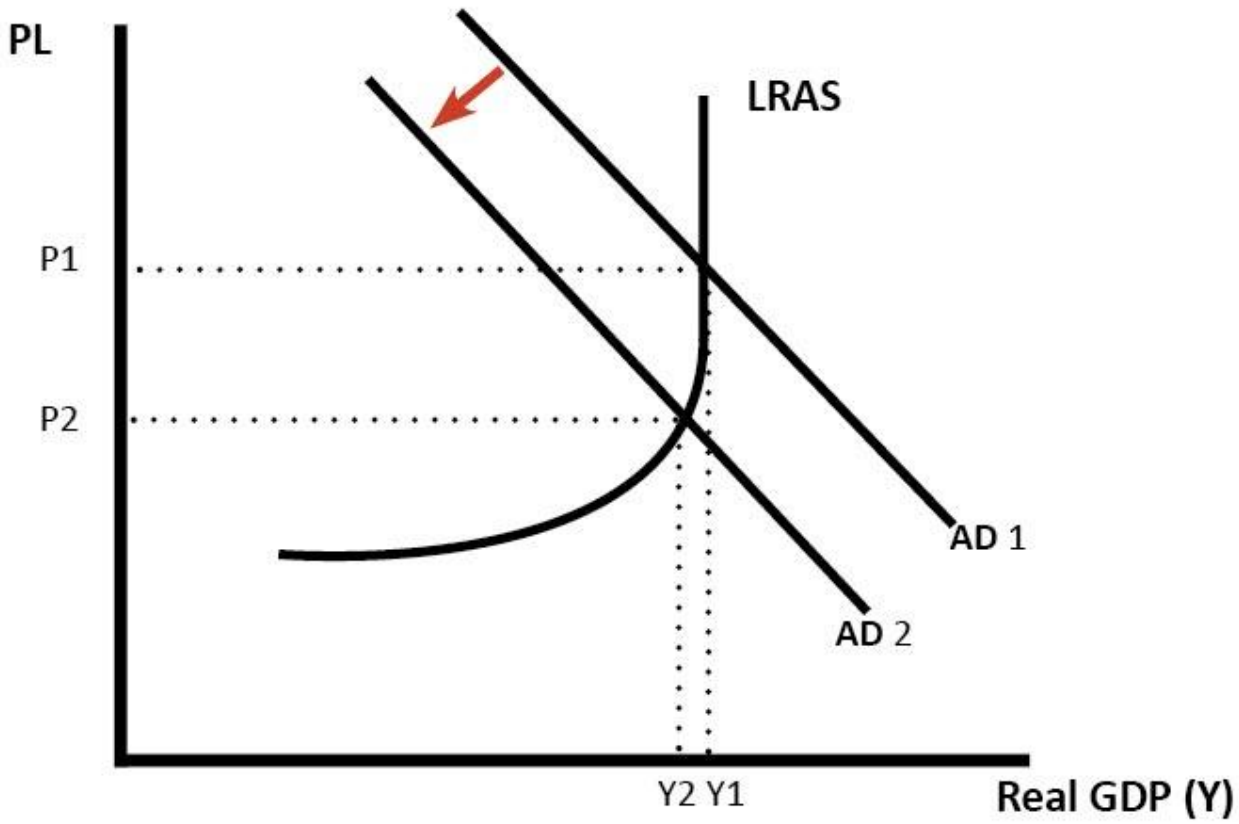
A higher interest rate should also lead to a higher exchange rate, which helps to reduce inflationary pressure by:

- Making imports cheaper. (lower price of imported goods)
- Reducing demand for exports.
- Increasing incentive for exporters to cut costs.

Fiscal Policy

The government can increase taxes (such as income tax and VAT) and cut spending. This improves the government's budget situation and helps to reduce demand in the economy.

Both these policies reduce inflation by reducing the growth of aggregate demand. If economic growth is rapid, reducing the growth of AD can reduce inflationary pressures without causing a recession.



If a country had high inflation and negative growth, then reducing aggregate demand would be more unpalatable as reducing inflation would lead to lower output and higher unemployment. They could still reduce inflation, but, it would be much more damaging to the economy.

Other Policies to Reduce Inflation

Wage Control

If inflation is caused by wage inflation (e.g. powerful unions bargaining for higher real wages), then limiting wage growth can help to moderate inflation. Lower wage growth helps to reduce cost-push inflation and helps to moderate demand-pull inflation.

However, as the UK discovered in the 1970s, it can be difficult to control inflation through incomes policies, especially if the unions are powerful.

Monetarism

Monetarism seeks to control inflation by controlling the money supply. Monetarists believe there is a strong link between the money supply and inflation. If you can control the growth of the money supply, then you should be able to bring inflation under control. Monetarists would stress policies such as:

Higher interest rates (tightening monetary policy)

Reducing budget deficit (deflationary fiscal policy)

Control of money being created by the government

However, in practice, the link between money supply and inflation is less strong.

Supply Side Policies

Often inflation is caused by persistent uncompetitiveness and rising costs. Supply-side policies may enable the economy to become more competitive and help to moderate inflationary pressures. For example, more flexible labour markets may help reduce inflationary pressure.

However, supply-side policies can take a long time, and cannot deal with inflation caused by rising demand.

Ways to Reduce Hyperinflation – change currency

In a period of hyperinflation, conventional policies may be unsuitable. Expectations of future inflation may be hard to change. When people have lost confidence in a currency, it may be necessary to introduce a new currency or use another like the dollar (e.g. Zimbabwe hyperinflation).

Ways to reduce Cost-Push Inflation

Cost-push inflation (e.g. rising oil prices can lead to inflation and lower growth. This is the worst of both worlds and is more difficult to control without leading to lower growth.

5.Explain the methods of measuring national income

Introduction:

National income is an uncertain term which is used interchangeably with national dividend, national output and national expenditure. On this basis, national income has been defined in a number of ways. In common parlance, national income means the total value of goods and services produced annually in a country.

In other words, the total amount of income accruing to a country from economic activities in a year's time is known as national income. It includes payments made to all resources in the form of wages, interest, rent and profits.

Methods of Measuring National Income:

There are four methods of measuring national income. Which method is to be used depends on the availability of data in a country and the purpose in hand.

(1) Product Method:

According to this method, the total value of final goods and services produced in a country during a year is calculated at market prices. To find out the GNP, the data of all productive activities, such as agricultural products, wood received from forests, minerals received from mines, commodities produced by industries, the contributions to production made by transport, communications, insurance companies, lawyers, doctors, teachers, etc. are collected and assessed at market prices. Only the final goods and services are included and the intermediary goods and services are left out.

(2) Income Method:

According to this method, the net income payments received by all citizens of a country in a particular year are added up, i.e., net incomes that accrue to all factors of production by way of net rents, net wages, net interest and net profits are all added together but incomes received in the form of transfer payments are not included in it. The data pertaining to income are obtained from different sources, for instance, from income tax department in respect of high income groups and in case of workers from their wage bills.

(3) Expenditure Method:

According to this method, the total expenditure incurred by the society in a particular year is added together and includes personal consumption expenditure, net domestic investment, government expenditure on goods and services, and net foreign investment. This concept is based on the assumption that national income equals national expenditure.

(4) Value Added Method:

Another method of measuring national income is the value added by industries. The difference between the value of material outputs and inputs at each stage of production is the value added. If all such differences are added up for all industries in the economy, we arrive at the gross domestic product.

6.Explain the function of commercial bank

A commercial bank is a kind of financial institution which carries all the operations related to deposit and withdrawal of money for the general public, providing loans for investment, etc. These banks are profit-making institutions and do business only to make a profit.

The two primary characteristics of a commercial bank are lending and borrowing. The bank receives the deposits and gives money to various projects to earn interest (profit). The rate of interest that a bank offers to the depositors are known as the borrowing rate, while the rate at which banks lends the money is called the lending rate.

Function of Commercial Bank:

The functions of commercial banks are classified into two main division.

(a) Primary functions –

- **Accepts deposit –** The bank takes deposits in the form of saving, current, and fixed deposits. The surplus balances collected from the firm and individuals are lent to the temporary required of commercial transactions.
- **Provides Loan and Advances –** Another critical function of this bank is to offer loans and advances to the entrepreneurs and businesspeople and collect interest. For every bank, it is the primary source of making profits. In this process, a bank retains a small number of deposits as a reserve and offers (lends) the remaining amount to the borrowers in demand loans, overdraft, cash credit, and short-run loans etc.
- **Credit Cash-** When a customer is provided with credit or loan, they are not provided with liquid cash. First, a bank account is opened for the customer and then the money is transferred to the account. This process allows a bank to create money.

(b) Secondary functions –

- **Discounting bills of exchange –** It is a written agreement acknowledging the amount of money to be paid against the goods purchased at a given point of time in future. The amount can also be cleared before the quoted time through a discounting method of a commercial bank.
- **Overdraft Facility –** It is an advance given to a customer by keeping the current account to overdraw up to the given limit.
- **Purchasing and Selling of the Securities –** The bank offers you with the facility of selling and buying the securities.

- **Locker Facilities –** Bank provides lockers facility to the customers to keep their valuable belonging or documents safely. Banks charge a minimum of an annual fee for this service.
- **Paying and Gather the Credit –** It uses different instruments like a promissory note, cheques, and bill of exchange.

7.Explain the function of Central or Reserve bank of India

1. Issue of Bank Notes:

The Reserve Bank of India has the sole right to issue currency notes except one rupee notes which are issued by the Ministry of Finance. Currency notes issued by the Reserve Bank are declared unlimited legal tender throughout the country.


RESERVE BA

Image Courtesy : upload.wikimedia.org/wikipedia/commons/0/00/Reserve_bank_of_India_Headquarters.jpg

This concentration of notes issue function with the Reserve Bank has a number of advantages: (i) it brings uniformity in notes issue; (ii) it makes possible effective state supervision; (iii) it is easier to control and regulate credit in accordance with the requirements in the economy; and (iv) it keeps faith of the public in the paper currency.

2. Banker to Government:

As banker to the government the Reserve Bank manages the banking needs of the government. It has to-maintain and operate the government's deposit accounts. It collects receipts of funds and makes payments on behalf of the government. It represents the Government of India as the member of the IMF and the World Bank.

3. Custodian of Cash Reserves of Commercial Banks:

The commercial banks hold deposits in the Reserve Bank and the latter has the custody of the cash reserves of the commercial banks.

4. Custodian of Country's Foreign Currency Reserves:

The Reserve Bank has the custody of the country's reserves of international currency, and this enables the Reserve Bank to deal with crisis connected with adverse balance of payments position.

5. Lender of Last Resort:

The commercial banks approach the Reserve Bank in times of emergency to tide over financial difficulties, and the Reserve bank comes to their rescue though it might charge a higher rate of interest.

6. Central Clearance and Accounts Settlement:
Since commercial banks have their surplus cash reserves deposited in the Reserve Bank, it is easier to deal with each other and settle the claim of each on the other through book keeping entries in the books of the Reserve Bank. The clearing of accounts has now become an essential function of the Reserve Bank

7. Controller of Credit:
Since credit money forms the most important part of supply of money, and since the supply of money has important implications for economic stability, the importance of control of credit becomes obvious. Credit is controlled by the Reserve Bank in accordance with the economic priorities of the government.