

**JIMMA UNIVERSITY
COLLEGE OF BUSINESS AND
ECONOMICS
ECONOMICS DEPARTMENT**



INTRODUCTION TO ECONOMICS

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CHAPTER FIVE

5. MARKET STRUCTURE

Introduction

This chapter discusses how a particular firm makes a decision to achieve its profit maximization objective. A firm's decision to achieve this goal is dependent on the type of market in which it operates. To this effect we distinguish between four major types of markets: perfectly competitive market, monopolistically competitive market, oligopolistic market, and pure monopoly market.

5.1. Perfectly competitive market

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

5.2.1 Assumptions of perfectly competitive market

- **Large number of sellers and buyers:**

Under perfect competition the number of sellers and buyers are assumed to be too large that the share of each sellers in total supply and the share of each buyers in the total demand are too small. Therefore, no single sellers can influence the market price by changing the quantity supply. As well as, no single buyers can influence the total demand by changing their individual demand for the product.

Therefore, in such a market structure, sellers and buyers are not price makers rather they are price takers, i.e., the price is determined by the interaction of the market supply and demand forces.

- **Homogeneous product:**

Homogeneity of the product implies that buyers do not distinguish between products supplied by the various firms of an industry. Product of each firm is regarded as a perfect substitute for the products of other firms. Therefore, no firm can gain any competitive advantage over the other firm.

- **Perfect mobility of factors of production:**

Factors of production are free to move from one firm to another throughout the economy. This means that labour can move from one job to another and from one region to another. Capital, raw materials, and other factors are not monopolized.

- **Free entry and exit:**

There is no restriction or market barrier on entry of new firms to the industry, and no restriction on exit of firms from the industry. A firm may enter the industry or quit it on its accord.

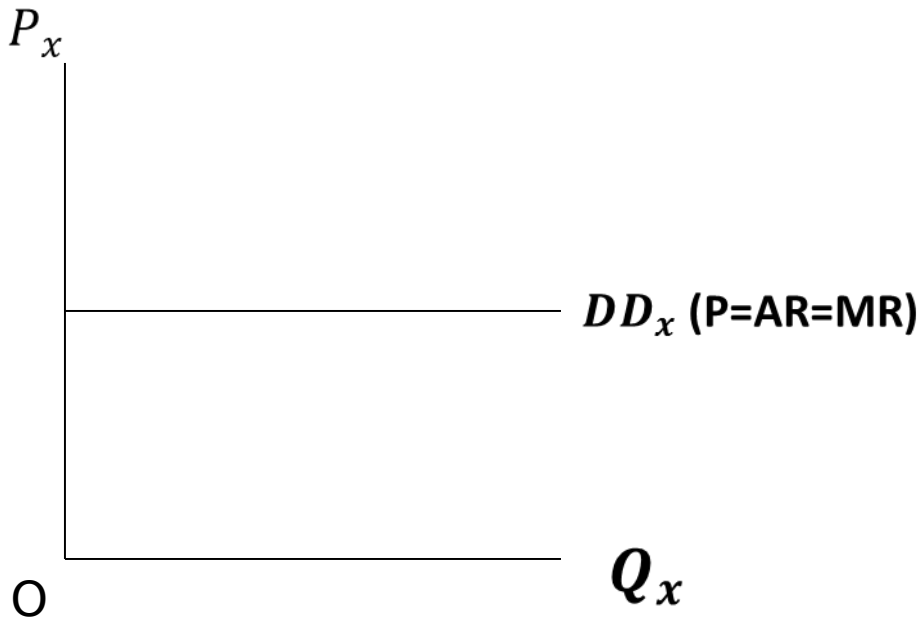
- **Perfect knowledge about market conditions:**

All the buyers and sellers have full information regarding the prevailing and future prices and availability of the commodity.

- **No government interference:**

Government does not interfere in any way with the functioning of the market. There are no discriminator taxes or subsidies, no allocation of inputs by the procurement, or any kind of direct or indirect control. That is, the government follows the free enterprise policy.

From these assumptions, a single producer under perfectly competitive market is a **price-taker**. So they are faced with **perfectly elastic demand curve**. P_x



5.2.2 Short run equilibrium of the firm

The main objective of a firm is profit maximization. **Profit** is the difference between total revenue and total cost.

Total Revenue (TR): it is the total amount of money a firm receives from a given quantity of its product sold. It is obtained by multiplying the unit price of the commodity and the quantity of that product sold.

TR=P X Q, where P = price of the product

Q = quantity of the product sold.

Average revenue (AR):- it is the revenue per unit of item sold. It is calculated by dividing the total revenue by the amount of the product sold.

$$AR = \frac{TR}{Q} = \frac{P * Q}{Q} \longrightarrow AR = P$$

Therefore, the firm's demand curve is also the average revenue curve.

Marginal Revenue: it is the additional amount of money/ revenue the firm receives by selling one more unit of the product. In other words, it is the change in total revenue resulting from the sale of an extra unit of the product.

$$MR = \frac{dTR}{dQ} = \frac{d(PQ)}{dQ} = P$$

$$\frac{dQ}{dQ} = P$$

$$\frac{dQ}{dQ}$$

Thus, $\frac{dQ}{P} = MR$ in a perfectly competitive market, a firm's average revenue, marginal revenue and price of the product are equal, i.e. **$AR = MR = P = DD_X$**

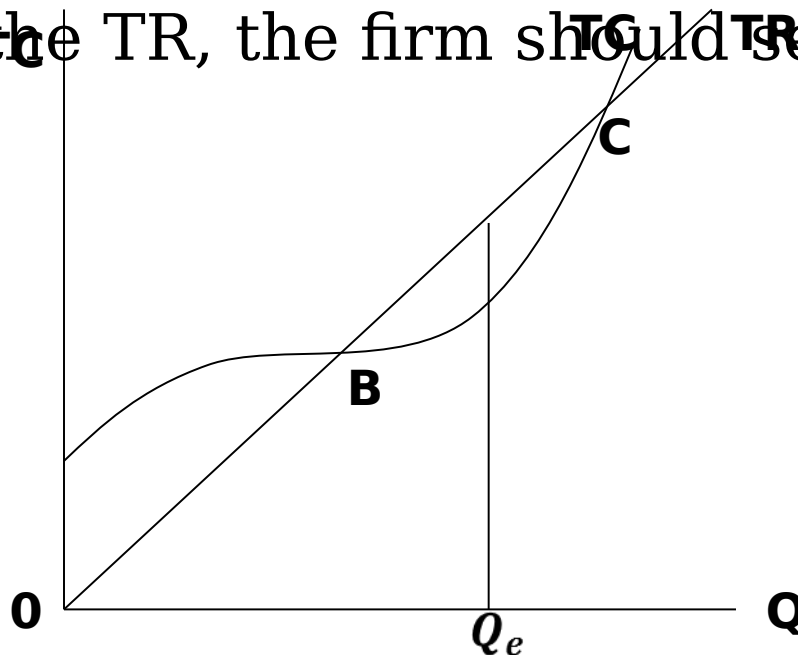
Since the purely competitive firm is a price taker, it will maximize its economic profit only by adjusting its *output*. In the short run, the firm has a fixed plant. Thus, it can adjust its output only through changes in the amount of variable resources. It adjusts its variable resources to achieve the output level that

The level of output which maximizes the profit of the firm can be obtained in two ways:

➤ **Total approach and Marginal approach**

The total approach:

Total profits are maximized when the positive difference between total revenues and costs is largest. The **TR** is linear and depends on the level of output since market price is constant. Thus to increase **TR**, the firm should sell **large quantity**.

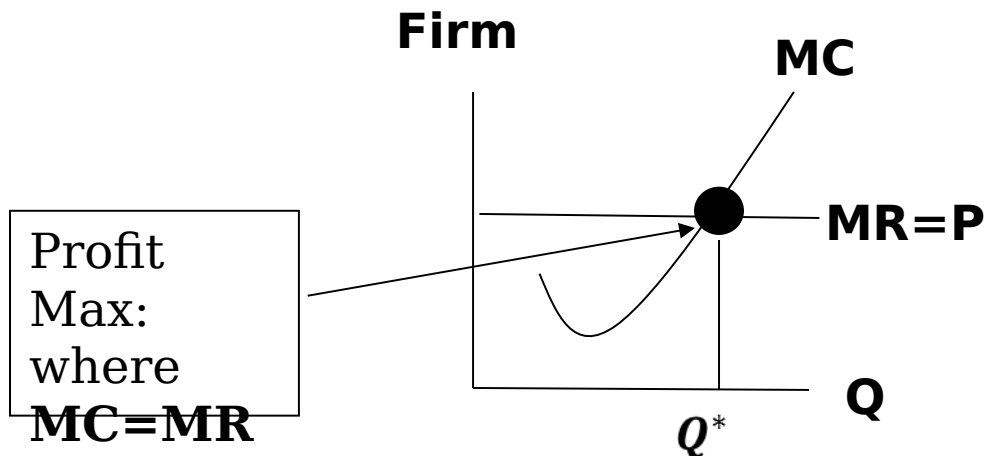


To the left of point **B** and to the right of **C**, the short run TC is greater than short run TR (**STC > STR**) so that the firm is in a loss (**negative II**). Between B and C, however, the firm is enjoying a positive profit and it is maximized at the point where the vertical difference between the **STR** and **STC** is largest (at Q_e). Point **B** is the **break-even point** where the firm just covers its costs. The marginal approach operates at zero economic profit.

In the short run, the firm will maximize profit or minimize loss by producing the output at which marginal revenue equals marginal cost. More specifically, the perfectly competitive firm maximizes its short-run total profits at the output when the following two conditions are met:

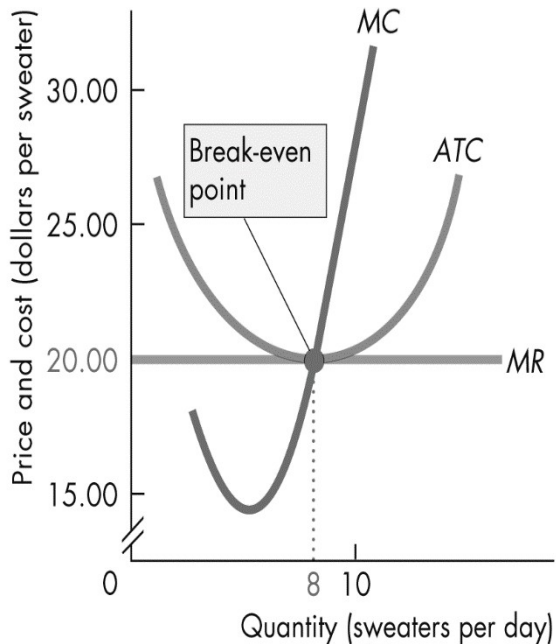
- **$MR = MC$**
- ***The slope of MC is greater than slope of MR; or MC is rising***. (that is, slope of MC is greater than zero since the slope of MR is zero.).

$$\frac{dMC}{dQ} > \frac{dMR}{dQ} \text{ or } \frac{dMR}{dQ} - \frac{dMC}{dQ} < 0$$

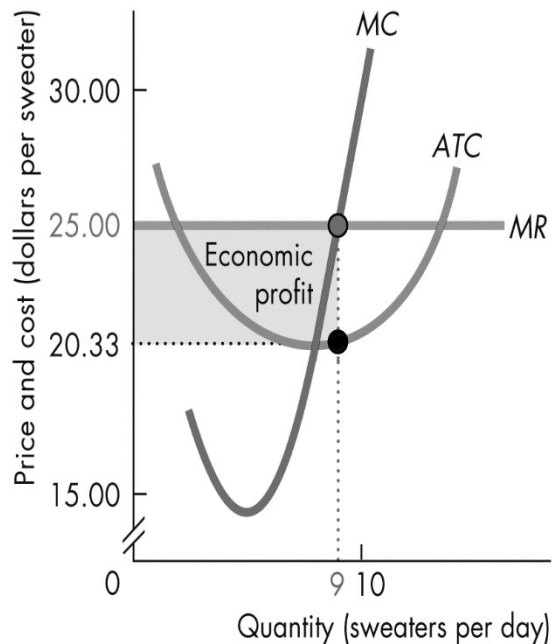


Whether the firm in the **short-run** gets **positive or zero or negative** profit depends on the **level of ATC at equilibrium**. Thus, depending on the relationship between price and ATC, the firm in the short-run may **earn economic profit, normal**

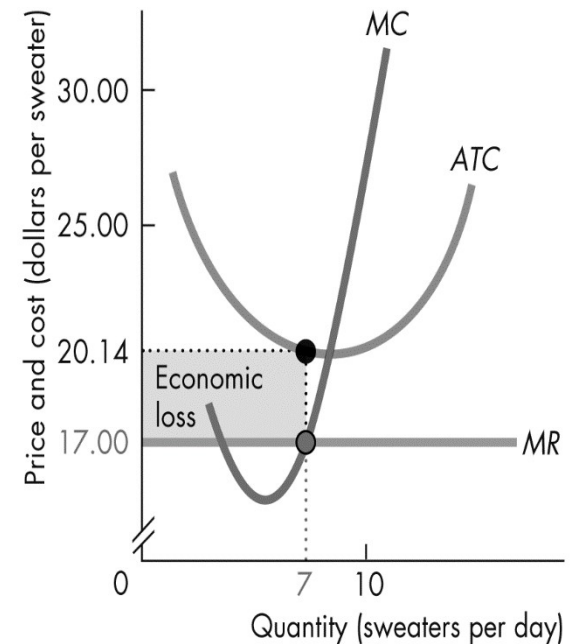
FIGURE 11.4 Three Possible Profit Outcomes in the Short Run



(a) Normal profit



(b) Economic profit



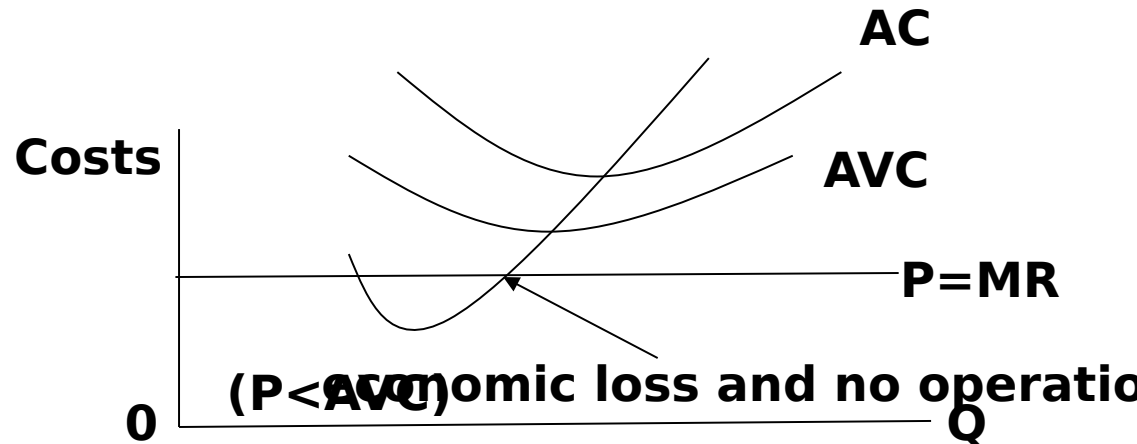
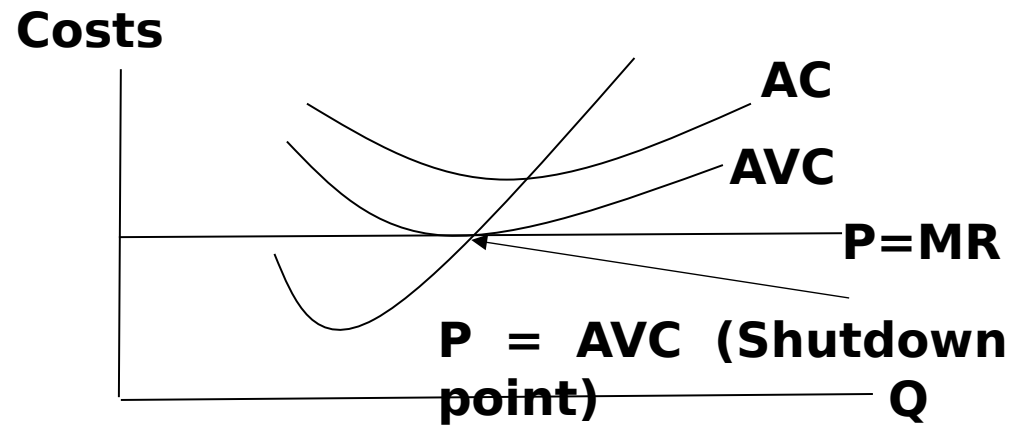
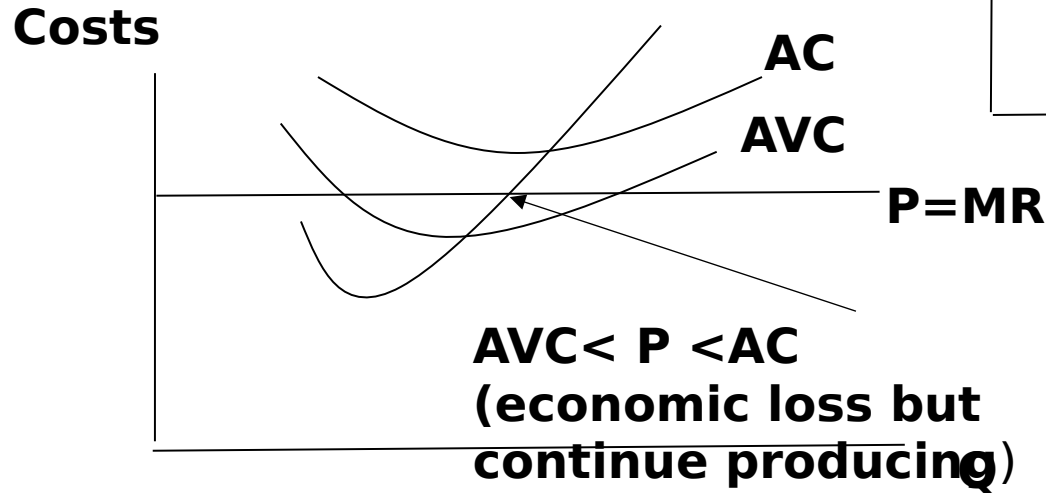
(c) Economic loss

As in Figure 11.4a above, if the market price equals the firm's *ATC*, the firm earns zero economic profit (a normal profit).

b) As in Figure 11.4b, if the market price is greater than the firm's *ATC*, the firm earns a positive economic profit.

c) As in Figure 11.4c, if the market price is less than the firm's *ATC*, the firm incurs an economic loss, which means economic profit is negative.

The firm will **not stop production** simply because *AC* exceeds price in the short-run. The firm will continue to produce irrespective of the existing loss as far as the price is sufficient to cover the average variable costs. The following graphs explain about the relationship between ***AVC* and *P***:



EXERCISE

Suppose that the firm operates in a perfectly competitive market. The **market price** of his product is **10 birr**. The firm estimates its cost of production with the following **cost function**:

$$TC = 2 + 10q - 4q^2 + q^3$$

- What level of output should the firm produce to maximize its profit?
- Determine the level of profit at **equilibrium**.
- What **minimum price** is required by the firm to stay in the market?

5.2.3 Short run equilibrium of the industry

The firm operates at different points at the marginal cost curve depending on the level of price it faces. Thus, its supply curve is its MC curve. The industry supply curve is the simple horizontal summation of the supply curves of the individual firms. Thus, the industry is at equilibrium when the industry demand curve intersects the industry supply curve.

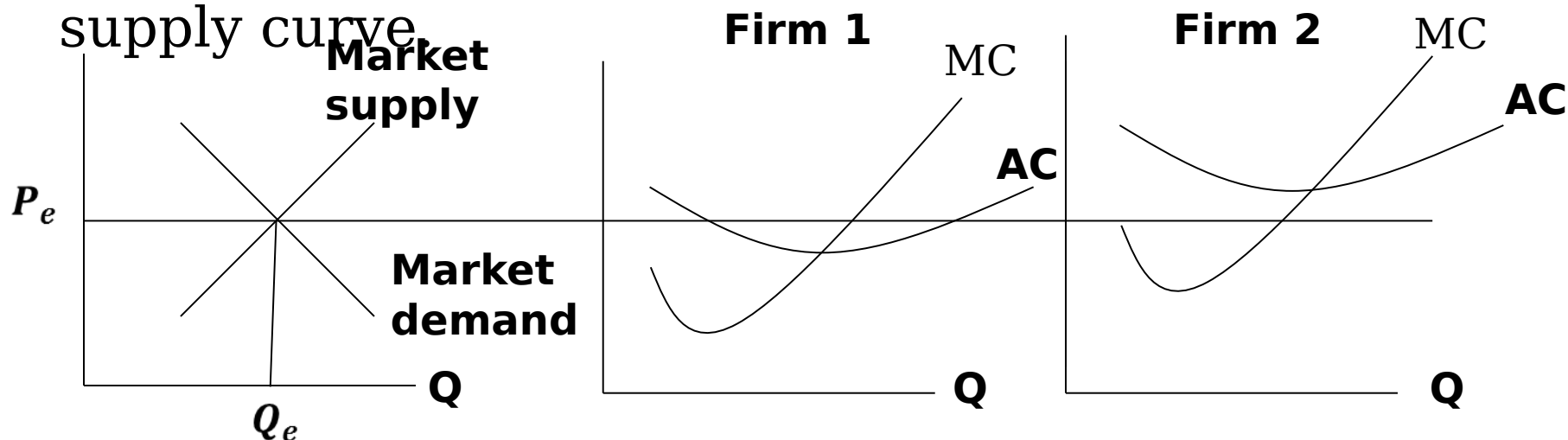


Figure 5.4

The above **figure 5.4** shows short run equilibrium of the industry. Short run equilibrium of the industry is defined by the intersection of the market demand and the industry supply Curve. **At equilibrium price, P_e firm 1 gets a positive profit** because the average cost of the firm at equilibrium is less than the market Price, p_e . On the other hand, **firm 2 is incurring a loss** as its **average cost** is higher than **the market price**. At the prevailing equilibrium price firms are making **excess profits (firm 1) or losses (firm 2)**.

5.3. Monopoly market

5.3.1.

Definition

and

characteristics

Pure monopoly exists when a single firm is the only producer of a product for which there are no close substitutes. The main characteristics of this market structure include:

- **Single seller:** A pure or absolute monopoly is a one firm industry. A single firm is the only producer of a specific product or the sole supplier of the product; the firm and the industry are synonymous.
- **No close substitutes:** the monopolist's product is unique in that there are no good or close substitutes. From the buyer's view point, there are no reasonable alternatives.
- **Price maker:** the individual firm exercises a considerable control over price because it is the only supplier of production in the market. Thus, an individual firm is confronted with the usual **downward sloping demand curve** for its product, the monopolist can change product price by changing the quantity of the product supplied.

- **Blocked entry:** A pure monopolist has no immediate competitors because there are barriers, which keep potential competitors from entering in to the industry. These barriers may be economic, legal, technological etc. Under conditions of pure monopoly, entry is

5.3.2. Sources of monopoly

The emergence and survival of monopoly is attributed to the factors which prevent the entry of other firms in to the industry. The barriers to entry are therefore the sources of monopoly power. The

- **Legal restriction:** Some monopolies are created by law in public interest. Such monopoly may be created in both public and private sectors. Most of the state monopolies in the public utility sector, including postal service, telegraph, telephone services, radio and TV services, generation and distribution of electricity, rail ways, airlines etc.

- **Control over key raw materials:** Some firms acquire monopoly power from their traditional control over certain scarce and key raw materials that are essential for the production of certain other goods. For example, **Aluminum** Company of America had monopolized the aluminum industry because it had acquired control over almost all sources of bauxite supply; such monopolies are **efficiently raw material monopolies**.
- **Efficiency:** a primary and technical reason for growth of monopolies is economies of scale. The most efficient plant (probably large size firm,) which produces at minimum cost, can eliminate the competitors by curbing down its price for a short period and can acquire monopoly power. Monopolies created through efficiency are known as natural monopolies.

- **Patent rights:** Patent rights are granted by the government to a firm to produce commodity of specified quality and character or to use specified rights to produce the specified commodity or to use the specified technique of production. Such monopolies are called to patent monopolies

5.4 Monopolistically competitive market

This market is characterized by:

- **Differentiated product:** the product produced and supplied by many sellers in the market is similar but not identical in the eyes of the buyers. There is a variety of the same product. The difference could be in style, brand name, in quality, or others. Hence, the differentiation of the product could be real (eg. quality) or fancied (e.g. difference in packing).

- **Many sellers and buyers:** there are many sellers and buyers of the product, but their number is not as large as that of the perfectly competitive market.
- **Easy entry and exit:** like the PCM, there is no barrier on new firms that are willing and able to produce and supply the product in the market. On the other hand, if any firm believes that it is not worth to stay in the business, it may exit.
- **Existence of non-price competition:** Economic rivals take the form of non-price competition in terms of product quality, advertisement, brand name, service to customers, etc. A firm spends money in advertisement to reach the consumers about the relatively unique character of its product and thereby get new buyers and develop brand loyalty. Many retail trade activities such as clothing, shoes, soap, etc are in this type of

5.5. Oligopoly market

This is a market structure characterized by:

- **Few dominant firms:** the number of firms is small enough that each firm recognizes the actions of other firms, implying that firms are mutually interdependent.
- **Entry barrier:** there are considerable obstacles that hinder a new firm from producing and supplying the product. The barriers may include economies of scale, legal, control of strategic inputs, etc.
- **Products may be homogenous or differentiated.** If the product is homogeneous, we have a *pure oligopoly*. If the product is differentiated, it will be a *differentiated oligopoly*.