Perfect Competition

What is Perfect competition ?

- Perfect competition is a market structure characterised by a complete absence of rivalry among the individual firms. Thus perfect competition in economic theory has a meaning diametrically opposite to the everyday use of this term.
- In practice businessmen use the word competition as synonymous to rivalry. In theory, perfect competition implies no rivalry among firms.

Assumptions

1. Large numbers of sellers and buyers: The industry or market includes a large number of firms (and buyers), so that each individual firm, however large, supplies only a small part of the total quantity offered in the market. The buyers are also numerous so that no monopsonistic power can affect the working of the market. Under these conditions each firm alone cannot affect the price in the market by changing its output.

2. Product homogeneity: The industry is defined as a group of firms producing a homogeneous product. The technical characteristics of the product as well as the services associated with its sale and delivery are identical. There is no way in which a buyer could differentiate among the products of different firms. If the product were differentiated the firm would have some discretion in setting its price.

- The assumptions of large numbers of sellers and of product homogeneity imply that the individual firm in pure competition is a price-taker: its demand curve is infinitely elastic, indicating that the firm can sell any amount of output at the prevailing market price. The demand curve of the individual firm is also its average revenue and its marginal revenue curve.

3. Free entry and exit of firms: There is no barrier to entry or exit from the industry. Entry or exit may take time, but firms have freedom of movement in and out of the industry. This assumption is supplementary to the assumption of large numbers. If barriers exist the number of firms in the industry may be reduced so that each one of them may acquire power to affect the price in the market.

4. Profit maximization: The goal of all firms is profit maximisation. No other goals are pursued.

5. No government regulation: There is no government intervention in the market (tariffs, subsidies, rationing of production or demand and so on are ruled out).

The above assumptions are sufficient for the firm to be a price-taker and have an infinitely elastic demand curve. The market structure in which the above assumptions are fulfilled is called *pure competition*. It is different from *perfect competition*, which requires the fulfilment of the following additional assumptions.

- **Perfect mobility of factors of production:** The factors of production are free to move from one firm to another throughout the economy. It is also assumed that workers can move between different jobs, which implies that skills can be learned easily. Finally, raw materials and other factors are not monopolized and labour is not unionised. In short, there is perfect competition in the markets of factors of production.
- **Perfect knowledge:** It is assumed that all sellers and buyers have complete knowledge of the conditions of the market. This knowledge refers not only to the prevailing conditions in the current period but in all future periods as well. Information is free and costless. Under these conditions uncertainty about future developments in the market is ruled out. Under the above assumptions we will examine the equilibrium of the firm and the industry in the short run and in the long run.

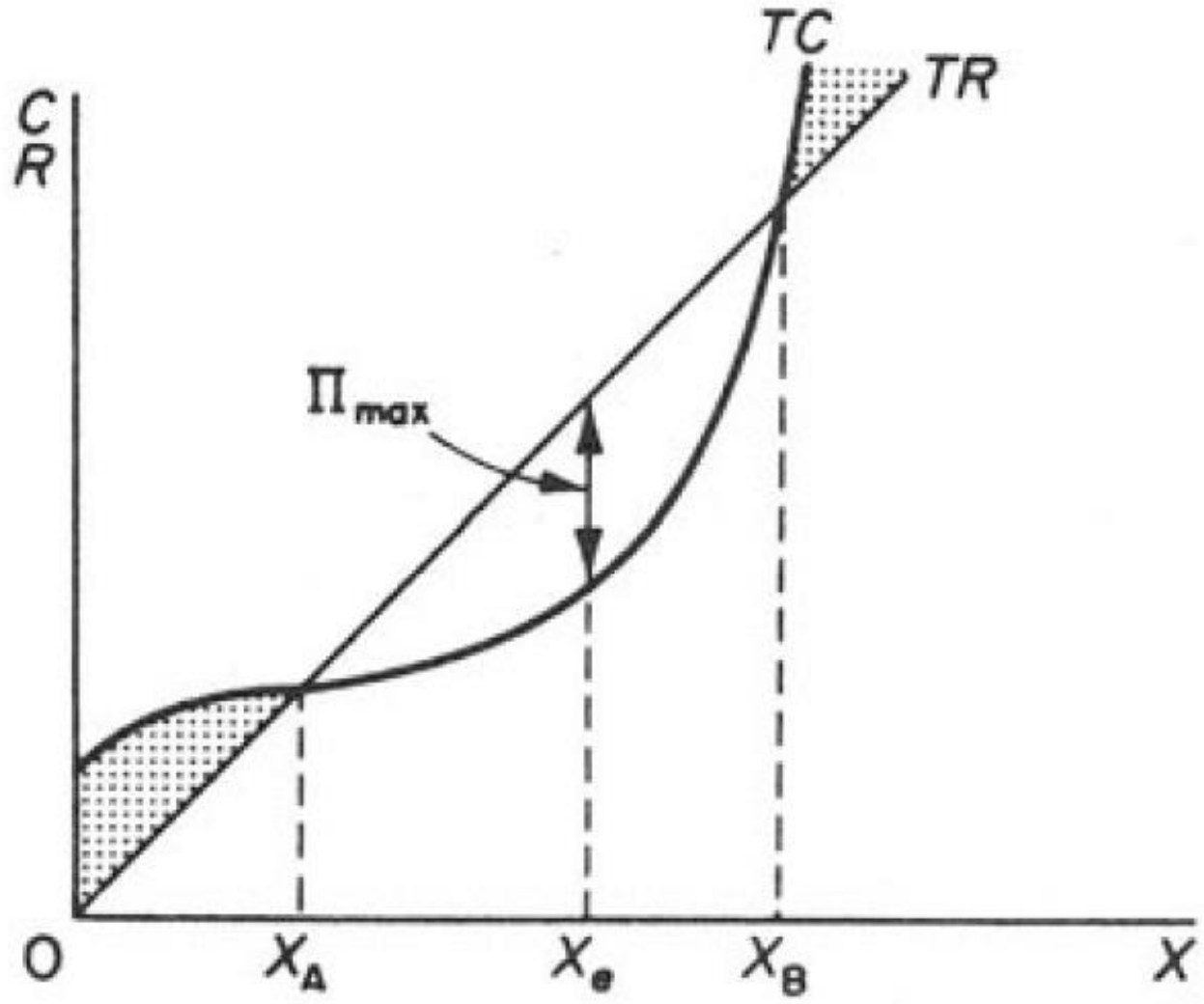
Short-run Equilibrium

- The firm is in equilibrium when it maximises its profits, defined as the difference between total cost and total revenue:
- Conditions for equilibrium in the short-run are :

(i) $MC = MR$ and,

(ii) (slope of MC) > (slope of *MR).*

- It should be noted that the *MC* is always positive, because the firm must spend some money in order to produce an additional unit of output. Thus at equilibrium the *M R* is also positive.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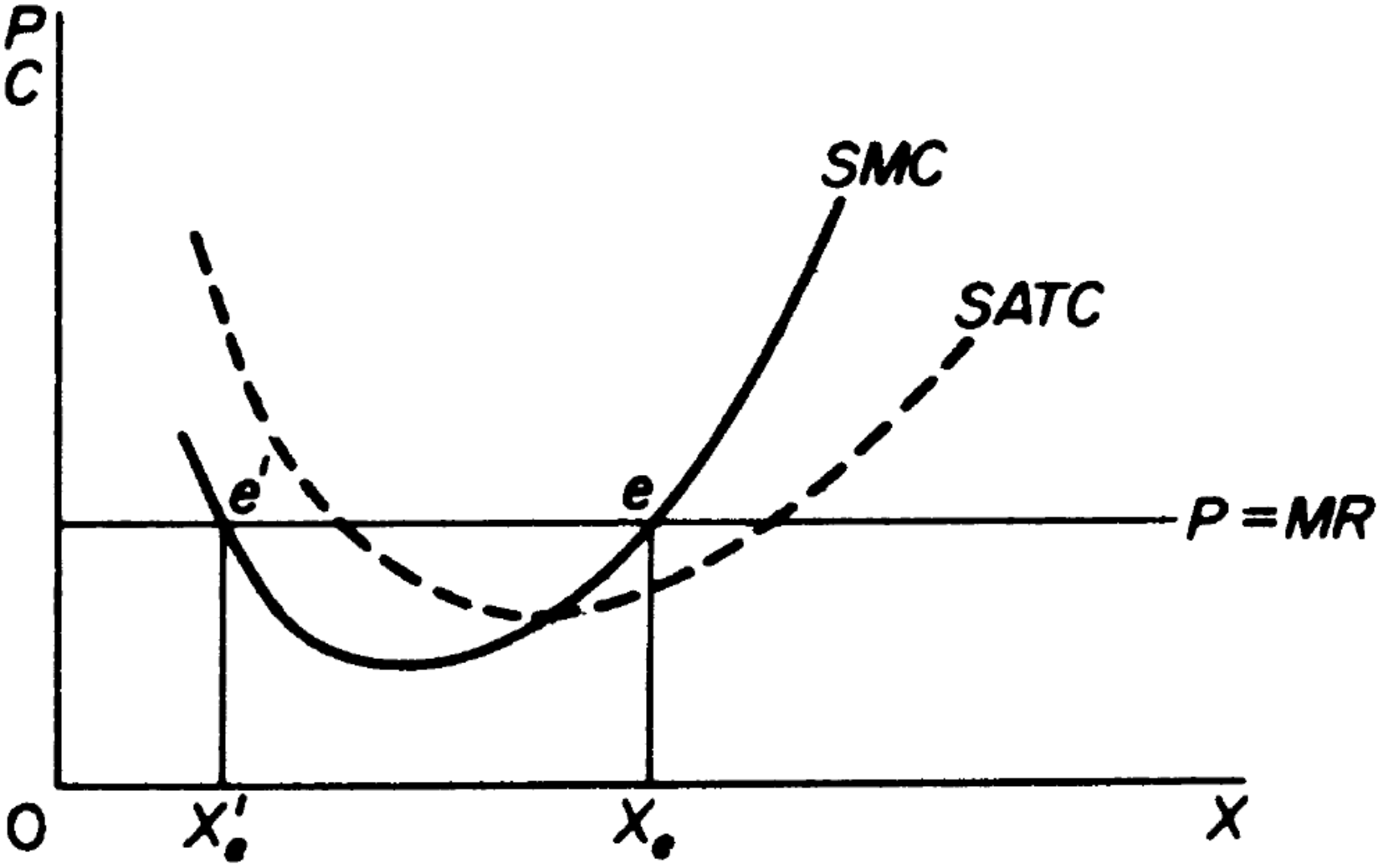
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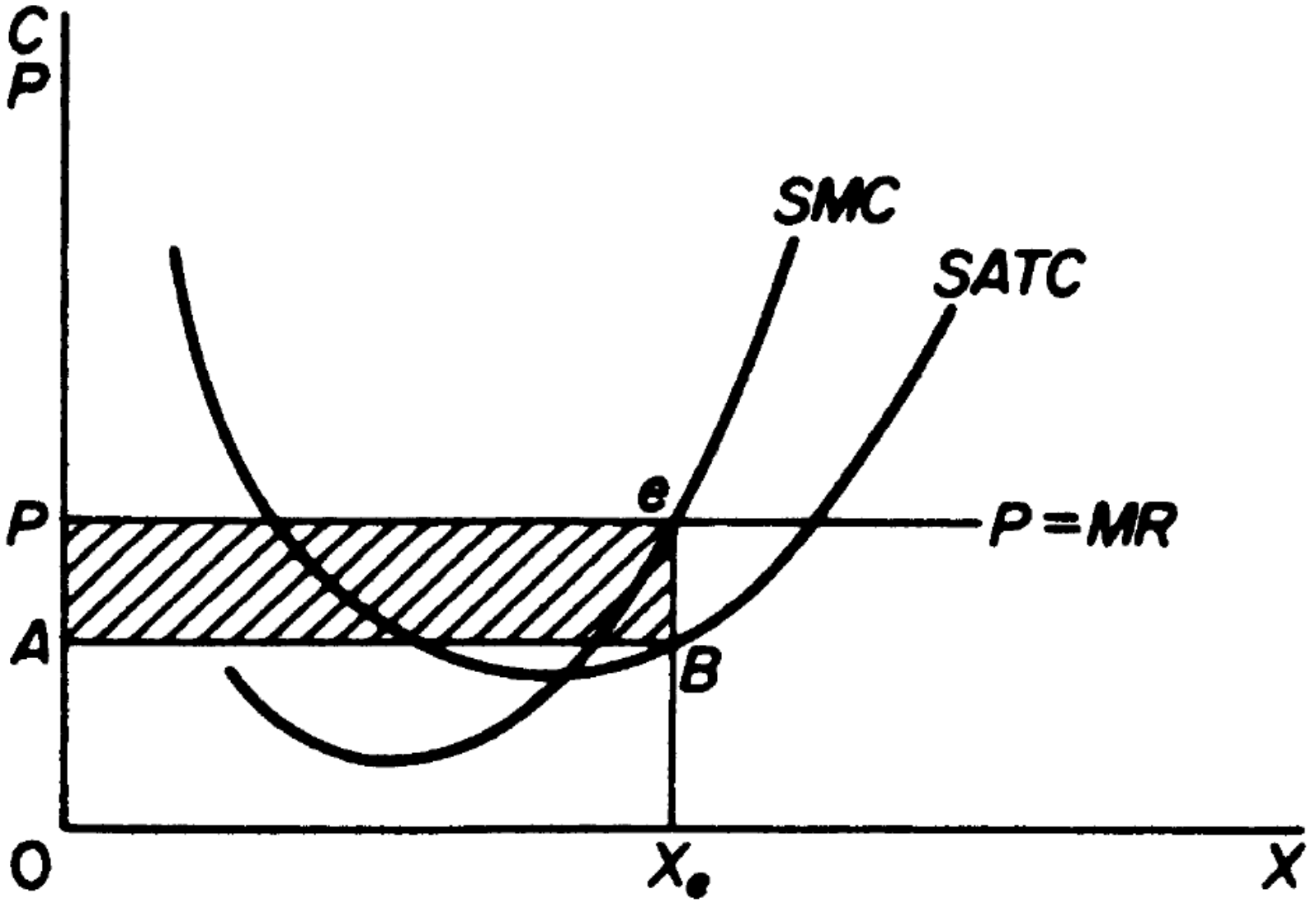
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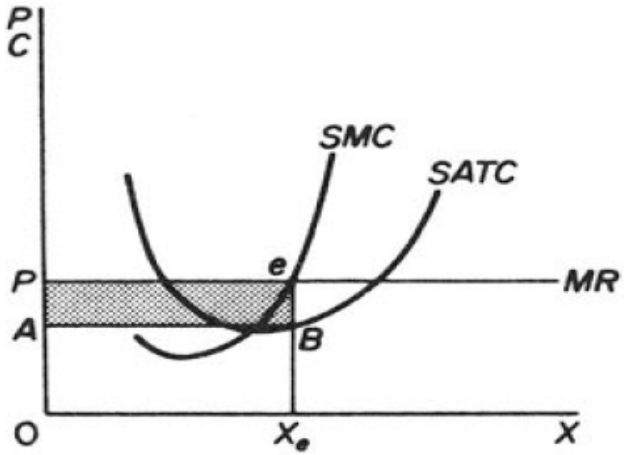
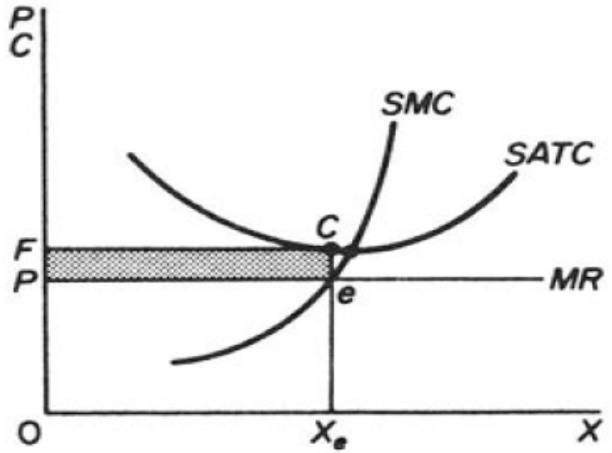


Figure 5.5



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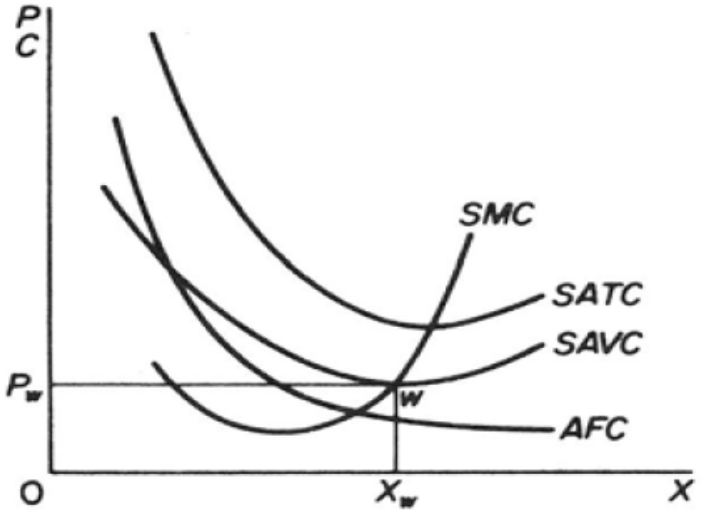
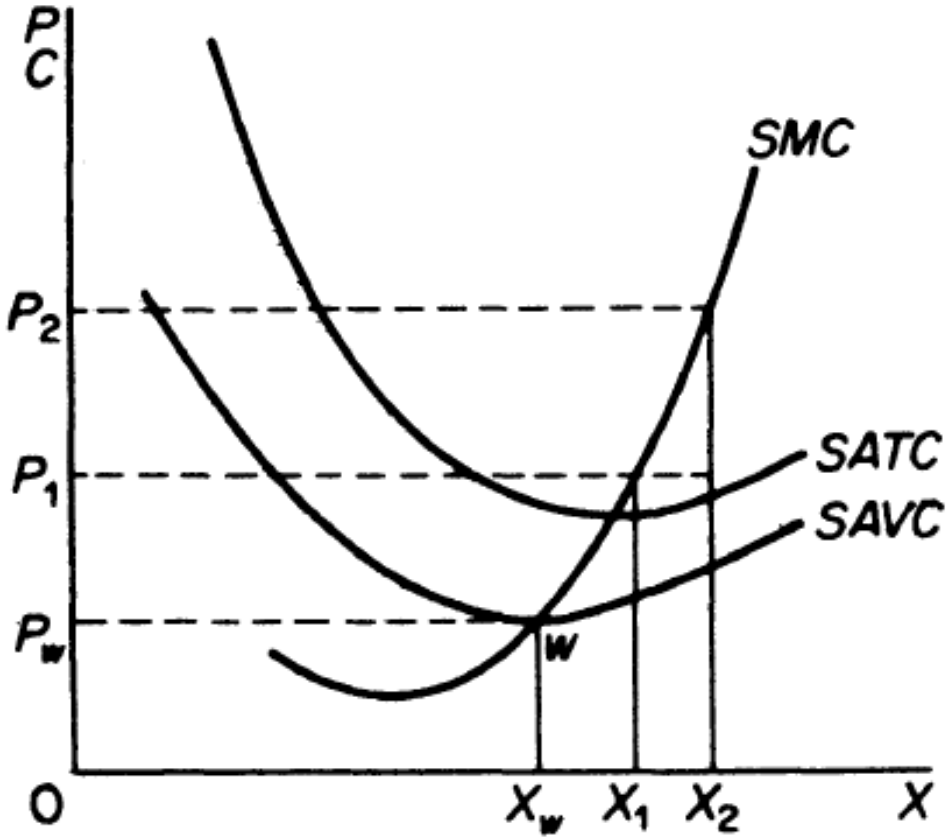
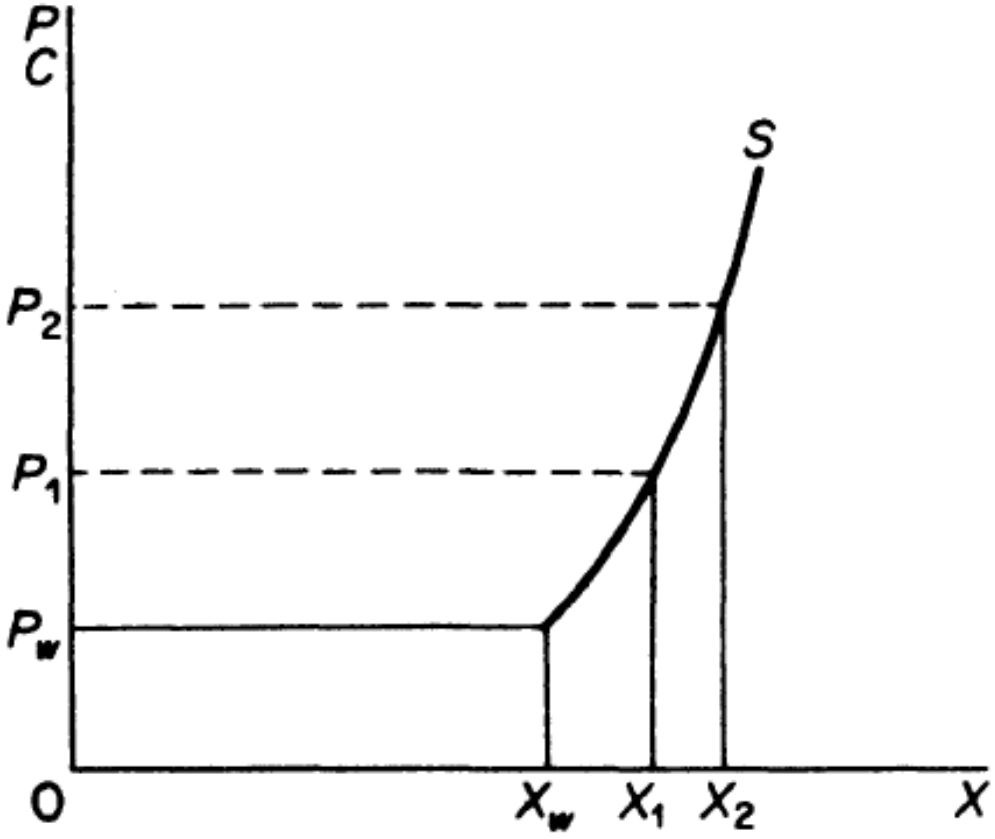


- The fact that a firm is in (short-run) equilibrium does not necessarily mean that it makes excess profits. Whether the firm makes excess profits or losses depends on the level of the *A TC* at the short-run equilibrium. If the *ATC* is below the price at equilibrium the firm earns excess profits.
- If, however, the *ATC* is above the price the firm makes a loss. In the latter case the firm will continue to produce only if it covers its variable costs. Otherwise, it will close down, since by discontinuing its operations, the firm is better off: it minimizes its losses. The point at which the firm covers its variable costs is called 'the closing-down pont’

THE SUPPLY CURVE OF THE FIRM AND THE INDUSTRY





SHORT-RUN EQUILIBRIUM OF THE INDUSTRY

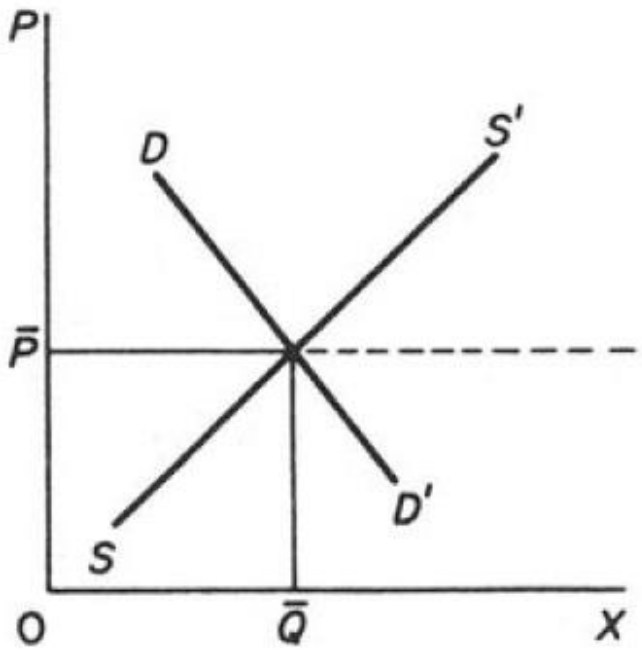


Figure 5.10 Short-run industry equilibrium

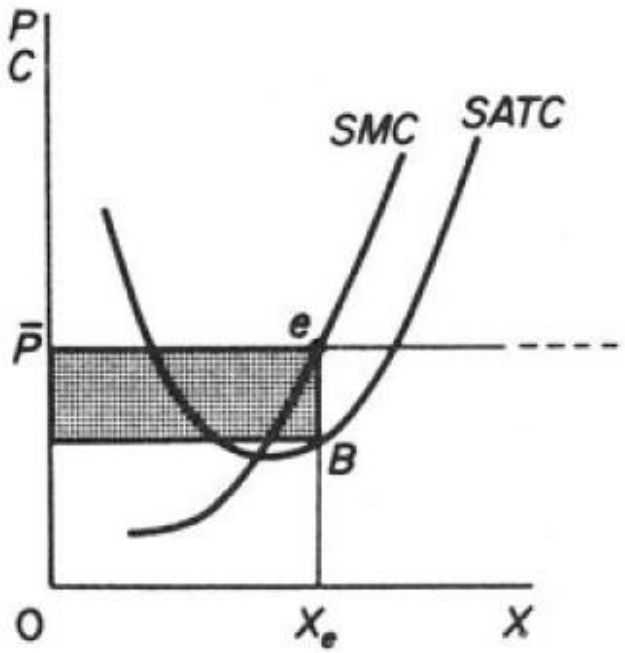


Figure 5.11 Short-run equilibrium of a firm (excess profits)

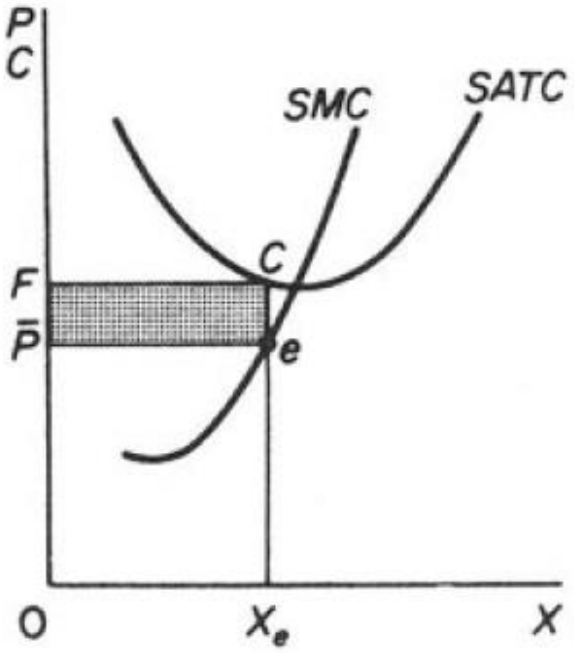


Figure 5.12 Short-run equilibrium of a firm (losses)

Long-run Equilibrium

- In the long run firms are in equilibrium when they have adjusted their plant so as to produce at the minimum point of their long-run *AC* curve, which is tangent (at this point) to the demand curve defined by the market price. In the long run the firms will be earning just normal profits, which are included in the *LAC*.
- If they are making excess profits new firms will be attracted in the industry; this will lead to a fall in price (a downward shift in the individual demand curves) and an upward shift of the cost curves due to the increase of the prices of factors as the industry expands. These changes will continue until the *LAC* is tangent to the demand curve defined by the market price.
- If the firms make losses in the long run they will leave the industry, price will rise and costs may fall as the industry contracts, until the remaining

Condition for Long-run Equilibrium

- The condition for the long-run equilibrium of the firm is that the marginal cost be equal to the price and to the long-run average cost

$$LMC = LAC = P = AR = MR$$

- The firm adjusts its plant size so as to produce that level of output at which the *LAC* is the minimum possible, given the technology and the prices of factors of production. At equilibrium the short-run marginal cost is equal to the long-run marginal cost and the short-run average cost is equal to the long-run average cost. Thus, given the above equilibrium condition, we have

$$SMC = LMC = LAC = LMC = P = MR$$

- This implies that at the minimum point of the *LAC* the corresponding (short-run) plant is worked at its optimal capacity, so that the minima of the *LAC* and *SAC* coincide. On the other hand, the *LMC* cuts the *LAC* at its minimum point and the *SMC* cuts the *SAC* at its minimum point. Thus at the minimum point of the *LAC* the above equality between short-run and long-run costs is satisfied.

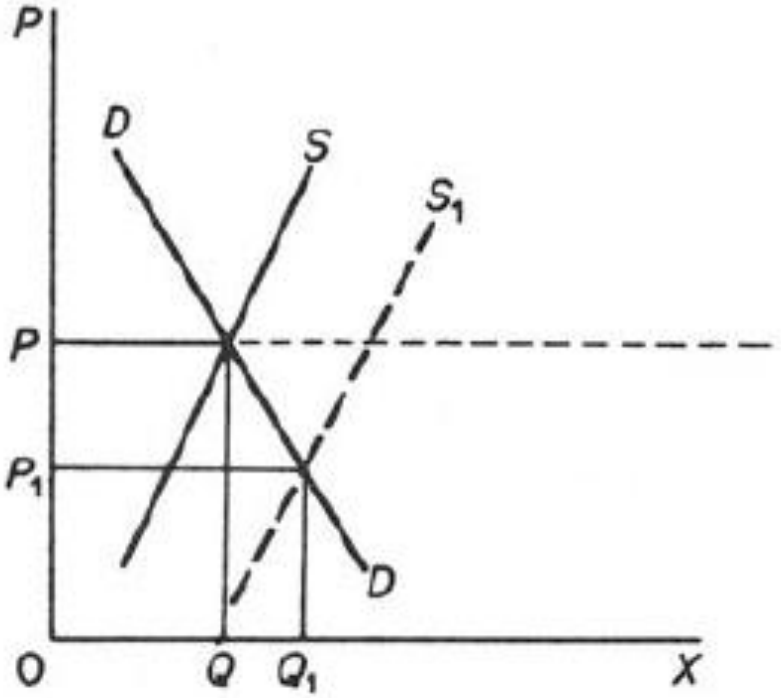


Figure 5.13

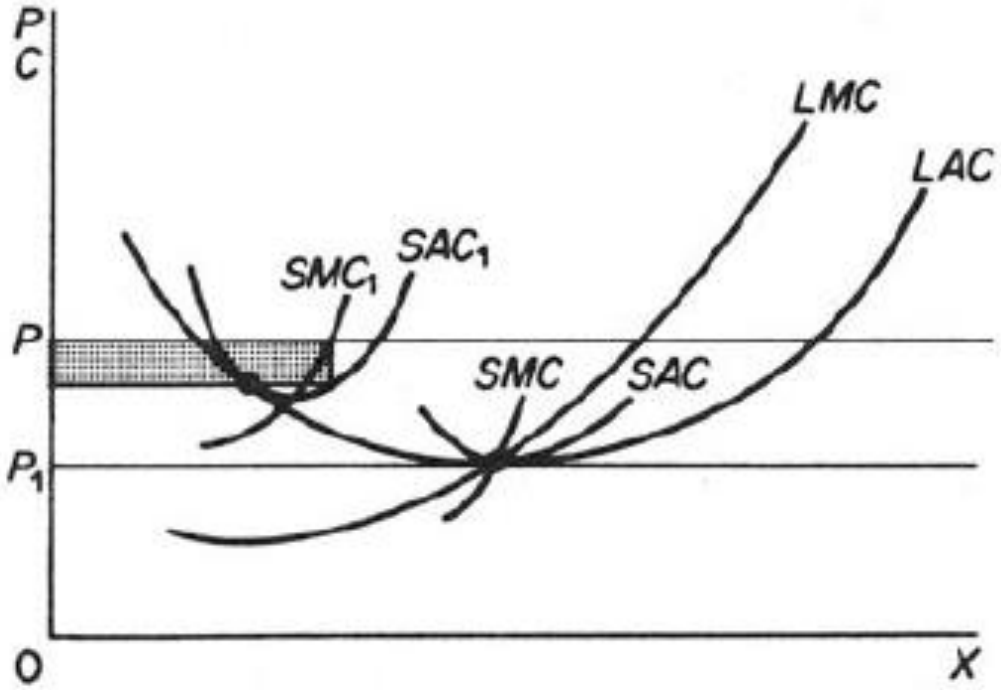
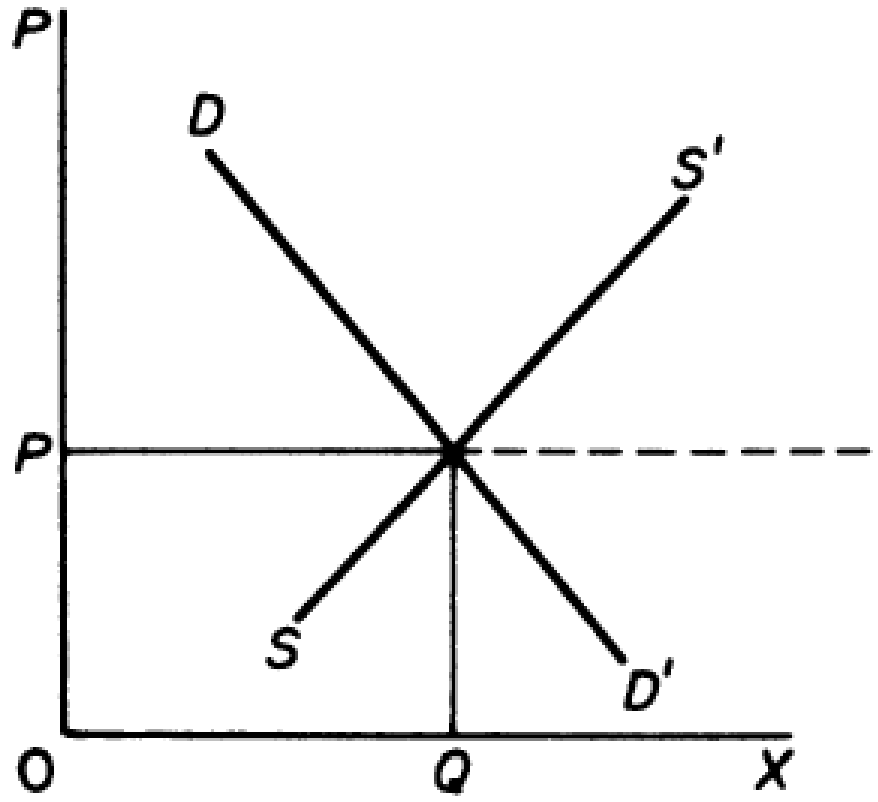


Figure 5.14

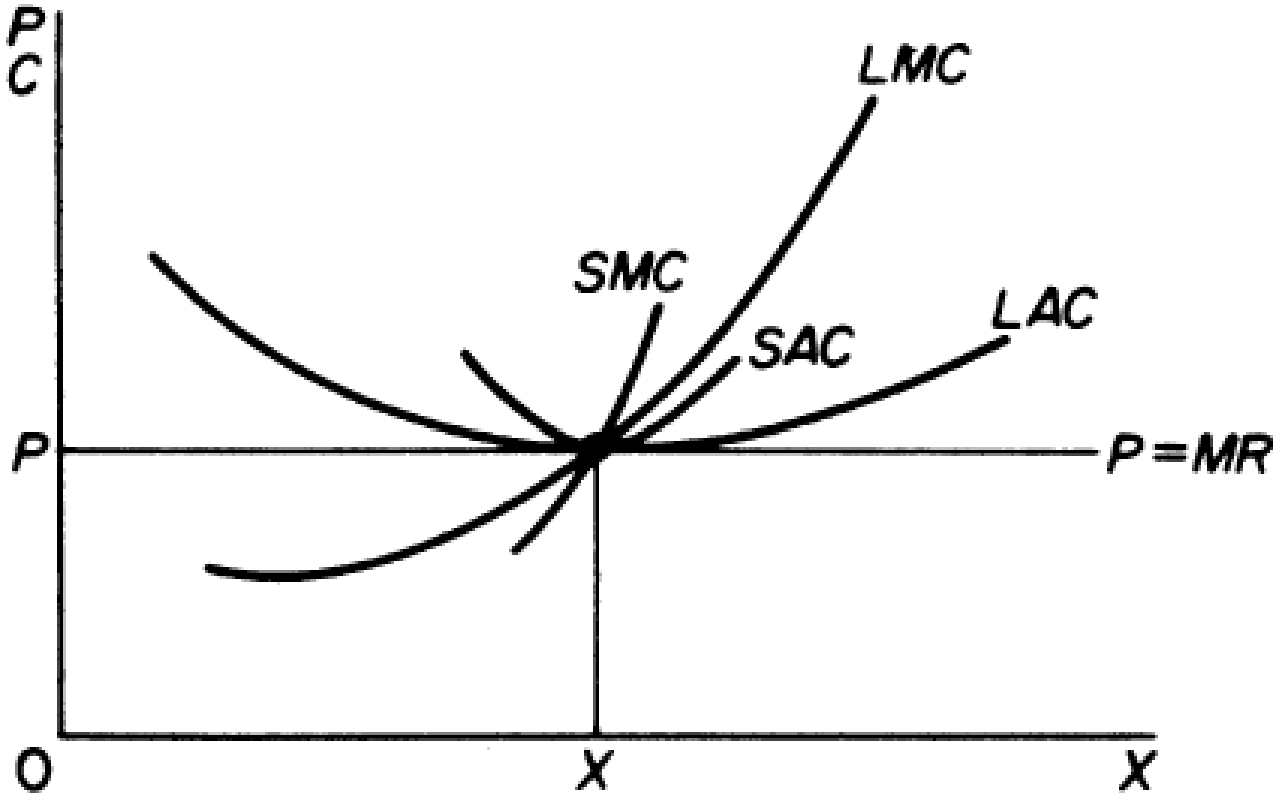
EQUILIBRIUM OF THE INDUSTRY IN THE LONG RUN

- The industry is in long-run equilibrium when a price is reached at which all firms are in equilibrium (producing at the minimum point of their *LAC* curve and making just normal profits). Under these conditions there is no further entry or exit of firms in the industry, given the technology ;md factor prices. The firm is in equilibrium because at the level of output *X*

$$LMC = SMC = P = MR$$



Industry



Firm

Monopoly Competition

- Monopoly is a market structure in which there is a single seller, there are no close substitutes for the commodity it produces and there are barriers to entry.

The main causes that lead to monopoly are the following.

- Firstly, ownership of strategic raw materials, or exclusive knowledge of production techniques.
- Secondly, patent rights for a product or for a production process.
- Thirdly, government licensing or the imposition of foreign trade barriers to exclude foreign competitors.

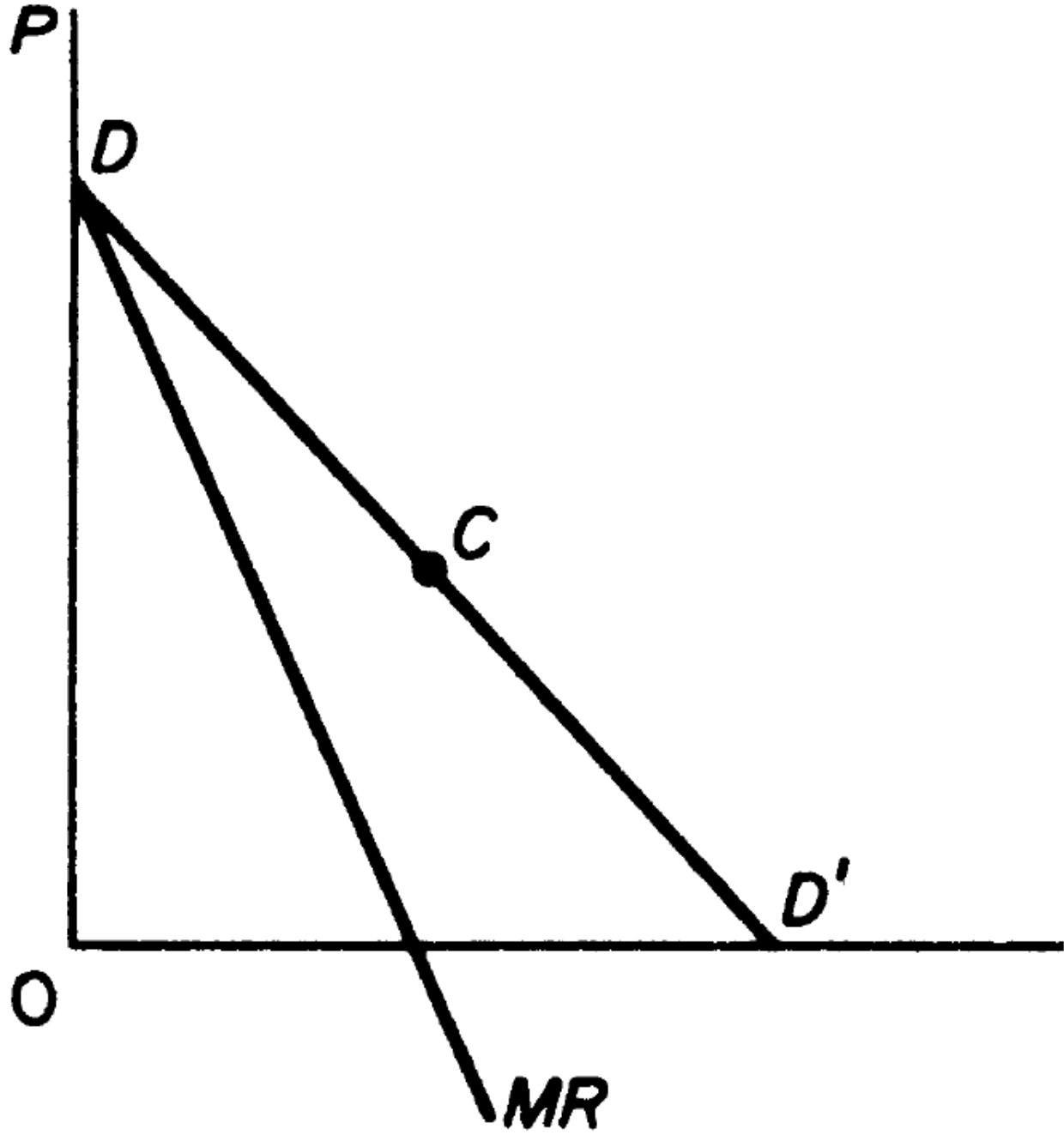
Causes

- Fourthly, the size of the market may be such as not to support more than one plant of optimal size. The technology may be such as to exhibit substantial economies of scale, which require only a single plant, if they are to be fully reaped. For example, in transport, electricity, communications, there are substantial economies which can be realised only at large scales of output. The size of the market may not allow the existence of more than a single large plant. In these conditions it is said that the market creates a 'natural' monopoly, and it is usually the case that the government undertakes the production of the commodity or of the service so as to avoid exploitation of the consumers. This is the case of the public utilities.

- Fifthly, the existing firm adopts a limit-pricing policy, that is, a pricing policy aiming at the prevention of new entry. Such a pricing policy may be combined with other policies such as heavy advertising or continuous product differentiation, which render entry unattractive. This is the case of monopoly established by creating barriers to new competition

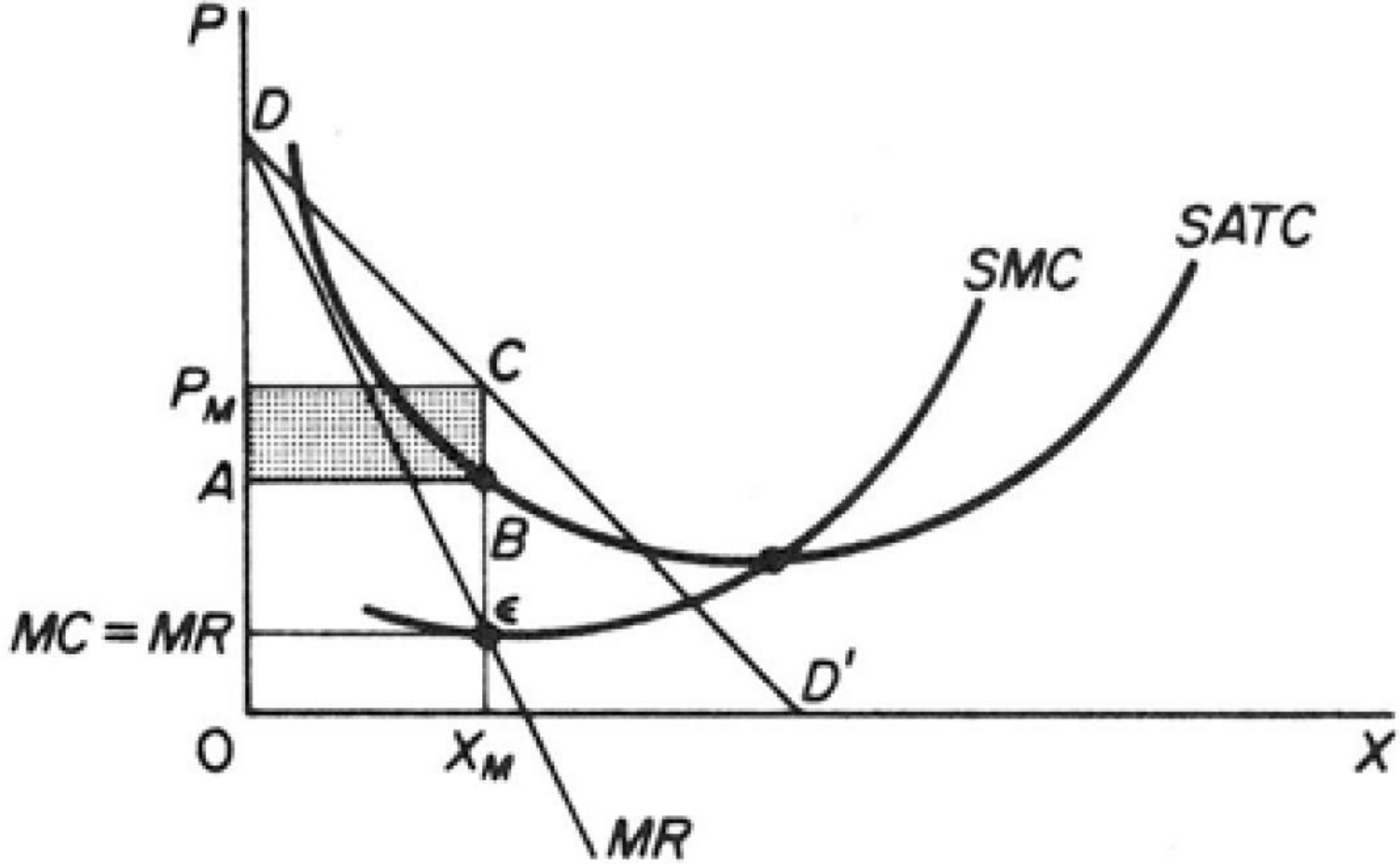
DEMAND AND REVENUE

- Since there is a single firm in the industry, the firm's demand curve is the industrydemand curve. This curve is assumed known and has a downward slope.



SHORT-RUN EQUILIBRIUM

- The monopolist maximises 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 *M R* at the point of intersection.
- 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 *M R*, 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 maximisation of the monopolist's profit is the equality of his *MC* and the *MR*, provided that the *MC* cuts the *MR* from below.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No unique supply curve

- 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.
- Similarly, given the *MC* of the monopolist, various quantities may be supplied at any one price, depending on the market demand and the corresponding *M R* curve.

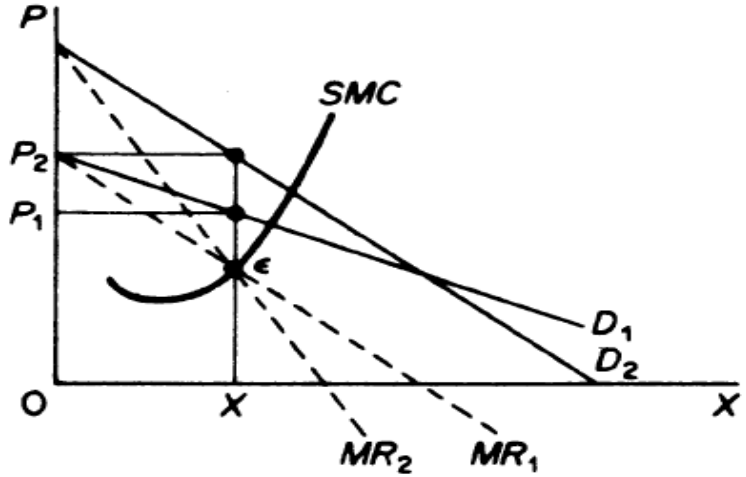


Figure 6.3

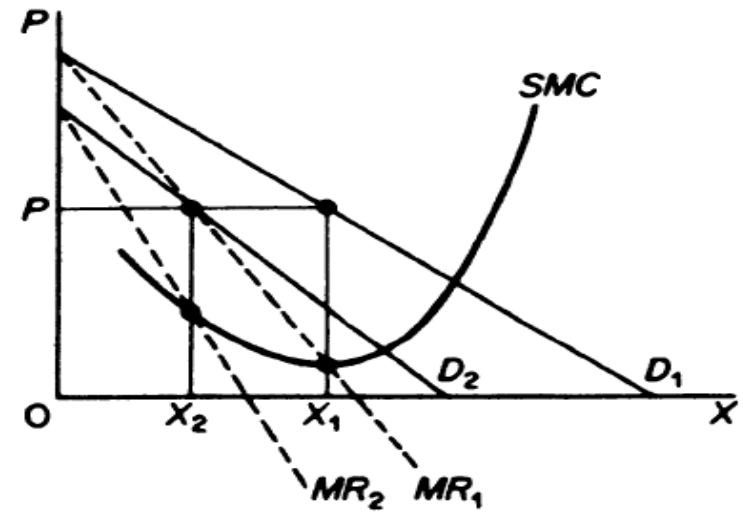
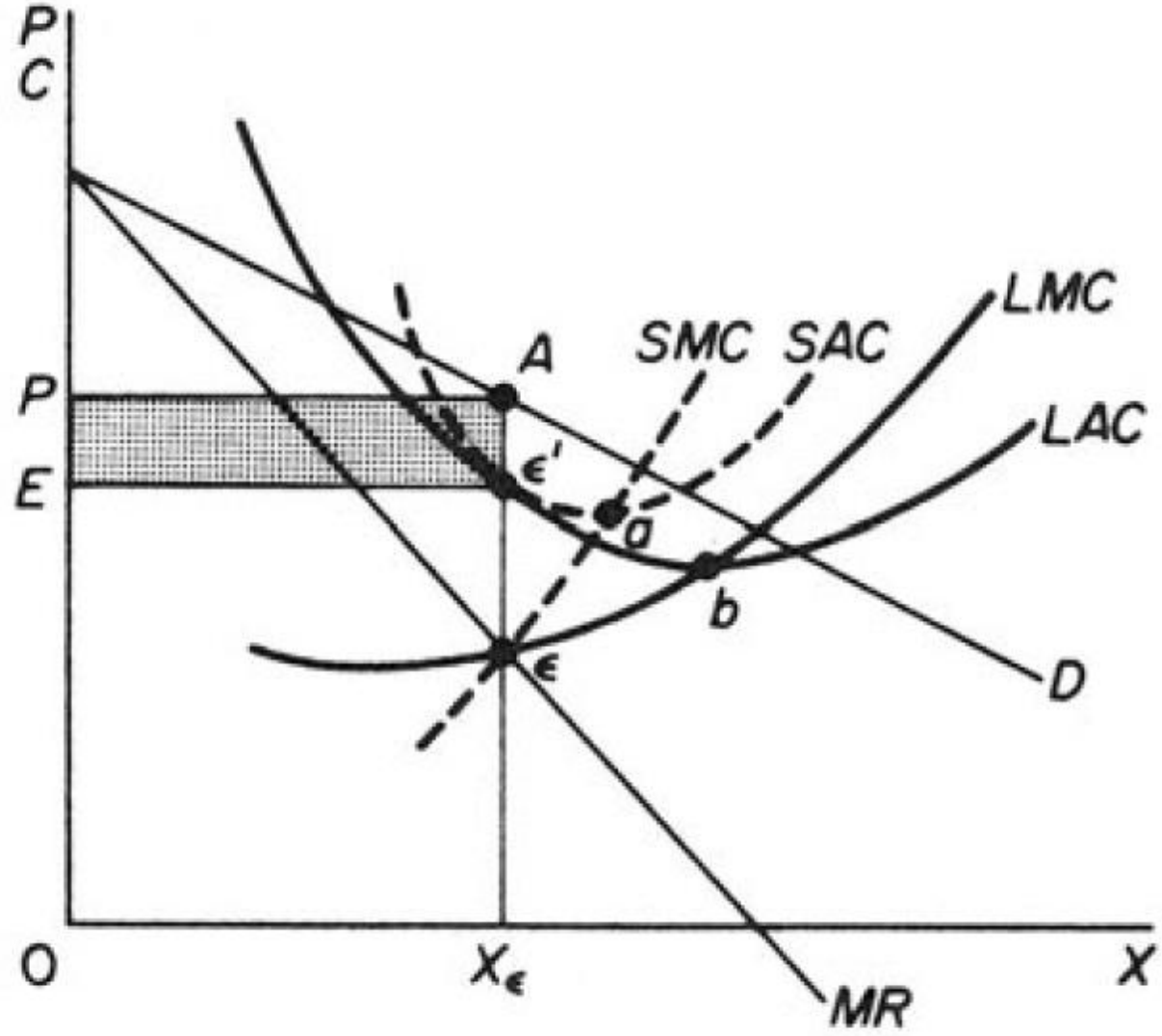


Figure 6.4

Lon-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 maximise 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.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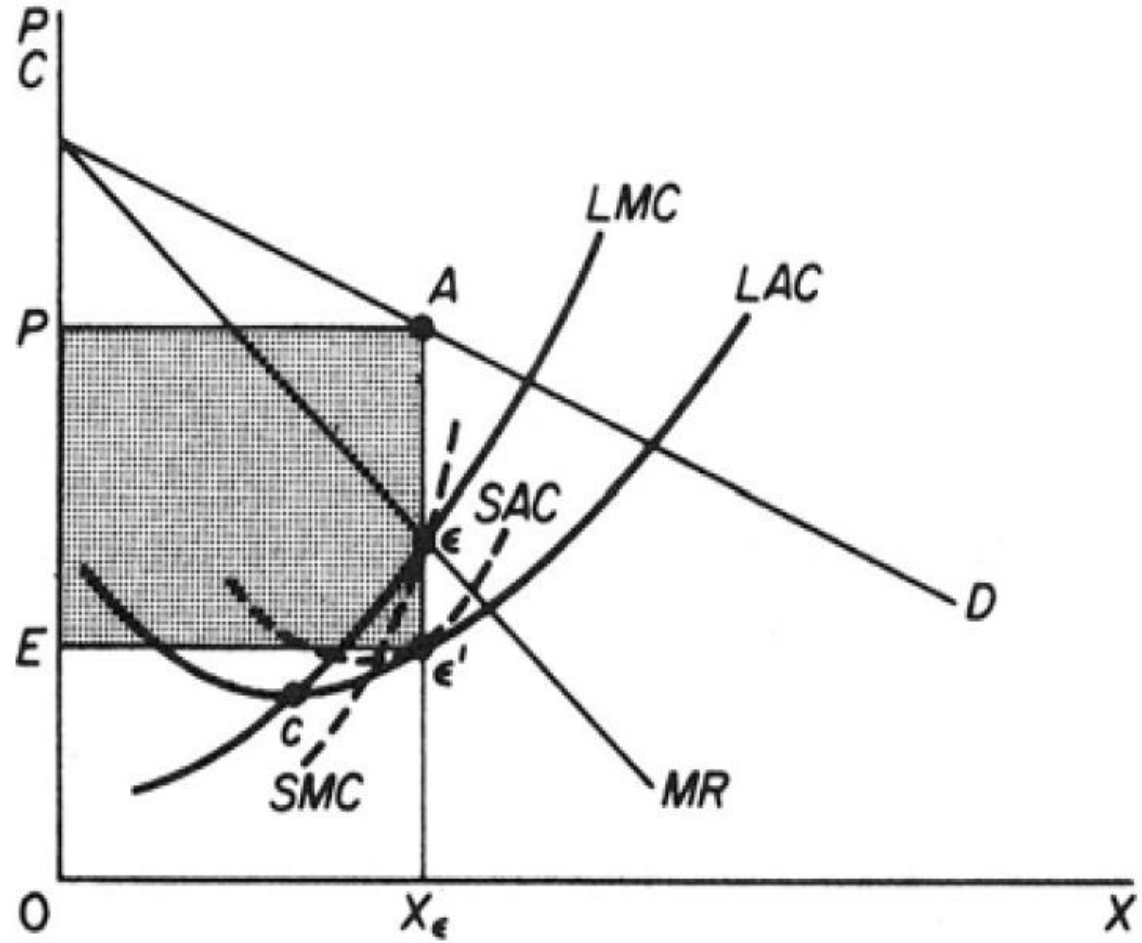
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