

UNIT – V

SHORT RUN AND LONG RUN EQUILIBRIUM OF THE MONOPOLY FIRM

A. Short-run equilibrium:

The monopolist maximizes his short-run profits if the following two conditions are fulfilled Firstly, the MC is equal to the MR.

Secondly, the slope of MC is greater than the slope of the MR at the point of intersection.

In figure 6.2 the equilibrium of the monopolist is defined by point ϵ , at which the MC intersects the MR curve from below. Thus both conditions for equilibrium are fulfilled. Price is P_M and the quantity is X_M . The monopolist realizes excess profits equal to the shaded area $AP_M CB$. Note that the price is higher than the MR.

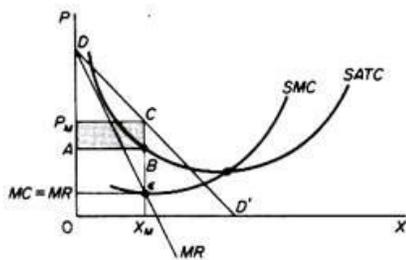


Figure 6.2

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In pure competition the firm is a price-taker, so that its only decision is output determination. The monopolist is faced by two decisions: setting his price and his output. However, given the downward-sloping demand curve, the two decisions are interdependent.

The monopolist will either set his price and sell the amount that the market will take at it, or he will produce the output defined by the intersection of MC and MR, which will be sold at the corresponding price, P. The monopolist cannot decide independently both the quantity and the price at which he wants to sell it. The crucial condition for the maximization of the monopolist's profit is the equality of his MC and the MR, provided that the MC cuts the MR from below.

We may now re-examine the statement that there is no unique supply curve for the monopolist derived from his MC. Given his MC, the same quantity may be offered at different prices depending on the price elasticity of demand. Graphically this is shown in figure 6.3. The quantity X will be sold at price P_1 if demand is D_1 , while the same quantity X will be sold at price P_2 if demand is D_2 .

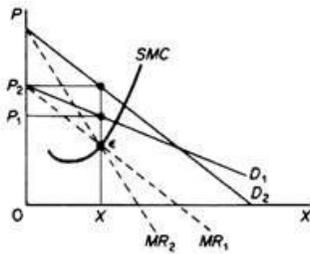


Figure 6.3

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Thus there is no unique relationship between price and quantity. Similarly, given the MC of the monopolist, various quantities may be supplied at any one price, depending on the market demand and the corresponding MR curve. In figure 6.4 we depict such a situation. The cost conditions are represented by the MC curve. Given the costs of the monopolist, he would supply OX_1 , if the market demand is D_1 , while at the same price, P , he would supply only OX_2 if the market demand is D_2 .

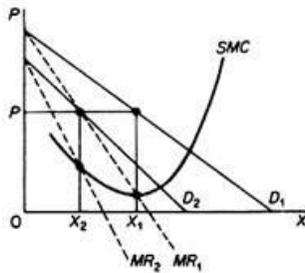


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B. long-run equilibrium:

In the long run the monopolist has the time to expand his plant, or to use his existing plant at any level which will maximize his profit. With entry blocked, however, it is not necessary for the monopolist to reach an optimal scale (that is, to build up his plant until he reaches the minimum point of the LAC). Neither is there

any guarantee that he will use his existing plant at optimum capacity. What is certain is that the monopolist will not stay in business if he makes losses in the long run.

He will most probably continue to earn supernormal profits even in the long run, given that entry is barred. However, the size of his plant and the degree of utilization of any given plant size depend entirely on the market demand. He may reach the optimal scale (minimum point of LAC) or remain at suboptimal scale (falling part of his LAC) or surpass the optimal scale (expand beyond the minimum LAC) depending on the market conditions.

In figure 6.5 we depict the case in which the market size does not permit the monopolist to expand to the minimum point of LAC. In this case not only is his plant of suboptimal size (in the sense that the full economies of scale are not exhausted) but also the existing plant is underutilized. 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 utilized at the level e', there is excess capacity.

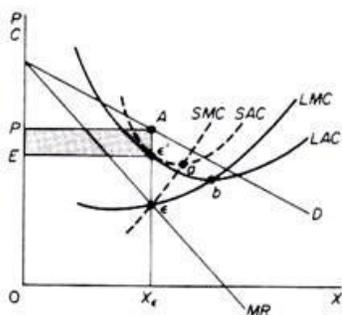


Figure 6.5 Monopolist with suboptimal plant and excess capacity

In figure 6.6 we depict the case where the size of the market is so large that the monopolist, in order to maximize his output, must build a plant larger than the optimal and overutilise 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 maximizes 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 overutilised. This is often the case with public utility companies operating at national level.

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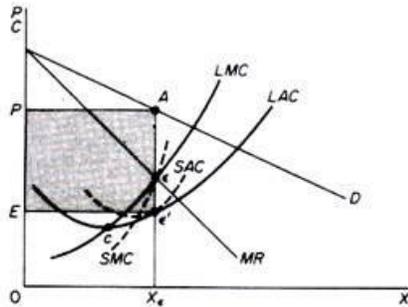


Figure 6.6 Monopolist operating in a large market: his plant is larger than the optimal (e') and it is being overutilised (at e'').

Finally in figure 6.7 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.

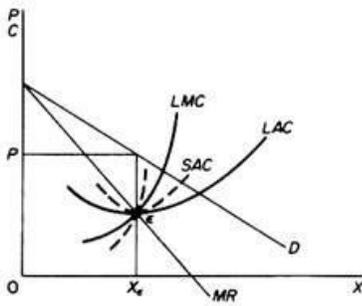


Figure 6.7

It should be clear that which of the above situations will emerge in any particular case depends on the size of the market (given the technology of the monopolist). There is no certainty that in the long run the monopolist will reach the optimal scale, as is the case in a purely competitive market. In monopoly there are no market forces similar to those in pure competition which lead the firms to operate at optimum plant size (and utilize it at its full capacity) in the long run.

Bilateral Monopoly: Meaning and Price Output Determination

Meaning of Bilateral Monopoly:

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Bilateral monopoly refers to a market situation in which a single producer (monopolist) of a product faces a single buyer (monopolist) of that product. We analyse below price, output and profit determination under bilateral monopoly.

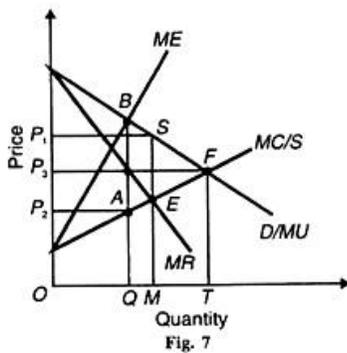
Its Assumptions:

This analysis is based on the following assumptions:

1. There is a single commodity with no close substitutes.
2. The monopolist is its sole producer or seller.
3. The monopolist is its only buyer.
4. The monopolist and the monopolist are both free to maximise their own individual profits.

Price-Output Determination of Bilateral Monopoly:

Given these assumptions, price and output determination under bilateral monopoly is illustrated in Figure 7 where D is the demand curve of the monopolist's product and MR is its corresponding marginal revenue curve of the monopolist. The MC curve of the monopolist is the supply curve (S) facing the monopolist. The upward slope shows that if the monopolist wants to buy more, he will have to pay a higher price.



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So when he buys more units of the product, his marginal outlay or marginal expenditure increases. This is shown by the upward sloping ME curve which is the

marginal expenditure curve to the total supply curve MC/S. The curve D is the marginal utility (MU) curve of the monopolist.

Let us first take the equilibrium position of the monopolist. The monopolist is in equilibrium at point E where his MC curve cuts the MR curve from below. His profit maximising price is OP_1 (=MS) at which he will sell OM quantity of the product.

The monopsonist is in equilibrium at point B where his marginal expenditure curve ME intersects the demand curve D/MU. He buys OQ units of the product at OP_2 (=QA) price, as determined by point A on the supply curve MC/S.

So there is disagreement over price between the monopolist who wants to charge a higher price OP_2 and the monopsonist who wants to pay a lower price OP_1 . From a theoretical viewpoint, there is indeterminacy in the market.

In actuality, the actual quantity of the product sold and its price depends upon the relative bargaining strength of the two. The greater the relative bargaining strength of the monopolist, the closer will price be to OP_1 and the greater the relative strength of the monopsonist, the closer will price be to OP_2 . Thus the price will settle somewhere between OP_1 and OP_2 .

If the monopoly and monopsony firms merge into a single firm with the monopsonist taking over the monopoly firm, the MC/S curve of the monopsonist becomes his marginal cost curve. The merged firm would thus maximise its profits at point F where its MC/S curve cuts the D/MU curve.

It will supply and use OT output at OP_3 price. In this situation, the merged firm gets much larger output (OT) than the monopoly output (OM) at a lower price (OP_3) than the monopoly price (OP_1).

However, it may not be possible to merge the monopoly firm with the monopsony firm. Economists have suggested another solution to the problem of bilateral monopoly that of joint profit maximisation. In this case, the monopolist and monopsonist agree on the quantity to be sold and bought to each other but disagree on the price to be charged. On this basis, they want to maximise joint profits because they feel that they have got information about each other's wants and aspirations.

This case is illustrated in Figure 8 where the monopolist is in equilibrium at A when his MC/S curve = MR curve. He wants to sell OQ quantity at OP_1 (=QB)

price. On the other hand, the monopsonist is in equilibrium at point B when his demand curves $D/MU = ME$ curve.

He wants to buy OQ quantity at OP_2 price. Depending on the relative bargaining strength of each, the price can be anywhere between P_2 and P_1 and is thus indeterminate. But their joint profits are $P_1P_2 \times OQ$ that can be divided between the monopolist and the monopsonist in the ratio

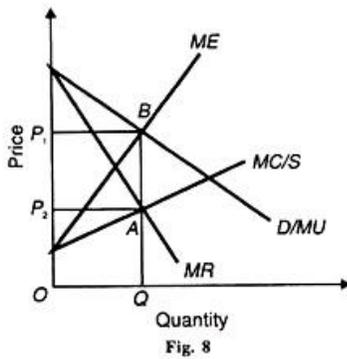


Fig. 8

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$$\frac{P_x - P_2}{P_1 - P_x} \frac{P_x - P_2}{P_1 - P_x}$$

$$\frac{P_1 - P_2}{P_1 - P_2} \frac{P_1 - P_x}{P_1 - P_x}$$

Where P_x is any price between P_2 and P_1 .

The division of joint profits is also a theoretical possibility like the solution of the bilateral monopoly problem which is indeterminate.

Monopolistic Competition

In monopolistic competition, the market has features of both perfect competition and [monopoly](#). A monopolistic competition is more common than pure competition or pure monopoly. In this [article](#), we will understand monopolistic competition and look at the features, price-output determination, and conditions for equilibrium.

Monopolistic Competition

In order to understand monopolistic competition, let's look at the market for soaps and detergents in [India](#). There are many well-known brands like Lux, Rexona, Dettol, Dove, Pears, etc. in this segment.

Since all manufacturers produce soaps, it appears to be an example of perfect competition. However, on close scrutiny, we find that each seller varies the product slightly to make it different from its competitors.

Hence, Lux focuses on making beauty soaps, Liril on freshness, Dettol on antiseptic properties, Dove on smooth skin, etc. This allows each seller to attract buyers to itself based on some factor other than [price](#).

This [market](#) has a mix of both perfect competition and monopoly and is a classic example of monopolistic competition.

Features of Monopolistic Competition

1. *Large number of sellers:* In a market with monopolistic competition, there are a large number of sellers who have a small share of the market.
2. *Product differentiation:* In monopolistic competition, all brands try to create [product](#) differentiation to add an element of monopoly over the competing products. This ensures that the product offered by the brand does not have a perfect substitute. Therefore, the manufacturer can raise the price of the product without having to worry about losing all its customers to other brands. However, in such a market, while all brands are not perfect substitutes, they are close substitutes for each other. Hence, the seller might lose at least some customers to his competitors.
3. *Freedom of entry or exit:* Like in perfect competition, firms can enter and exit the market freely.
4. *Non-price competition:* In monopolistic competition, sellers compete on factors other than price. These factors include aggressive advertising, product development, better [distribution](#), after sale services, etc. Sellers don't cut the price of their products but incur high costs for the promotion of their goods. If the firms indulge in price-wars, which is the possibility under perfect competition, some firms might get thrown out of the market.

Price-output determination under Monopolistic Competition: Equilibrium of a firm

In monopolistic competition, since the product is differentiated between firms, each firm does not have a perfectly elastic demand for its products. In such a

market, all firms determine the price of their own products. Therefore, it faces a downward sloping demand curve. Overall, we can say that the [elasticity of demand](#) increases as the differentiation between products decreases.

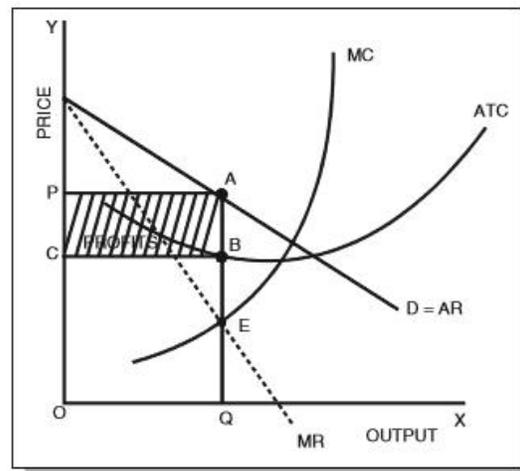


Fig. 1 : Short run equilibrium of a firm in monopolistic competition : Super-normal profits

Fig. 1 above depicts a firm facing a downward sloping, but flat [demand](#) curve. It also has a U-shaped short-run cost curve.

Conditions for the Equilibrium of an individual firm

The conditions for price-output determination and equilibrium of an individual firm are as follows:

1. $MC = MR$
2. The MC curve cuts the MR curve from below.

In Fig. 1, we can see that the MC curve cuts the MR curve at point E. At this point,

- Equilibrium price = OP and
- Equilibrium output = OQ

Now, since the per unit cost is BQ, we have

- Per unit super-normal profit (price-cost) = AB or PC.
- Total super-normal profit = APCB

The following figure depicts a firm earning losses in the short-run.

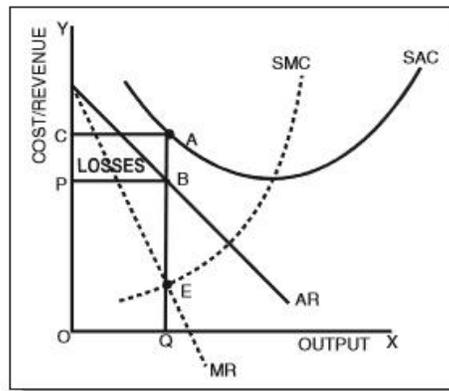


Fig. 2 : Short run equilibrium of a firm in Monopolistic Competition – With losses

From Fig. 2, we can see that the per unit cost is higher than the price of the firm. Therefore,

- $AQ > OP$ (or BQ)
- Loss per unit = $AQ - BQ = AB$
- Total losses = $ACPB$

Long-run equilibrium

If firms in a monopolistic competition earn super-normal profits in the short-run, then new firms will have an incentive to enter the [industry](#). As these firms enter, the profits per firm decrease as the total demand gets shared between a larger number of firms. This continues until all firms earn only normal profits. Therefore, in the long-run, firms, in such a market, earn only normal profits.

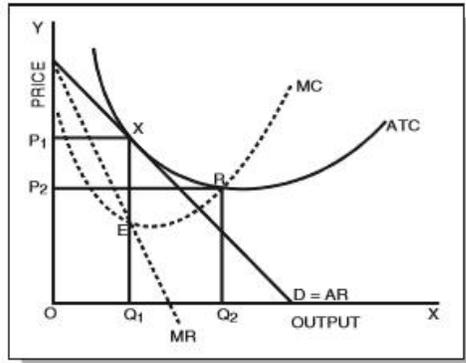


Fig. 3 : The long-term equilibrium of a firm in monopolistic competition

As we can see in Fig. 3 above, the average revenue (AR) curve touches the average cost (ATC) curve at point X. This corresponds to quantity Q_1 and price P_1 . Now, at equilibrium ($MC = MR$), all super-normal profits are zero since the average revenue = average costs. Therefore, all firms earn zero super-normal profits or earn only normal profits.

It is important to note that in the long-run, a firm is in an equilibrium position having excess capacity. In simple words, it produces a lower quantity than its full capacity. From Fig. 3 above, we can see that the firm can increase its output from Q_1 to Q_2 and reduce average costs. However, it does not do so because it reduces the average revenue more than the average costs. Hence, we can conclude that in monopolistic competition, firms do not operate optimally. There always exists an excess capacity of production with each firm.

In case of losses in the short-run, the firms making a loss will exit from the market. This continues until the remaining firms make normal profits only.

Product Differentiation

What is Product Differentiation?

Product differentiation is a process used by businesses to distinguish a product or service from other similar ones available in the market.

The goal of this tactic is to help businesses develop a competitive advantage and define compelling [unique selling propositions \(USPs\)](#) that set their product apart

from competitors. Organizations with multiple products in their portfolio may use differentiation to separate their various products from one another and prevent cannibalization.

In this article, we will provide an overview of product differentiation and answer several common questions about this process.

Why is Product Differentiation Important?

In many industries, the barrier to entry has dropped significantly in recent years. As a side effect, these industries have seen substantial increases in competitive products. In increasingly crowded competitive landscapes, differentiation is a critical prerequisite for a product's survival.

What does your product or service do/accomplish/offer that the competition does not? Product differentiation helps your organization answer this question and focus on the unique value a product brings to its users. If no effort is put into a [differentiation strategy](#), products risk blending in with a sea of competitors and never getting the market hold they need to keep going.

Who is Responsible for Product Differentiation?

While many schools of thought suggest differentiation is marketing's responsibility, that is not necessarily true. In fact, virtually every department within an organization can play a role in product differentiation.

Which teams are responsible for differentiation?

- Marketing
- Product Management
- Engineering
- Sales
- Support and Success

This is because any aspect of your product can be a differentiating factor. We usually think first of marketing because it's marketing who focuses on product positioning and is often the first touchpoint for a customer or prospect. However, differentiation is more than just how marketing positions the product—every single customer touchpoint is an opportunity for differentiation. Is the product reliable or prone to outages? How difficult is it to purchase the product? What are customer interactions with support and success like?

The answers to each of these questions could lead to a differentiating factor.

What are Types of Product Differentiation?

There are several different *factors* that can differentiate a product, however, there are three main categories of product differentiation. Those include horizontal differentiation, vertical differentiation, and mixed differentiation.

Horizontal Differentiation

Horizontal differentiation refers to any type of differentiation that is *not* associated with the product's quality or price point. These products offer the same thing at the same price point. When making decisions regarding horizontally differentiated products, it often boils down to the customer's personal preference.

Examples of Horizontal Differentiation: Pepsi vs Coca Cola, bottled water brands, types of dish soap.

Vertical Differentiation

In contrast to horizontal differentiation, vertically differentiated products are extremely dependent on price. With vertically differentiated products, the price points and marks of quality are different. And, there is a general understanding that if all the options were the same price, there would be a clear winner for "the best."

Examples of Vertical Differentiation: Branded products vs. generics, A basic black shirt from Hanes vs. a basic black shirt from a top designer, the vehicle makes.

Mixed Differentiation

Also called "simple differentiation," mixed differentiation refers to differentiation based on a combination of factors. Often, this type of differentiation gets lumped in with horizontal differentiation.

Examples of Mixed Differentiation: Vehicles of the same class and similar price points from two different manufacturers.

What are the Factors of Product Differentiation?

Now that we've looked at the categories of product differentiation, let's look at the specific factors that can differentiate products. A product's unique selling proposition (USP) can be literally anything that makes it unique or different from others out there. Here's a few examples of ways companies can differentiate their products from others in the market.

- **Quality:** How does the quality, reliability, and ruggedness of your product compare to others on the market?
- **Design:** Have you done something different with your design? Is it minimalistic and sleek? Easy-to-navigate?
- **Service and interactions:** Do you offer faster support than anyone else on the market? Does your team provide custom onboarding? How are your customers' interactions with your team different from those of your competition?
- **Features and functionalities:** Does your product do something the competition does not? Is it faster than anything else out there? Is it the only one to offer a certain integration?
- **Customization:** Can you customize parts of the product that competitors cannot?
- **Pricing:** How does your product's price or [pricing model](#) differ from that of the competition? Cheaper is not the only differentiating factor to consider with [product pricing](#).

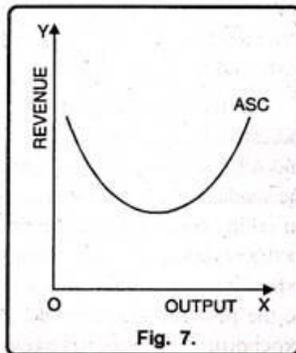
SELLING COST

- **Selling Costs: Definitions, Assumptions, Equilibrium!**
- Selling costs play the key role in monopolistic competition and oligopoly. Under these market forms, the firms have to compete to promote their sale by spending on advertisements and publicity.
- Moreover, producer has not to decide about price and output and he also keeps in view how to maximize the profit.
- Thus, cost on advertisement publicity and salesmanship ads to the demand of the product. We do not find perfect competition or monopoly in the real world but monopolistic competition or oligopoly. In short, selling costs is a broader concept than the advertisement expenditures. Advertisement expenditures are part of selling costs.
- In selling costs we include the salaries of sales persons, allowances to retailers to display the products etc. besides the advertisements. Advertisement expenditure includes costs incurred for advertising in

newspapers and magazines, televisions, radio, cinema slides etc. It was Chamberlin who introduced the analysis of selling costs and distinguished it from the production costs. The production costs include all those expenses which are spent on the manufacturing of the commodity, its transportation cost of handling, storing and delivering of the commodity to actual customers because these add utilities to a commodity.

- On the other hand, all selling costs include all expenditures in order to raise demand for a commodity. In short, selling costs are those which are made to create the demand for the product. Transport costs should not be included in selling costs; rather these should be included in the production costs. Transport costs actually do not increase the demand; it only helps in meeting the demand of the consumers.
- In the same fashion, high rents are not the part of selling costs. High rents are paid so as to meet the already existing demand of the people. According to Edward H. Chamberlin, "Those costs which are made to adopt the product to the demand are costs of production; those made to adopt the demand to product are costs of selling."
- **Definitions:**
 - "Selling costs are costs incurred in order to alter the position or shape of the demand curve for the product." E.H. Chamberlin
 - "Selling costs may be defined as costs necessary to persuade a buyer to buy one product rather than another or to pay from one seller rather than another." Meyers
- **Assumptions:**
 - **Basically, the concept of selling cost is based on the following two assumptions:**
 1. Buyers do not have any perfect knowledge about the different types of product.
 2. Buyers demand and tastes can be changed.
- **Difference between Selling Costs and Production Costs:**
 - There is a fundamental difference between selling costs and production costs. Production cost includes all the expenses incurred in making particular product and transporting it to the consumers. They include, outlays incurred on services engaged in the manufacturing of the product like land, labour and capital etc. On the other hand, selling costs include all the costs incurred to change the consumer's preference from one product to another. These are generally intended to raise the demand of one product at any given price.

- According to E.H. Chamberlin, “Production costs create utilities in order that demands may be satisfied while selling costs create and shift the demand curves themselves.” In short, we cannot make a clear cut distinction between the selling cost and production cost. In fact, both the costs are inter-related throughout the price system, so that at no point it can be said that one has ended and the other is to begin.
- **Average Selling Cost:**
- The curve of selling cost is a tool of economic analysis. It is a curve of average selling cost per unit of product. It is akin to the average cost curves. In other words, like the cost curves, selling costs are also of U-shape. Moreover, there are two terms according to which the curve of selling cost is drawn. But, in both the cases, the shape of selling cost differs from one another. This has been illustrated with the help of a Fig. 7.



- In Fig. 6 (A) ASC is the average selling cost. In the initial stage, the curve falls and later it starts rising. It means in the beginning proportionate increase in sale is more than the increase in selling costs, but after a point proportionate increase in sale is less than the selling cost. It signifies the fact that up to a certain level per unit selling cost go on to diminish but after that the same tend to increase. But, the ASC neither will touch the X-axis nor it will be zero. In other words, the ASC will form the shape of rectangular hyperbola.
- **Equilibrium with Selling Costs (Variable Costs):**
- Selling costs influence equilibrium price-output adjustment of a firm under monopolistic competition. In the Fig. 8. APC is the initial average production cost. AR_1 is the initial average revenue curve or initial demand curve. The initial price is OP and the firm earns profits shown by the first shaded rectangle PQRS.

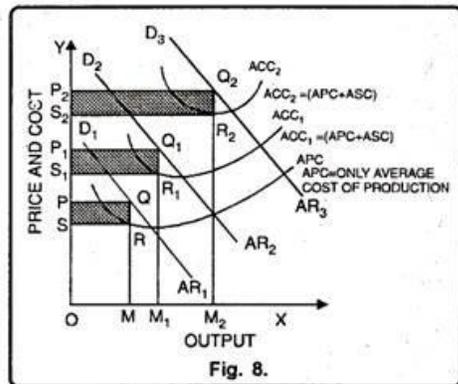
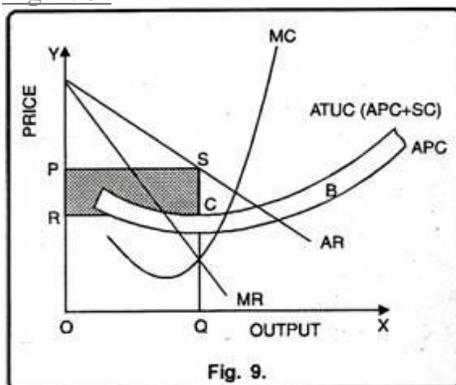


Fig. 8.

- ACC_1 is the average composite costs curve, which includes the average selling cost (ASC). Average selling cost is equal to the vertical distance between APC and ACQ. The new demand curve is AR_2 . It is obtained after incurring selling costs or after making advertisements.
- It is, obvious, that the demand for the product has increased as a result of selling costs. The profits have also increased as a result of selling costs. The profits after incurring selling costs at OM_1 level of output become equal to the shaded area $P_1Q_1R_1S_1$. Now these profits are greater than the initial level of profits when no selling cost is incurred, i.e., $P_1Q_1R_1S_1 > PQRS$.
- ACC_2 is the average composite cost when more additional cost is incurred, as a result of which the demand for the product further increases. The new demand curve is AR_3 which indicates a higher demand for the product. The profits are also greater than before since the shaded area $P_2Q_2R_2S_2 > P_1Q_1R_1S_1$.
- It is, thus, obvious that the demand for the product is increasing as a result of the selling costs. Since selling costs are included in the cost of production, therefore price of the product is also increasing as a result of selling costs. Profits are also increasing as a result of higher selling costs and increased demand. In the above diagram, the effect of selling outlay on competitive advertisement has been indicated. Before selling costs are incurred, the firm's average revenue or demand curve is AR_1 and APC is the basic initial cost of production.
- So, the firm earns maximum profits as shown by the shaded area PQRS. Here, question arises, how long a firm may go on incurring expenditure on selling costs? It will continue to make expenditure on selling costs as long as any addition to the revenue is greater than the addition to the selling costs. The firm will stop incurring expenditure on selling costs when the total profits are at the highest possible level.

- This would be the point at which the additional revenue due to advertising expenditure equals the extra expenditure on advertisement. It should, however, be noted clearly that the effects of advertisement on prices and output are uncertain. Advertisement by a firm may be considered successful if the elasticity of demand for its product falls.
- **Equilibrium with Selling Costs (Fixed Costs):**
- In modern times, a lot of money is spent on selling costs. Of course, it becomes difficult to determine the most profitable output. At the same time, we also know that selling costs create a new demand curve. However, here equilibrium is determined when there are fixed selling costs as shown in Figure 9.



- In Fig. 9, AR is the average revenue or demand curve. MR is the marginal revenue curve. The average production cost (APC), the shaded area B shows the selling cost. This shows that by adding selling cost in average production cost, we get average total cost. ($ATUC = APC + SC$) SC is the net return per unit while SQ is the price minus SC – the average total unit cost and OQ is the level of output. Thus shaded area PRCS is the maximum net return and OQSP is the total revenue minus total cost OQCR.
- **Product Differentiation:**
- According to Chamberlin product differentiation is one of the most important feature of monopolistic competition. Product differentiation indicates that goods are close substitutes but are not homogeneous. They differ in colour, name, packing, size etc. For instance, you may get a variety of soaps in the market like Moti, Sandal, Lux, Hamam, Rexona, Lifebouy etc. All these are close substitutes but at the same time, they differ from each other.
- **Main Peculiarities of Product Differentiation:**
- **The main peculiarities of product differentiation are as under:**

Y commodity can be sold and the profit is BMKP which is higher than the profit which can be earned by sale of X commodity. Hence, the producer will choose to produce Y commodity.
