Managerial Economics

M.Com. IV Sem.
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Imperfect Competition – Monopoly

CONTENTS

Objectives

After studying this unit, you will be able to:

- State the features of monopoly competition
- Discuss the price and output decisions under monopoly Explain the concept of price
- discrimination

Introduction

Monopoly is exactly opposite to the perfect competition. We can define a Monopolist as a sole supplier to particular market. In fact, after going through this unit you will realise that monopoly is an extreme case and it is rarely found in practice. However, we may also understand the case of monopoly by analysing two different cases - one that is presented in textbooks which says that in a monopoly there is only one firm producing the good. And other, the real world case such as the operating system monopoly, that says that in monopoly there is one firm that provides the overwhelming majority of sales (say, for example Microsoft), and a handful of small companies that have little or no impact on the dominant firm. In this unit, we will stress more on the former case.

10.1 Features of Monopoly

Monopoly is said to exist when one firm is the sole producer or seller of a product which has no close substitutes. According to this definition, there must be a single producer or seller of a product. If there are many producers producing a product, either perfect competition or monopolistic competition will prevail depending upon whether the product is homogeneous or differentiated. On the other hand, when there are few producers, oligopoly is said to exist. A second condition which is essential for a firm to be called a monopolist is that no close substitutes for the product of that firm should be available.

From the above discussion it follows that for monopoly to exist, following conditions are essential:

1. One and only one firm produces and sells a particular commodity or a service.
2. There are no rivals or direct competitors of the firm.
3. No other seller can enter the market for whatever reasons — legal, technical or economic.
4. Monopolist is a price maker. He tries to take the best of whatever demand and cost conditions exist without the fear of new firms entering to compete away his profits.

In the case of monopoly one firm constitutes the whole industry. Therefore the entire demand of the consumers for that product faces the monopolist; which slopes downward. Monopolist can lower the price by increasing his level of sales and output and he can raise the price by reducing his level of sales. Demand curve facing the monopolist will be his average revenue curve, which also slopes downward. Since average revenue curve slopes downward, marginal revenue curve will be below it.

Market Conditions

In perfect competition, there is a difference between the market demand curve and the demand curve for the output of an individual firm; when the firm acts as a price taker it views its demand curve as being horizontal with average revenue equal to marginal revenue. However, under monopoly, there is only one firm in the industry and so there is no difference between the demand curve for the industry and the firm. Since a normal demand curve is assumed, it is necessary for the monopolist to reduce price in order to increase the quantity sold. In other words, in order to increase sales the monopolist must reduce the price of all goods sold and therefore marginal revenue will always be less than average revenue under monopoly.

Table 10.1: Market Condition and Monopoly

Output Sales	Price (AR)	Total Revenue	Marginal Revenue
1	20	20	20
2	18	36	16
3	16	48	12
4	14	56	8

Notes

Sources of Monopoly

1. Legal Restrictions: Some public sector services are statutory monopolies, which means their position is protected by law.

   A monopoly position might also be protected by a patent which prevents other firms from producing an identical good during the life of the patent. However, similar products can often be produced and it is easy to exaggerate the protection afforded by patents.

2. Capital Costs: Certain businesses, such as international airlines and chemical companies, have relatively high set-up costs. In such cases the minimum efficient scale of production might be very high indeed and this creates a formidable barrier to entry.
3. Natural Factor Endowments: Sometimes firms, within a particular country, between them control a major proportion of the world output of a commodity: nitrates from Chile, coffee from Brazil and gold from South Africa are cases in point. A particular country has a monopoly in the supply of a particular commodity due to natural factor endowments and it is impossible to obtain supply of the commodity from any other source.
4. Tariffs and Quotas: It can happen that a firm has a dominant position in its home country, but faces competition internationally. A tariff raises the price of goods imported into the domestic economy and a quota restricts the volume that can be imported. They, therefore, protect domestic industry from international competition.

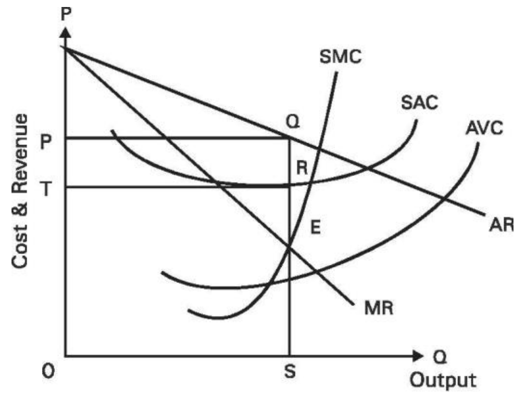
10.2 Price and Output Decisions

10.2.1 Short Run Equilibrium

In the short run the monopolist maximises his short run profits or minimises his short run losses if the following two conditions are satisfied:

1. MC = MR and
2. The slope of MC is greater than the slope of MR at the point of their intersection (i.e., MC cuts the MR curve from below).

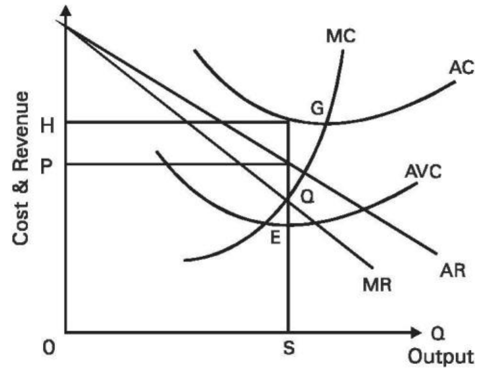
Figure 10.1



In the short run a monopolist has to work with a given existing plant. He can expand or contract output by varying the amount of variable factors but working with a given existing plant. Maximisation of profits in the short run requires the fixation of output at a level at which marginal cost with a given existing plant is equal to marginal revenue. In Figure 10.1, SAC and SMC are short run average and marginal cost curves. Monopolist is in equilibrium at E where marginal revenue is equal to marginal cost. Price set by him is SQ or OP. He is making profits equal to TRQP.

But in the short run he will continue working so long as price is above the average variable cost.
If the price falls below average variable cost the monopolist would shut down even in the short run. In case of losses, monopoly equilibrium is shown in Figure 10.2. The monopolist is in equilibrium at OS level of output with price OP. Since price (or AR) is smaller than average cost, he is making losses which are equal to area of the rectangle PQGH.

Figure 10.2



10.2.2 Long Run Equilibrium

In the long run, the monopolist has the time to expand his plant or to intensively use his existing plant which will maximise his profits. Since there will be no new entry, it is not necessary for the monopolist to reach an optimal scale. It means that monopolist will not stay in business if he makes losses in the long run. The size of his plant and the degree of utilisation of any given plant size depend entirely on market demand.

Caution He may reach the minimum point of LAC or remain at falling part of his LAC and expand beyond the minimum LAC depending on the market conditions. In Figure 10.3 we depict the case in which the market size does not permit the monopolist to expand to the minimum point of LAC. This is because to the left of the minimum point of the LAC the SRAC is tangent to the LAC at its falling part and also because the short run MC must be equal to the LRMC. This occurs at E, while the minimum LAC is at b and the optimal use of the existing plant is at a: since it is utilised at the level E, there is excess capacity.

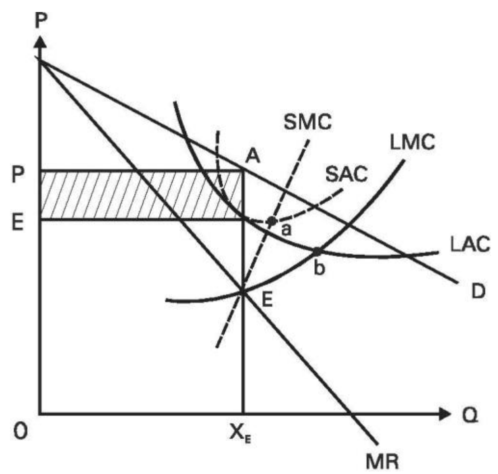
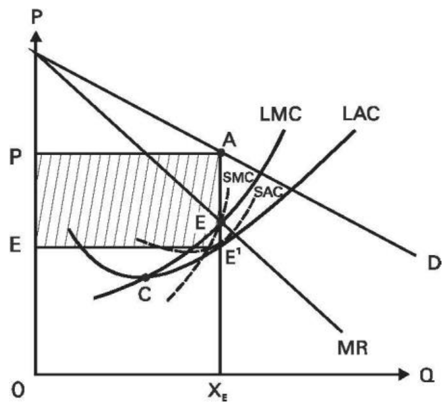


Figure 10.3:

Monopolist with Suboptimal Plant and Excess Capacity

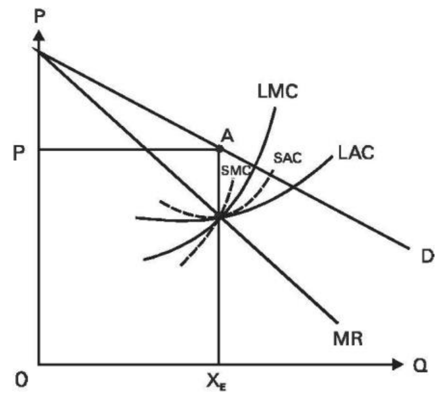
In Figure 10.4, we depict the case where the size of the market is so large that the monopolist, in order to maximise his output, must build a plant larger than the optimal and over utilise it. This is because to the right of the minimum point of the LAC the SRAC and the LAC are tangent at a point of their positive slope and also because the SRMC must be equal to the LAC. Thus, the plant that maximises the monopolist's profits leads to higher costs for two reasons: firstly, because it is larger than the optimal size and secondly because, it is over utilised.

Figure 10.4



Finally, in Figure 10.5 we show the case in which the market size is just large enough to permit the monopolist to build the optimal plant and use it at full capacity.

Figure 10.5



It should be clear as to which of the above situations will emerge in any particular case depends on the size of the market (given the technology of the monopolist).

Did u know? What is Herfindhal Index?

It is commonly used by government bodies while measuring the degree of competition in a market. It takes into account the size distribution of firms.

Source: www.cato.org/pub_display.php?pub_id=1105

10.3 Price Discrimination under Monopoly

A seller indulges in price discrimination when he sells the same product at different prices to different buyers. Price discrimination is 'personal' when different prices are charged from different persons, 'local' when different prices are charged from people living in different localities, and 'according to use' when, for example, higher rates are charged for commercial use of electricity as compared to domestic use.

Price discrimination is possible when the seller is able to distinguish individual units bought by single buyer or to separate buyers into classes where resale among classes is not possible.

Thus, price discrimination is possible in case of personal services of doctors and lawyers. It is also possible when markets are too distant or are separated by tariff barriers. There may be a legal sanction for price discrimination as in the case of electricity charges from domestic and industrial users. It is also possible when some people are prejudiced against a particular market and prefer a posh market or when some people are too lethargic to move away from the nearest shopping centre.

Case 1: Equilibrium under Price Discrimination

A monopolist firm sells a single product in two different markets either different elasticities of demand. Resale among the customers is not possible. The firm has to decide how much total output should be produced and how it should be distributed between sub-markets and what prices should be charged in the two sub-markets. It is assumed that production takes place at the same point.

Figure 10.6: Equilibrium of Monopolist under Price Discrimination

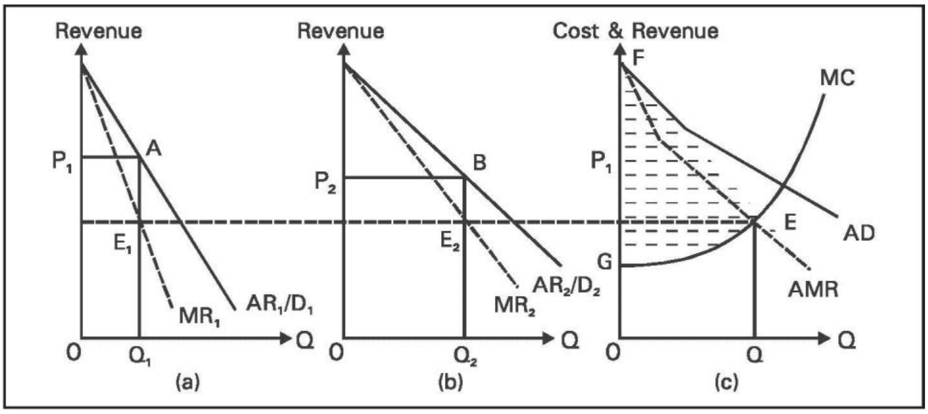
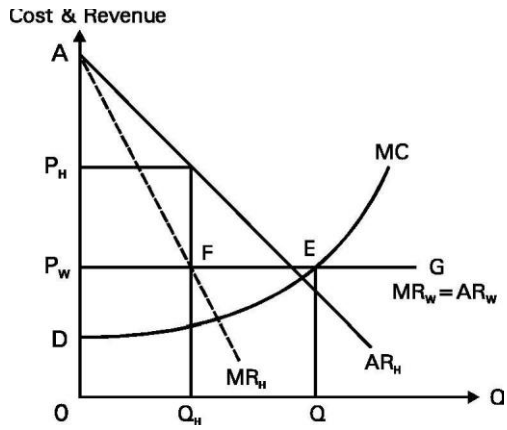


Figure 10.6 shows the equilibrium of a monopolist under the two sub-markets. It may be observed that the monopolist faces a less elastic demand curve in sub-market 1 as compared to 2. The aggregate demand and MR curves are shown in part (c). Profits are maximised where MC curve meets the MR curve from below, i.e., at point E. The total profits are represented by the shaded area EFG lying between the MR and MC curves. The monopolist would produce Q units of output. In order to know the distribution of Q in two sub-markets the equilibrium aggregate MR is equated to MR_1 and MR_2 at points E_1 and E_2 respectively. The monopolist would sell amount Q_1 in sub-market 1 at a price P_1. He would sell amount Q_2 at a price P_2 in sub-market 2. It should be noted that $Q = Q_1+Q_2$.

Case 2: Dumping

This is a special case when the firm is a monopolistic in the domestic market but faces perfect competition in the world market. Figure 10.7 shows the equilibrium of such a firm. AR_H and MR_H are the average and marginal revenue curves respectively which the firm faces in the home market. AR_W or MR_W is horizontal straight line at the level of prices P_w, prevailing in the world market. MC denotes the marginal cost curve. The aggregate MR curve is given by the curve AFEG which is the lateral summation of MR_W and MR_H. The profits are maximised when aggregate MR=MC, i.e., at point E. The firm would sell total output Q. In the home market, the firm would equate MR_H to the equilibrium MC. Thus, the firm would sell Q_H units in the domestic market at a price P_H which is higher than the international price P_W. The remaining amount $(Q-Q_H)$ would be sold in the world market at price P_W. The area AFED denotes the total profits of this firm. The producer is said to be 'dumping' in the world market since he is charging less price in the world market than in the home market.

Figure 10.7: Disequilibrium of a Monopolist under Price Discrimination



10.4 Summary

- In the case of monopoly one firm constitutes the whole industry.
- There must be a single producer or seller of a product and the product has no close substitute.
- In the short run the monopolist maximises his short run profits or minimises his short run losses if the following two conditions are satisfied: (i) MC = MR and (ii) The slope of MC is greater than the slope of MR at the point of their intersection.
- In the long run, the monopolist has the time to expand his plant or to intensively use his existing plant which will maximise his profits.
- A seller indulges in price discrimination when he sells the same product at different prices to different buyers. A monopolist firm sells a single product in two different markets either different elasticities of demand.

10.5 Keywords

Dumping: When the firm is a monopolistic in the domestic market but faces perfect competition in the world market.

Equilibrium: Condition when the firm has no tendency either to increase or to contract its output.

Imperfect competition: A market structure wherein individual firms exercise control over the price to a smaller or larger degree depending upon the degree of imperfection present in a case.

Market period: A very short period in which the supply is fixed, that is no adjustment can take place in supply conditions.

Monopoly: Existence of a single producer or seller which is producing or selling a product which has no close substitutes.

Perfect competition: A market structure characterized by a complete absence of rivalry among the individual firms.

Profit: Difference between total revenue and total cost.

10.6 Self Assessment

1. State true or false for the following statements:
   (a) In the case of monopoly one firm constitutes the whole industry.
   (b) In case of monopoly, the marginal revenue is less than the price.

(c) In the short-run, a monopolist cannot be in equilibrium if MC cuts the MR curve from below, even if MC=MR.

(d) Monopoly represents an efficient use of resources at the macro level.

2. Choose the appropriate answer:

(a) Given the same cost and revenue schedules, a profit-maximizing monopolist will produce:

(i) less output than a competitive industry

(ii) more output than a competitive industry

(iii) the same amount of output as a competitive industry (iv) none of above.

(b) The quantity supplied by a profit maximizing monopolist is:

(i) equal to quantity demanded at competitive market price

(ii) insufficient to supply the quantity demanded at monopoly price

(iii) equal to quantity demanded when price equals marginal cost

(iv) insufficient to satisfy the quantity demanded at the competitive market price

(c) Which of the following is not true of a profit maximizing monopoly firm in equilibrium?

(i) total profit is maximum for the firm

(ii) there is less output than under competitive conditions

(iii) average costs are minimum at the equilibrium rate of output (iv) the price is higher than under competitive conditions.

3. Fill in the blanks:

(a) Under monopoly .... firm constitutes the whole industry.

(b) In monopoly the demand curve for the firm and industry is............. .

(c) In the short run monopolist will continue working so long as price is above the ....

(d) In monopoly seller may indulge in price ....

(e) Since there will be no new entry, it is not necessary for the monopolist to reach .... scale.

(f) If a seller is charging less price in the world market than in the home market, it is called ....

(g) In monopoly product has no close ....

Answers: Self Assessment

1. (a) True (b) True (c) True (d) False
2. (a) i (b) iv (c) i
3. (a) one (b) same (c) average variable cost

(d) discrimination (e) an optimal (f) Dumping (g) substitute