

Price and Output Determination under Monopolistic Competition

Meaning

Monopolistic competition refers to a market situation where many firms are 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 noticeable 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 many firms selling closely related but not identical products.

Products are close substitutes with a high cross-elasticity and not perfect substitutes. Tata, Lipton, etc. tea; Dove, Lux, etc. soap; Pepsi, Coca Cola, etc. cold drinks are examples of product differentiation. Under monopolistic competition, no single firm controls more than a small portion of the total output of a product.

As the products are close substitutes, a reduction in the price of a product 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 price at which he can sell any amount.

It means that it has some control over price due to product differentiation and there are price differentials between firms. Despite this, the slope of the demand curve is determined by the general level of the market price for the differentiated product.

Concept of Industry and Group

Group equilibrium relates to the equilibrium of the “industry under a monopolistic competitive market. The word “industry” refers to all the firms producing a homogeneous product. But under monopolistic competition the product is differentiated. Therefore, there is no “industry” but only a “group” of firms producing a similar product.

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. So, in defining an industry, Chamberlin lumps together firms in such product groups as cars, cigarettes, breweries, etc. In the product group, the demand for each product has high cross elasticity so that when the price of other products in the group changes, it shifts the demand curve.

Assumptions

The price and output determination under monopolistic competition is based on the following assumptions.

- Product Differentiation
- Many Sellers
- Free Entry and Exit
- Advertisement is Important or Selling Cost

- There is the heroic assumption that both demand and cost curves for all the products are uniform throughout the group. This is the uniformity assumption.
- Profit Maximization is the Ultimate Goal of the Firm

The firm's job under monopolistic competition performs three different jobs or decisions.

1. To Determine Level of Output

The firm determines its output at a point where it reaches equilibrium by satisfying the following two conditions for profit maximization.

$$MR=MC$$

The slope of $MC >$ Slope of MR

2. To Determine Price

By enjoying the absolute right to produce and sell differentiated products, the firm determines the price of its product based on the law of demand. It implies that the firm decides to sell large quantities at a low price and small quantities at a high price. There is an inverse association between output and price. Hence, the firm has a negative sloping demand curve or AR curve. However, the minimum price acceptable by the firm in the short run will be equal to its average variable cost.

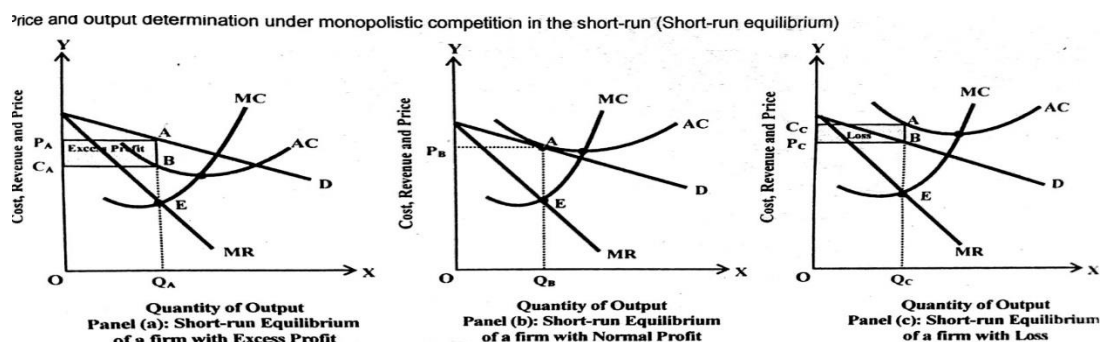
3. To Formulate Sales Strategies

Because of imperfect knowledge about the market and the existence of many rival firms producing differentiated products with close substitutes, the firm has no formulated sales strategies to participate in non-price competition. In general, there are two types of sales strategies as informative and promotional.

Price and Output Determination Under Monopolistic Competition in the Short-run/Short-run Equilibrium

In the short run, the firm does not have sufficient time to change its scale of plant and no new firms will enter the product group. The short-run equilibrium does not mean that all firms charge the same price. Each firm seeks its profit-maximizing position. It is not necessary that under monopolistic competition all the firms will attain economic profits in the short run. Whether the firm earns excess profit, normal profits, or incurs loss depends on its cost and revenue conditions; the threat from the uncertainty created by rival firms or the market environment, and government regulatory measures. Thus, the level of profit of each monopolist firm depends on their efficiency and response of consumers to their product (i.e. demand).

The possible causes in the short run are explained with the help of the following diagram.



In the above diagram, the equilibrium of the representative firm is denoted by point E, where $MC=MR$ and MC curve cuts MR curve from below. Three possible cases are briefly explained here.

Case of Excess Profit

Panel (a) of the above figure shows that at equilibrium a firm is earning excess profit by producing OQ_A units at per unit cost OC_A and selling it at OP_A price. Since price is greater than average cost, the firm earns excess profit equal to ABC_AP_A .

Case of Normal Profit

Panel (b) of the above figure shows that at equilibrium a firm is earning just normal profit. It produces OQ_B outputs at per unit cost OP_B and selling them at OP_B . Since price is equal to average cost, the firm only earns a normal profit.

Case of Loss

Panel (c) of the above figure shows that at equilibrium the firm is incurring a loss. It produces OQ_C units of output at per unit cost OC_C and selling at OP_C price. Since price is less than average cost, the firm faces loss equal to $ABP_C C_C$.

Price and Output Determination Under Monopolistic Competition in the Long-run/Long-run Equilibrium

In the long run, the producer has sufficient time to alter units or capacity of all inputs required to adjust market supply according to change in market demand. Therefore, the firm can change its scale of the plant to any extent. It always tries to build the scale of the plant to make the per-unit cost minimum.

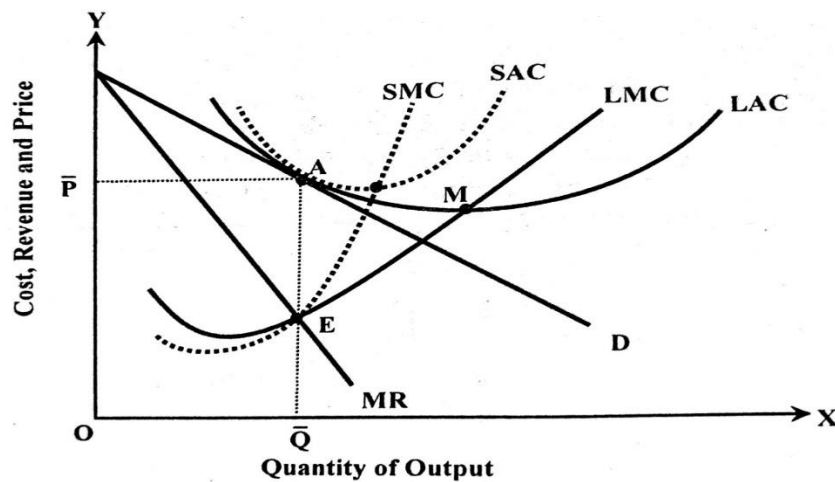
The group of firms producing differentiated but closely substitutable products is known as the product group. In this market, there is free entry and exit into and from the product group. So, if the existing firms in the production group are earning excess profit in the short-run, other new firms will enter the production group in the long-run.

As new firms enter the production group, the price of the product falls due to the increase in supply. The average cost of production also increases due to an increase in the price of the factor of production. The cause of the increase in prices of factors is the increased demand for factor inputs due to the increase in the number of firms. The fall in the price of the product and increase in the average cost of production reduces profit margin. As a result, excess profit disappears. Similarly, if existing firms are bearing losses in the short-run, they will leave the production group in the long-run. The exit of the firms from the production group will increase the price of the product as well as decrease the average cost of production. Thus, existing firms will earn just a normal profit in the long run.

The long-run equilibrium of the firm requires the completion of the following conditions.

- $MR=LMC$
- LMC curve must intersect MR curve from below

The equilibrium of the monopolistic competitive firm, in the long run, can be explained with help of the following graph.



The long-run equilibrium point of the firm is denoted by point E where $MR=LMC=SMC$ and LMC curve and SMC curve are intersecting MC curve from below. The long-run equilibrium output and price are \overline{OQ} and \overline{OP} respectively. The LAC curve is tangent with the demand curve at point A, which shows that price P is equal to LAC. As price is equal to LAC, the firm earns normal profit only at the long-run equilibrium. From the figure, it is also cleared that the firm is operating at falling part of LAC implies that the firm is not using its full or optimal capacity. The firm under monopolistic competition operates below the optimal size, which is regarded as socially undesirable and AM is known as unused capacity.

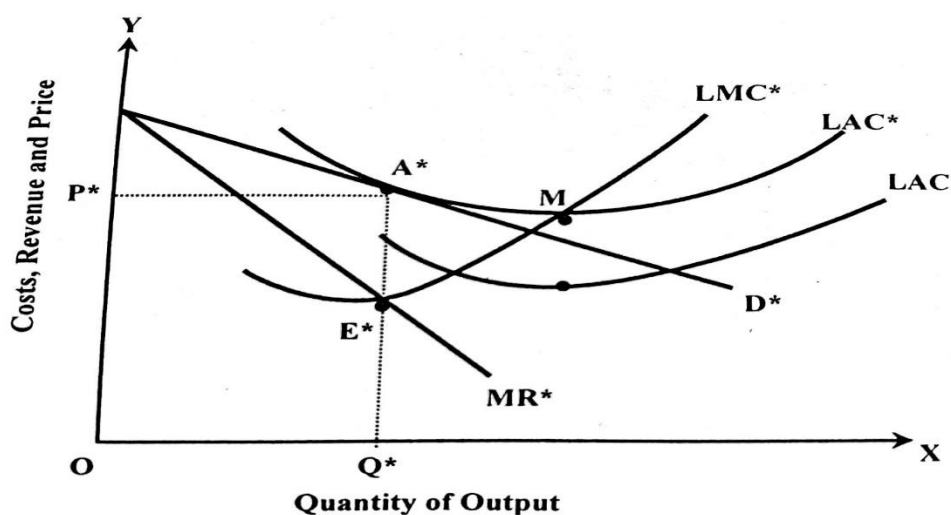
Equilibrium of the Firm Under Product Variation in Monopolistic Competition Market

A monopolistically competitive firm can spend more on non-price competition like product variation and selling expenses to increase the demand for its product. Non-price competition refers to the efforts on the part of a monopolistic competitive firm to increase its sales and profits through product variation and selling expenses instead of a cut in the price of its product. The monopolistic competitor can always change his product either by varying its physical attributes or by changing the promotional programs.

Product variation and selling expenses make the firm's demand curve less elastic and increase the costs of production. Consequently, the amount of profits that the firm can earn by producing the quantity of the product that equates its MR with MC will also be changed.

To achieve the goals of increase in its sales and profits, the firm may spend more on advertising and promotion rather than on changing the attributes of its product. Or it may change the attributes of its product in such a way as to make it more appealing to customers. Or, if resources permit, it may spend more on both advertising and the product variation.

A firm should spend more on product variation and selling effort if the MR from these efforts exceeds the LMC and until $MR=LMC$. A monopolistically competitive firm can increase profit in the short-run by spending more on product variation and selling efforts, but the firm will earn just normal profit in the long-run. The following figure shows the equilibrium of the firm under product variation and selling expenses in a monopolistic competition market.



In the above figure D^* and MR^* are demand and marginal revenue curves of the firm under product variation and selling expenses and represent a higher level of demand and marginal cost than without product variation. The LAC curve is the long-run average cost of the firm without product variation and selling expenses and LAC^* and LMC^* are curves resulting from product variation and selling expenses. Point E^* is the long-run equilibrium point of the firm under product variation where $MR^*=LMC^*$ and LMC^* intersects MR^* curve from below.

At the long-run equilibrium, the firm produces OQ^* units of output at a per-unit cost of A^*Q^* and sells at OP^* price. As the equilibrium price is equal to LAC ($OP^*=A^*Q^*$), the firm under product variation and selling expenses earns normal profit in the long run. The price OP^* and output OQ^* are higher than that of before product variation and selling expenses.

References and Suggested Readings

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