RICE AND OUTPUT DETERMINATION UNDER MONOPOLY

We analyze this type of market before the determination of price and output under monopoly.

ONOPOLY

There is a market structure where there is a single firm to produce a particular commodity and there is no close substitute of that commodity in the market that is offered for sale to the buyers.

SSUMPTIONS

Assumptions or characteristics or conditions of monopoly are as below:

Sole supplier

In this structure of market there is only a single seller and there is no rival firm in the market. A firm represents the entire industry of a particular commodity.

No close substitute

There is no close substitute of the commodity, which is produced by a monopolist firm.

No free entry

There are barriers to enter in the market due to some strategic conditions.

) Ownership of raw materials used in the production of a commodity.
) Exclusive knowledge of production techniques.
) Patent rights for a product or production process.
) Govt. has issued license to a particular firm
) The imposition of foreign trade barriers to exclude foreign competitors.
) The existing firm adopts a limit pricing policy.
) Heavy advertising is a marketing tact to prevent other firms.

Homogeneity

The product of the monopolist firm may or may not be a homogeneous product.

Lack of knowledge of buyers

Due to lack of knowledge of buyers from the market conditions, a monopolist can charge different prices of his product in different areas of market. It is called price discrimination policy of the monopolist.

Negative slope of demand curve

There is a single firm in the industry; the firm's demand curve is the industry's demand curve. The demand curve is negative slope due to the firm must lower its price if it is to sell an additional unit of its product. The buyers are free to purchase the commodity or forgo it.

FIRM'S EQUILIBRIUM UNDER MONOPOLY

CONDITIONS OF EQUILIBRIUM

A monopolist firm is in equilibrium when the following two conditions are fulfilled:

1. **Necessary condition**
   At the equilibrium level of output, the marginal cost is equal to the marginal revenue i.e. MC = MR
2. **Sufficient condition**
   At the equilibrium level of output, marginal cost curve cuts the marginal revenue curve from below or at the equilibrium point of output, slope of MC > slope of MR.

The equilibrium firm is analyzed in two ways regarding the time period i.e. short run and long run.

A: Short-run equilibrium

There are various possible situations of a firm equilibrium relating to its profits and losses in short run.

i) Abnormal profit.

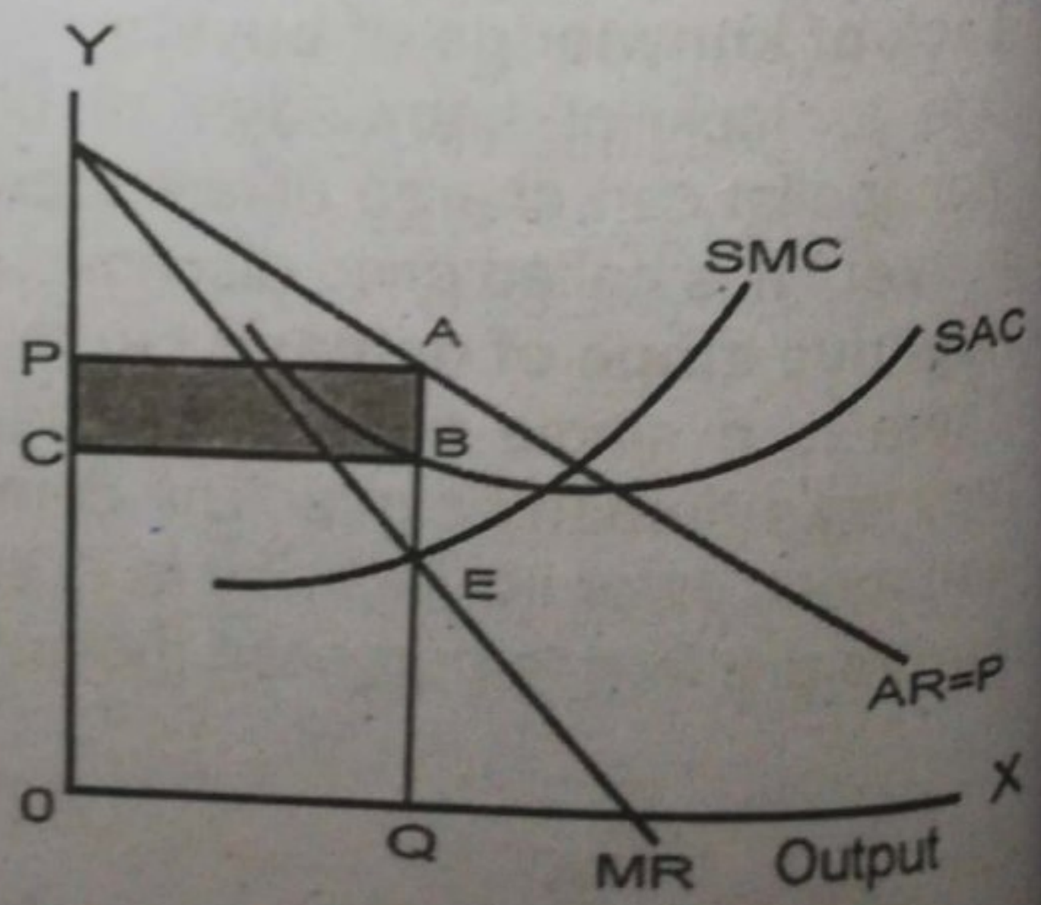
The reward of entrepreneur (profit) is included in SAC but except the normal profit, the abnormal profit is shown in the shaded area as in the following diagram. The output (Q) is measured on X-axis, while price, cost and revenue are measured on Y- axis. The AR curve is the demand curve of the firm having negative slope. A monopolist firm is in equilibrium at point E where both conditions for equilibrium are fulfilled as shown in the diagram. The MC curve cuts MR curve at point E from below. Thus the equilibrium output 0Q is sold at equilibrium price 0P. A monopolist will sell the cutput by the intersection of MC and MR at the corresponding price OP. A monopolist cannot decide independently both the quantity and price at which he wants to sell it. SAC curve cuts the productivity perpendicular AB at point B. Therefore,

$\pi = TR - TC$

$TR = P \times Q$
$= OP \times OQ$
$= OQAP$

$TC = AC \times Q$
$= BQ \times OQ$
$= OQBC$

$\pi = OQAP - OQBC$
$= ABCP$

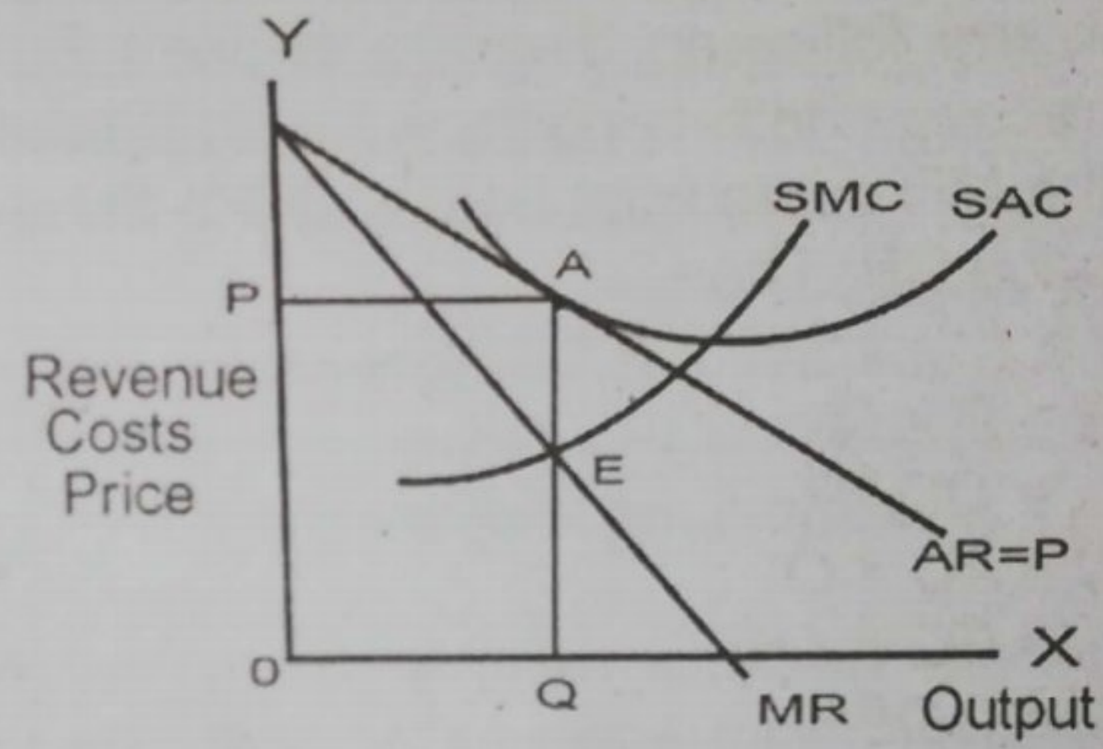


The monopolist obtains excess profit equal to the shaded area (ABCP) which is abnormal profit of the monopolist.

ii. Normal profit

A monopolistic firm does not earn always abnormal profits in short-run. The firm is in equilibrium at point E where MC is equal to MR. A firm may operate at normal profit, which is explained with the help of diagram. A perpendicular is drawn at equilibrium point E. Therefore OQ output is sold at OP price. The demand curve or AR curve is tangent to SAC curve at point A. The geometrical explanation of the normal profit is shown below from the diagram.

$TR = P \times Q$
$= OP \times OQ$
$= OQAP$
$TC = AC \times Q$
$= AQ \times OQ$
$= OQAP$
$\pi = TR - TC$
$= OQAP - OQAP$
$= 0$

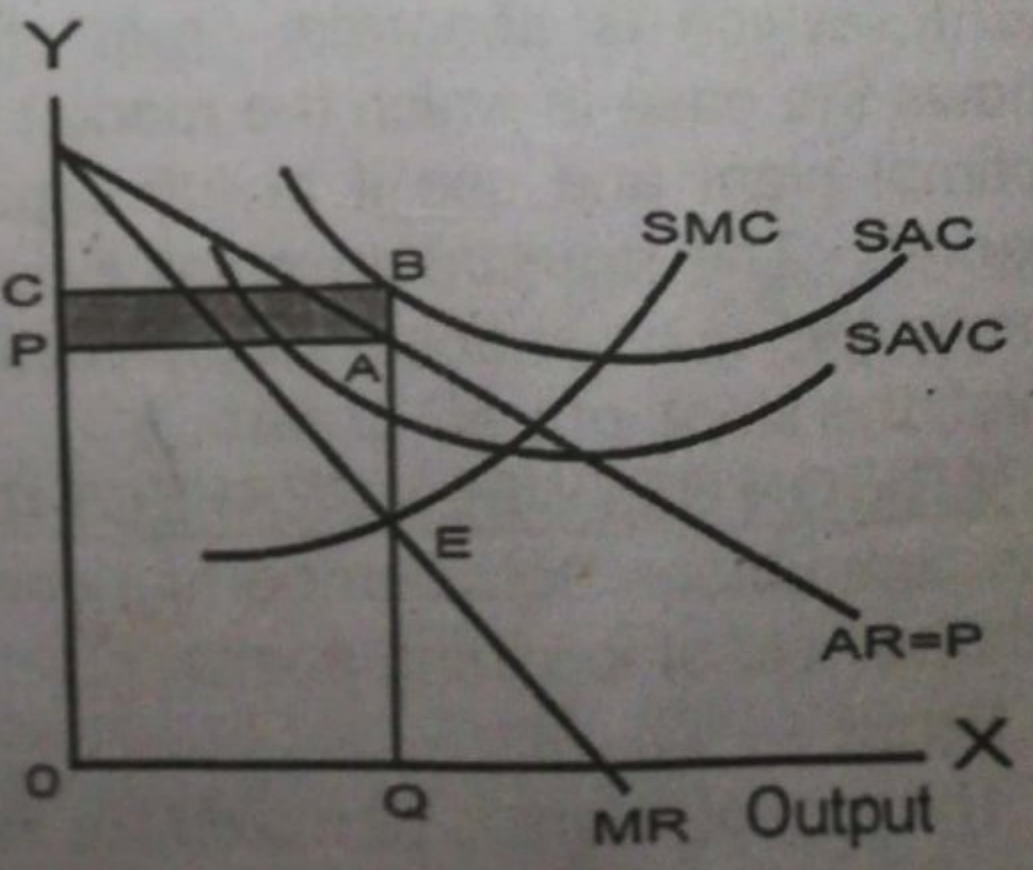


Therefore, the abnormal profit is nil which is not shown as shaded area in the above diagram but normal profit is included in SAC.

iii. Equilibrium with losses.

A monopolist firm also accepts losses in the short-run but covering its variable costs as shown in the diagram. The equilibrium point is E where MR is equal to MC. At equilibrium point a perpendicular is drawn on X-axis. Therefore, OQ quantity is sold at OP price and SAC is above point A but SAVC curve is below point A. Therefore,

$TR = P \times Q$
$= OP \times OQ$
$= OQAP$
$TC = AC \times Q$
$= BQ \times OQ$
$= OQBC$
$\pi = TR - TC$
$= OQAP - OQBC$
$= -(ABCP)$



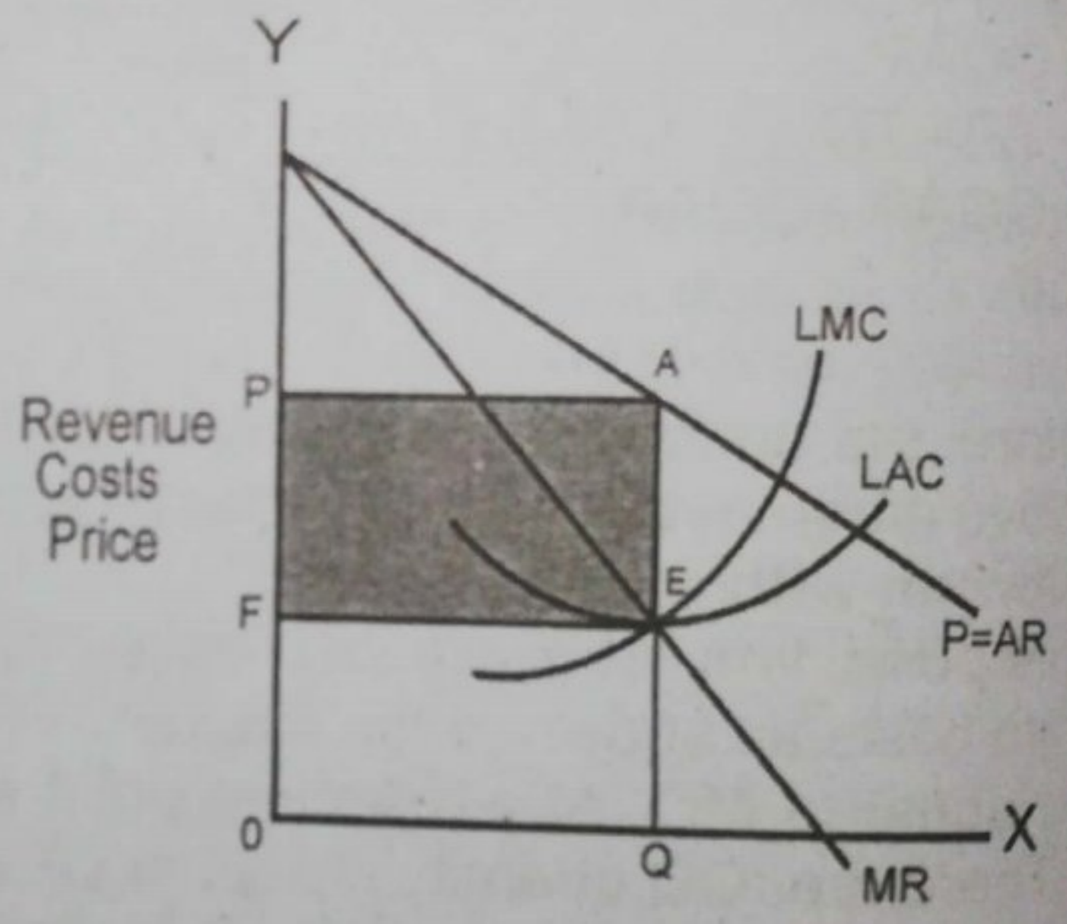
The minus sign of profit shows the loss of a firm equal to shaded area ABCP If the loss continues, and the firm can not cover its average variable cost then the firm shall have to close-down.

B: Long - Run Equilibrium

The long - run is a period in which monopolist has the time to expand his plant, or to use the existing capacity of his plant at the level which will maximize his profit. It is not necessary for the monopolist to reach an optimal scale or remain at sub-optimal scale or surpass the optimal scale it depends entirely on the market demand but he will mostly continue to earn abnormal profits even in the long-run.

In the following diagram at point E, a monopolist firm is in equilibrium because both conditions for equilibrium are fulfilled. The LMC curve cuts the MR curve from below. OQ is the equilibrium quantity at corresponding price OP. Then

$TR = P \times Q$
$= OQAP$
$TC = AC \times Q$
$= EQ \times OQ$
$= OQEF$
$\pi = TR - TC$
$= OQAP - OQEF$
$= AEFP$



Thus the monopolist firm obtains excess profit equal to the shaded area AEFP, which is abnormal profit of the monopolist. The above figure shows the case in which the market size is just large enough to build the optimal plant and use it at full capacity; it depends on the size of the market. The equilibrium point E is the minimum point of LAC, which shows the optimal scale of production of a monopolist because at this point, the slope of LAC is zero.

COMPARISON BETWEEN PERFECT COMPETITION AND MONOPOLY

The comparison between perfect competition and monopoly is explained with the help of following points.

1. Profit

The aim of a firm is to maximize its profit in both the market structures