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**Paper:**

**Managerial Economic**

**Department:**

**MBA (3.5) Weekend**

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Monopoly equilibrium in firm

Monopoly equilibrium:

A monopolist is in equilibrium when he produces that amount of output which yields him maximizing total profit price and equilibrium output under monopoly are explained using two different approaches:

Total revenue and total cost curve approach.

Marginal revenue and marginal cost approach.

Total revenue and total cost curve approach: Monopolist can earn maximum profit by selling that amount of output at which difference between total revenue and total cost is maximum. By fixing different prices or by changing the supply of the product, a monopolist tries to find out the level of output at which the difference between total revenue and total cost is maximum, that is, total profit is maximum.

That amount of output at which a monopolist earns maximum profit will constitute his equilibrium situation. It is explained will the help of figure 1. In this figure, TC is total cost curve and TR, is the Total Revenue Curve. TR curve begins from point of origin 0, meaning there by that at zero output, total revenue too will be zero. But total cost (TC) curve begins from P meaning thereby that even if the firm discontinues its production, still it will have to bear fixed cost shown by OP, total profit is represented by TP curve.

It begins from point R, signifying that initially firm is faced with negative profits or losses. Fig.1 shows that as the firm increases its production, total revenue is also increasing. However, in the beginning total revenue is less than total cost. Thus, RC portion of TP curve indicates that the firm is incurring losses. At point M, total revenue is equal to total cost (TR = TC) meaning there by that firm is in no -profit and no loss situation as is also indicated by point C of TP curve point M is called break-even point. When firm produces more output than indicated by point M then its total revenue will be exceeding its total cost (TR > TC). TP curve also slopes upwards, from point C onwards.

It indicates that firm is earning profit when TP curse reaches is highest point E, then the firm \*ill be earning maximum profits. This amount of output (OQ) will be called equilibrium output.

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In fig. 1 TC starts from y-axis. Accordingly it must be a short period cost curve long period TC starts from the origin ‘O’.

If the firm produces more than the equilibrium output then the difference between TR and TC curves will narrow Down and at point N both these curves intersect each other implying that total revenue will become equal to total cost. It means that the total profits of the firm will go on diminishing and at the said point the firm will be in no-profit and no loss situation, as is indicated by point D on TP curve. If the firm produces more than this, then TR will be less than TC and the firm incur losses. In short, the firm will earns maximum profit at point E. In order to know the maximum profit of the firm, tangents are drawn on TR and TC curves.

The points at which tangents are parallel their distance is maximum. In the fig. 1, tangents are parallel at points A and B which also indicate maximum distance between TR and TC. In this situation, the firm will earns maximum profit as is clear from point E on TP curve. This approach of finding monopoly price and equilibrium output is known as trial and error method, because in this method, the monopolist by fixing different prices, calculates as to which particular price will yield him maximum profit and equilibrium position.

Marginal Revenue and Marginal Cost Approach: According to this analysis, a monopolist will be in equilibrium when two condition are fulfilled, i.e.,

MC = MR and

MC curve cuts MR curve from below.

The situation of equilibrium may be studied with reference to, (i) short-run and (ii) long-run.

Short-run Equilibrium : Short -run refers to that period in which time is so short that a monopolist cannot change fixed factors, like machinery, plant etc. Monopolist can increase his output in response to increase in demand by changing his variable factors. No doubt fixed factors will also be utilized to their maximum capacity to increase the output similarly, when demand decreases, the monopolist will reduce his output by reducing variable factors and by showing down the use of fixed factors.

A monopolist will be in equilibrium when he produces that amount of output at which (i) marginal cost is equal to marginal revenue and (ii) marginal cost curve cuts marginal revenue curve from below. A monopolist in equilibrium may face three situations in the short period viz (1) super normal profit (2) normal profit and (3) minimum loss. These are described with the help of the following diagrams :

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Super Normal Profit : If the price (AR) fixed by the monopolist in equilibrium is more than his average cost (AC) then he will get super normal profits. The Monopolist will produce up to the extent where MC = MR and MC curve cuts MR curve from below. This limit will indicate equilibrium output If the price of equilibrium output is more than average cost (AR > AC) then the monopolist will earn super normal profits. This is shown in fig 2.

In this figure, the monopolist is in equilibrium at point E because at this point marginal cost is equal to marginal revenue and MC curve is cutting MR curve from below. The monopolist will produce OM units of output and sell it at MB price which is more than average cost AM by BA per unit (BM — AM = BA). Thus, in this situation the total super normal profit of the monopolist will be ABPC.

Normal Profit : If in the short run equilibrium (MC = MR), the monopolist price (AR) is equal to its average cost (AC) i.e., AR = AC, then he

will earn only normal profit. This is shown in fig. 3.

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In this figure the firm is in equilibrium at point E where MC = MR and MC curve is cutting MR curve from below. OM is the equilibrium output. At this output, average cost (AC) curve touches average revenue (AR) curve at point A. Thus, at point A price of (AR) is equal to the average cost (AM) of the product. Monopoly firm, therefore, earns only normal profits in equilibrium situation, as at equilibrium output its AC = AR.

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Minimum Loss : In the short run, the monopolist may incur loss also. If in the short -run price falls due to depression or fall in demand, the monopolist may continue his production as long as the low price covers his average variable cost (AVC). In case the monopolist is obliged to fix a price which is less than average variable cost, then he will, prefer to stop production OR shut down. Accordingly a monopolist in equilibrium, in the short period, may bear minimum loss equivalent to fixed costs. In this situation, equilibrium price (AR) is equal to average variable cost (AVC) and the monopolist bears the loss of fixed costs. The monopolist will have to bear this loss even if he chooses to discontinue production in the short period. Thus minimum loss = AR — AVC = AFC. This situation of equilibrium is shown in fig. 4.

According to this figure, the monopolist is in equilibrium at point E where MC = MR and MC curve cuts MR curve from below. He produces OM output. The price of equilibrium output OM is fixed at OP (AM). At this price, average variable cost (AVC) curve touches AR curve at point A. It means that the firm will cover only average variable cost from the prevailing price. The firm will bear the loss of fixed costs or AN per unit. The form will bear total loss equivalent to NAPP1 as shown by the shaded area. It will constitute minimum loss to the firm. If the monopolists is obliged to fix a price lower than OP he would prefer to discontinue production.

Long run equilibrium : In the long run, the monopolist will be in equilibrium at a point where his long run marginal cost is equal to marginal revenue (LMC = MR). In the long run, all costs are variable costs and supply can be fully adjusted to changes in demand. In the short run, equilibrium price can be more than, equal to or less than the average cost but in long run, price (AR) is generally. More than the long run average cost. If the price is less than long run average cost, the monopolist would like to close down the unit rather than suffer the loss.

In the long run, a monopolist generally earns super normal profit. It is due to the fact that unlike perfect competition no firm can enter, into the market. Thus even when a monopolist earns super normal profit in the long run, no other producer can enter the market in the hope of sharing whatever super normal profit potential exists. Therefore, super normal profits are not elominated even in the long run.

Unlike a perfectly competitive firm, a monopolist can earns super normal profits even in the long run. This is because of barriers to the entry of new firms in the market. Lack of entry into the industry as well as lack of substitutes in the market means that the monopolist does not have to have optimum size plant in the long run or has to use it at optimum capacity. The size of his plant and the degree of utilization of any given plant size depends entirely on the market demand. Under some market conditions, optimum capacity will be reached.

Under others, the monopolist may produce sub -optimally and certain conditions may lead even to over utilization. It will all depend on the market demand. In fig. 5 the long run equilibrium of the monopolist is explained, when the market size does not permit the monopolist to expand to the minimum size of LAC which is the usual case.

point E indicates the equilibrium of the monopolist. At point E, MR = LMC and LMC curve cuts MR curve from below, hence OM is the equilibrium output and ON (= AM) is the equilibrium price. BM is the long run average cost price (Average revenue) AM being more than long run average cost BM (AR > LAC), the monopolist will get super normal profits. Accordingly, the monopolist earns AM – BM = AB super normal profit per unit. His total super normal profit will be ABPN as shown by the shaded area.