

Laxmi Narain Dubey College, Motihari

(a constituent unit of B.R.A. Bihar University, Muz.)

NAAC Accredited 'B+'

Department of Economics

Topic: PROFIT THEORIES

Paper-I: MICROECONOMICS

Part-I

B.A. (Hons.)

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PROFIT THEORIES

Profit maximisation is undoubtedly a crucial objective for a business firm. The theories of profit propounded by economists over time are relevant for understanding the determinants of profit.

The various profit theories that have emerged over time are:

- **Clark's theory:** J. B. Clark had presented the dynamic theory according to which profits occur only in a dynamic economy. In a static economy, there would be no profits because in a static economy population and capital will not grow, production process remains unchanged over time, and only homogeneous goods are produced. In a dynamic economy, there are changes such as an increase in the population and thus a change in the wants of the consumer, growth of capital, and introduction of new technology. A successful entrepreneur is able to increase sales and also expands the business, thus making pure profits. However, this profit will disappear in the long run. Disappearing of profit does not mean that profit is accrued in a dynamic economy only once and then disappears. It means that managers need to take advantage of the changes taking place in the economy and thereby keep making profits.
- **Walker's theory:** According to F. A. Walker, an entrepreneur who possesses extraordinary abilities earns rent on these abilities when he uses these in a business. This rent is the profit earned by him. Like rent, which is the difference between the returns on the less and the more fertile land, profit is the difference between the earnings of the less and the more competent entrepreneur. Walker also believed that there exists only perfect competition where each firm possesses the same managerial skills and thus earns only normal profit.
- **Schumpeter's theory:** J. A. Schumpeter had presented a theory that says profits occur on innovations in the manufacturing sector or even in the technique of supplying the goods. Profit can be earned only by introducing innovations in manufacturing techniques and the methods of supplying goods. Innovations may include the following activities.
 - Launch of a new product
 - Improvement in the existing quality of goods
 - Introduction of new techniques of production
 - Locating new markets for existing products
 - Finding new sources of raw materials

However, these profits may get wiped out over time.

- **Knight's theory:** According to F. H. Knight, profit is a return on bearing uncertainty. Risks are of two types:
 - insurable risks, which can be calculated and thus insured against (example: risks due to accidents and fire); and
 - uninsurable risks, which cannot be calculated and thus cannot be insured against (example: uncertainties regarding the competitor's reaction).

Thus, according to Knight, profit arises from the decisions taken and implemented under the conditions of uncertainty.

- **Hawley's theory:** According to Hawley, profit is simply the price paid to the business manager by society for assuming business risks. According to Hawley's theory, profit consists of two parts:
 - compensation for actual or average loss supplementing the various classes of risk, and
 - incentive for suffering the consequences of being exposed to risk in the entrepreneurial activities.

According to this theory, an entrepreneur has to assume risk to earn more and more profit. In case of absence of risks, an entrepreneur will not receive any profit.

PROFIT MAXIMISATION: AN ALGEBRAIC EXPLANATION

As discussed earlier, according to the conventional economic theory, a firm's aim is to maximise its profit. It is in equilibrium when it maximises profits. Here, we examine the profit-maximising output decision of a firm. This analysis will hold irrespective of whether the firm is operating under conditions of perfect competition or in a situation where there is some control over price.

The firm's economic profit (π) is the difference between TR and TC.

$$\pi = TR - TC$$

Here, TR is the revenue earned from the sale of the output. TR is the unit price multiplied by the quantity sold ($TR = P \times Q$). TC is the total of all costs involved in producing a given output level. It is the sum of total fixed cost and total variable costs ($TC = \text{total fixed cost} + \text{total variable cost}$).

For the profit maximisation, two conditions need to be satisfied at the equilibrium point.

- The first-order or necessary condition is that MC equals MR
- The second-order or sufficient condition is that slope of MR < slope of MC. This proves that MR should be falling while the MC should be rising.

Here, MC is marginal cost, which is the addition to the TC as the output level is raised by one more unit. It is calculated as

$$\frac{\partial TC}{\partial Q}$$

MR is marginal revenue, which is the addition to the TR, when an additional unit of the output is sold. It is calculated as

$$\frac{\partial TR}{\partial Q}$$

Profit maximisation requires that as far as the profit function, $\pi = TR - TC$, is concerned:

- the first derivative is equal to zero.
- the second derivative is less than 0 or negative.

$$\pi = TR - TC$$

$$\frac{\partial \pi}{\partial Q} = \frac{\partial TR}{\partial Q} - \frac{\partial TC}{\partial Q} = 0$$

$$\frac{\partial TR}{\partial Q} = \frac{\partial TC}{\partial Q}$$

Slope of TR = Slope of TC

Thus, MR = MC. This proves that MC equals MR. Now, the second-order condition requires that

$$\frac{\partial^2 \pi}{\partial Q^2} = \frac{\partial^2 TR}{\partial Q^2} - \frac{\partial^2 TC}{\partial Q^2} < 0$$

$$\frac{\partial^2 TR}{\partial Q^2} - \frac{\partial^2 TC}{\partial Q^2} < 0$$

Thus, slope of MR < slope of MC. This proves that MR should be falling while the MC should be rising.

Graphical Explanation of Profit Maximisation

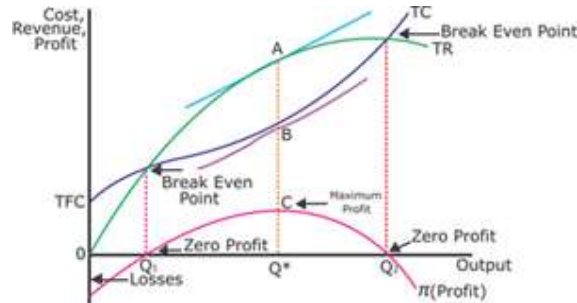
Profit maximisation can be explained graphically with these two approaches :

- The total approach
- The marginal approach

The total approach

The following figure illustrates how a firm maximises profits using the total approach. The figure depicts the TC, TR, and π curves. The TC curve is an inverse S-shaped curve beginning at the level of the fixed cost.

The TR curve is through the origin. The π curve is the profit curve showing the total profit that a firm makes. A firm chooses that level of output at which the difference between the TR and TC curves, in other words, the profit level, is the greatest.



The Total Approach

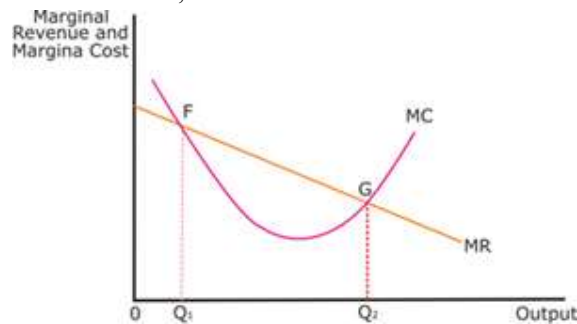
In the figure,

- Between the origin and the output level OQ_1 , the TC curve is above the TR curve. Hence, there occurs negative profit or losses, as shown by the profit curve.
- The firm will make zero profits at the output level of OQ_1 and OQ_2 . These are called the break even points. Here, there is no difference between TR and TC curves or, in other words, the vertical distance between the two curves is zero. The profit curve also shows zero profit at the output level of OQ_1 and OQ_2 .
- The firm will maximise the profits at the output level of OQ^+ . The vertical distance between TR and TC curves, AB is the maximum. At the output level OQ^+ , the slope of the TR curve (which measures the addition to the TR when an additional unit of the output is sold), the firm's MR, is equal to the slope of the TC curve (which measures the addition to the TC as the output level is raised by one more unit), the firm's MC. The profit curve also shows the highest level of profit at OQ^+ level of output, CQ^+ .
- Between the output level OQ^+ and OQ_2 , the TC curve is rising more rapidly than the TR curve. Thus, the profit curve is declining.
- Beyond the output level OQ_2 , the TC curve is again above the TR curve. Hence, there occurs negative profit as shown by the profit curve.

The marginal approach

The following figure illustrates as to how a firm maximises the profits using the marginal principle or the per unit curves. The figure depicts the MC and MR curves. The MC curve is U-shaped while the MR curve is downward sloping. A firm chooses that level of output at which

- $MR = MC$.
- Slope of $MR <$ slope of MC or in other words, the MC curve cuts the MR curve from below.



The Marginal Approach

The figure shows that

- The firm will maximise the profits by producing that level of output at which MR is equal to MC . This occurs at two points, F and G. But it is only at point G that the second condition, the MC curve cuts the MR curve from below is also satisfied. Point G corresponds to OQ_2 level of output. At point F, the MC curve cuts the MR curve from above and thus at OQ_1 level of output the firm is not maximising the profits.
- For output levels less than OQ_2 , MR is greater than MC . Hence, the addition to the TR is more than the addition to the TC . Since the firm will be adding more to TR than to TC , its profit will increase. Thus, the firm must increase its output.
- For output levels greater than OQ_2 , MR is less than MC . Hence, the addition to the TR is less than the addition to the TC . Since the firm will be adding more to TC than to TR , its profit will decrease. Thus, the firm must decrease its output.