FOR BBA (Hons)

1. Subject Name : Managerial Economics
2. Semester / Year : Second (Semester-II)
3. Name of the Teacher : Dr. Sudip Ghosh
4. Name of the topic : Short & Long run equilibrium of firm / industry

5. 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.

I. ASSUMPTIONS

The model of *perfect competition* is based on the following assumptions.

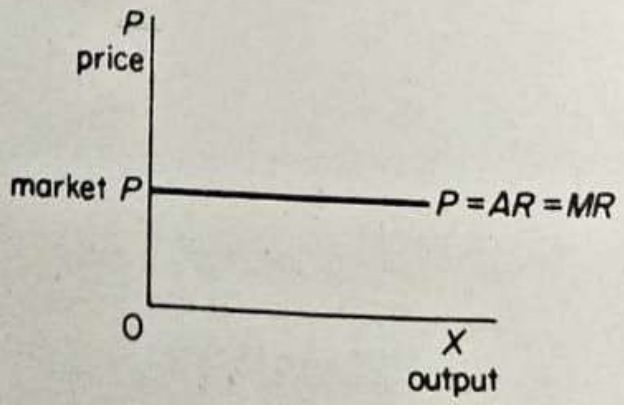
Large numbers of sellers and buyers

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.

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. This is ruled out *ex hypothesi* in perfect competition.

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 (figure 5.1). The demand curve of the individual firm is also its average revenue and its marginal revenue curve (see page 156).

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.

Profit maximisation

The goal of all firms is profit maximisation. No other goals are pursued.

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 monopolised and labour is not unionised. In short, there is perfect competition in the markets of factors of production.

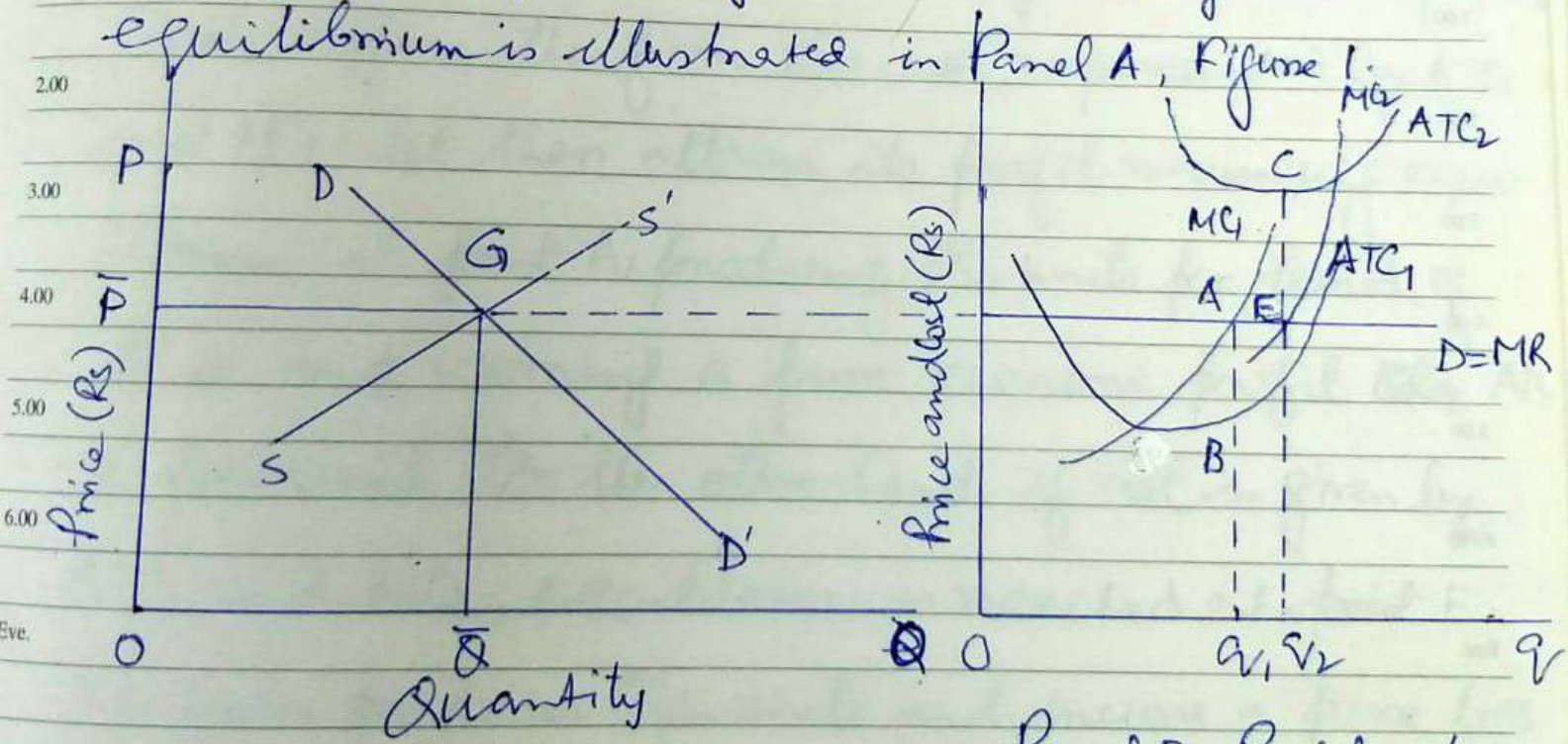
Perfect knowledge

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 under perfect competition

Given the market demand and supply curves, a short-run market price-quantity equilibrium is attained when quantity demanded and quantity supplied are equal. This proposition is so familiar that a proof is not given here, although the equilibrium is illustrated in Panel A, Figure 1.



Panel A: Market price-quantity equilibrium

Panel B: Profit or loss in short-run equilibrium

Figure 1: Short-run equilibrium

DD' is market demand and SS' is market supply. The

price-quantity equilibrium is attained at point G, with equilibrium price $O\bar{P}$ and equilibrium quantities demanded and supplied $O\bar{Q}$.

The market equilibrium price $O\bar{P}$, which establishes the horizontal demand or marginal revenue curve $D=MR$, for a typical firm in the industry, is shown in panel B. First, suppose the firm has cost represented by ATC_1 and MC_1. It then attains its profit-maximising equilibrium at point A, producing OQ_1 units per period of time and earning a pure economic profit AB (₹) per unit. On the other hand, if cost is given by ATC_2 and MC_2, equilibrium is reached at point E. The firm produces OQ_2 units and incurs a pure loss of CE (₹) per unit.

A perfectly competitive firm is merely a quantity adjuster. Price is given by the market; the firm produces the rate of

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output that maximises profit or minimises loss for its established plant. In the short run, no other alternative is available. In the long run, however, there is.

Long-run equilibrium in a perfectly competitive firm

The proposition of long-run equilibrium is inevitable from and embodied in the assumptions of profit maximisation and free entry. Each firm strives to achieve the maximum possible profit. In the short run a firm in perfect competition can do nothing more than adjust its output so that marginal cost equals price. In the long run, it can adjust the size of its plant and it can select the industry in which it operates — both with an eye to profit.

The long-run equilibrium of a firm in a perfectly competitive industry is explained by means of figure 2.

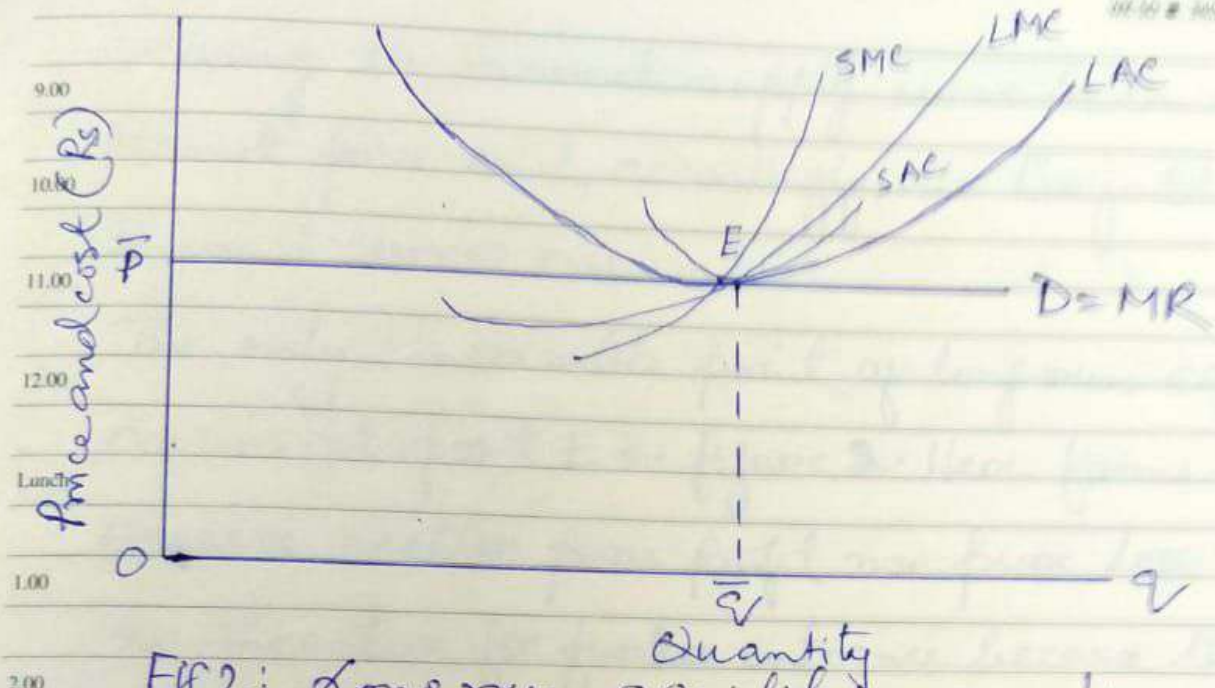

Fig 2: Long run equilibrium of a firm in a perfectly competitive industry

If price is above the level of $O\bar{P}$, each established firm in the industry earns a pure profit. New firms are attracted into the industry, shifting the market supply curve to the right. Market equilibrium price declines, and the horizontal demand curve confronting each firm falls to ~~the~~ a lower level. On the other hand, if price is below $O\bar{P}$, each firm in the industry incurs a pure economic loss. As their plants and equipments depreciate, some firms will leave the industry, thereby

causing the market supply curve to the left. Market price and, accordingly, the horizontal individual demand curves rise.

The only conceivable point of long-run equilibrium occurs at point E in Figure 2. Here firms in the industry receive neither pure profit nor pure loss. There is no incentive for further entrance because the rate of return in the industry is the same as in the best alternative. But for the same reason there is no incentive for a firm to leave the industry. The number of firms stabilises, each firm with a short-run plant represented by SAC and SMC.

The position of ~~xxxxx~~ long-run equilibrium is actually determined by horizontal demand curve confronting each firm. Since the industry is perfectly competitive by assumption, firms will enter or leave the industry if there is either pure profit or pure loss. Therefore,

since the position of long-run equilibrium must be consistent with zero profit (and zero loss), it is necessary that price equal average total cost. For a firm to attain its individual equilibrium, price must be equal to marginal cost. Therefore, price must equal both marginal and average total cost. This can only occur at the point where average total cost and marginal cost are equal, or at the point of minimum average cost.

The statement, so far, could conceivably apply to any SAC and SMC. However, unless it applies only to the short-run plant then coincides with the minimum long-run average cost, a change in plant size would lead to the appearance of pure profits, and the wheels of adjustment would be set in motion again. These arguments establish the following:

Proposition: Long-run equilibrium for a firm in ~~perfectly~~

perfect competition occurs at the point where price equals minimum long-run average cost. At this point total minimum short-run average cost, and the short-run and long-run marginal costs are equal. The position of long-run equilibrium is characterised by a "no profit" situation - the firms have neither a pure profit nor a pure loss, only an accounting profit equal to the rate of return obtainable in other perfectly competitive industries.