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PRICE AND OUTPUT DETERMINATION/ EQUILIBRIUM UNDER MONOPOLY

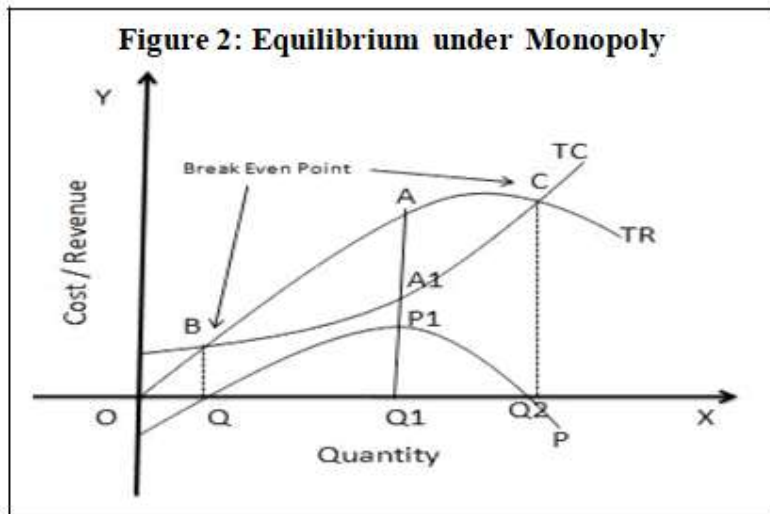
Price and output determination under monopoly can be studied through two approaches:



1.Total Revenue and Total Cost Approach: A firm will produce that level of output which provides it maximum profit or if it working under losses, it will produce upto that level of output where losses are minimum.

Maximum Profit = Total Revenue – Total Cost ——— Maximum

Minimum Losses = Total Cost – Total Revenue ——— Minimum and firm covers average variable costs.



In the diagram 2, TR is total revenue curve and TC is total Cost Curves, OP is profit curve. Initially TC is greater than TR so firm has losses and at the B point TR is equal to TC this is breakeven point when firm has no profit and no loss. Firm will increase its production upto the Q1 quantity as here difference between TR and TC is maximum and profit are maximum i.e. P1Q1. If firm increase its output more than Q1 profit will start falling and again at point C TR and TC are equal. So firm's equilibrium will be at OQ1 level of output.

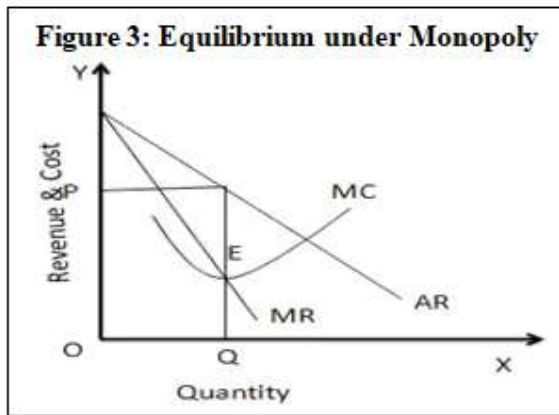
2. Marginal Revenue and Marginal Cost

Under monopoly AR is downward sloping indicating a firm can sell more by reducing output and MR is below it. Monopolist will produce upto the point:

Marginal revenue is equal to marginal cost ($MR=MC$)

Marginal cost curve cut marginal revenue curve from below (MC cut MR from below)

These are the two conditions of Equilibrium of monopolist.

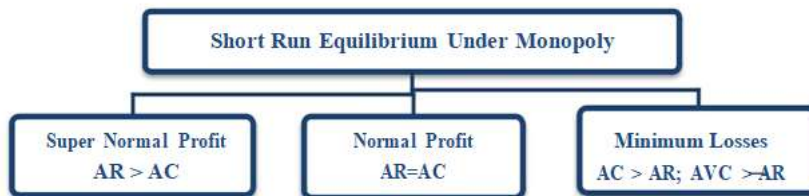


In figure 3 condition of equilibrium is shown. Both conditions are fulfilled at point E, so a monopolist will produce upto OQ level of output and charge OP prices. Before it $MC > MR$ so monopolist will increase its production. After OQ level of output $MR < MC$ so firm will reduce its output.

Equilibrium can be explained in short run and long run.

1. Short Run Equilibrium of Firm

Short run is the time period in which there are fixed and variable factors of production. Monopoly can increase its output by increasing variable factors only upto existing production capacity. In short run a monopoly can face three situations depending upon cost conditions



1. **Super Normal Profit:** Monopolist will get super normal profit when at the equilibrium output, average revenue is greater than average cost. In other words, prices are higher than per unit cost.

$$AR > AC$$

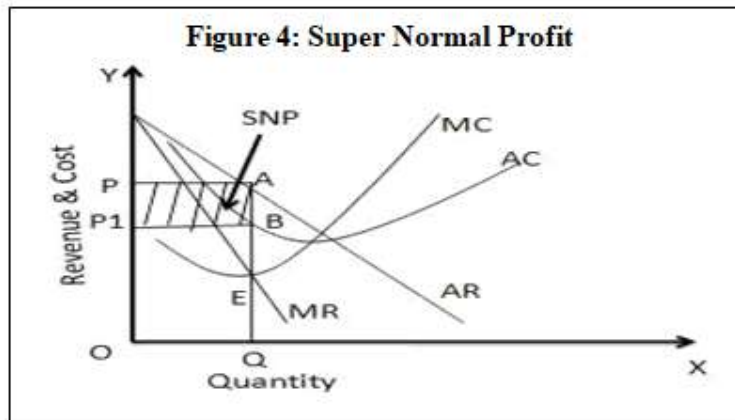


Figure 4 shows the Super Normal profit. Condition of equilibrium that MC equal MR and MC cut MR from below is fulfilled at point E. Monopolist will produce OQ level of output. OP price will be charged. At this price average cost is BQ = OP1. Here monopolist is getting super normal profit as average cost is less than average revenue i.e. AB.

$$\text{Total Revenue} = OP \times OQ = OPAQ$$

$$\text{Total Cost} = OP1 \times OQ = OP1BQ$$

$$\text{Super Normal Profit} = PP1BA$$

1. **Normal Profit:** Monopolist can get normal profit also. It is the situation when average revenue is equal to average cost at the equilibrium level of output

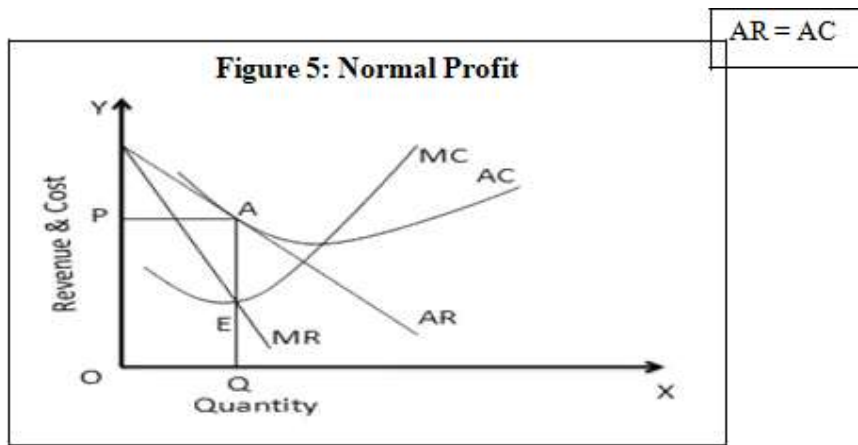


Figure 5 shows normal profits. Equilibrium is at point E. Monopolist will produce OQ level of output and charge OP price.. At this level of output Average revenue is equal to average cost i.e. $AQ = OP$.

Total Revenue = Total Cost = $OP \times OQ = OPAQ$. Monopolist is getting normal profit.

- **Minimum Losses:** Monopolists can incur minimum losses. It is the situation when average cost is greater than average revenue but a firm covers its average variable cost.