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Behavior of Production Process & Different Market Structures

AAT Level I

ECN - Economics

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CHAPTER 03

BAHAVIOUR OF PRODUCTION PROCESS AND DIFFERENT MARKET STRUCTURES

COST OF PRODUCTION

The monetary value of the all the factor inputs or the production factors utilized in the production process is known as production cost.

The value of the best alternative product that could be produced utilizing the same resources utilized in the given production process.

Therefore the opportunity cost of all the resources used in the production process is production opportunity cost. They are in two terms:

1. Direct Cost

The cost that is incurred in order to obtain inputs from others for the production process. It is also named as accounting cost.

2. Indirect Cost

The opportunity cost of the production resources that the resources owned by the given firm utilized in the production process is an indirect cost

Ex:

- Rent forgone
- Normal profit
- Economic depreciation
- Interest income forgone by the producer

NOTE:

- **Accounting Cost = Direct Cost**
- **Economic Cost = Direct Cost + Indirect Cost**
- **Accounting Profit = Total Revenue – Accounting Cost**
- **Economic Profit= Total Revenue – Economic Cost**

Classification of production in economics

Classification of production cost in short run

1. Total Variable Cost (TVC)

This is varied according to the number of units produced in the given period of time.

2. Total Fixed Cost (TFC)

It remains constant regardless of number of units produced in the given period of time.

3. Total Cost (TC)

This is simply the addition of Total Variable Cost (TVC) & Total Fixed Cost (TFC).

Diagram of TVC, TFC & TC curves

NOTE:

- There is no Total Variable Cost during the time of zero level production. Therefore, TC=TFC.
- TC and TVC curves move as parallel curves because the gap is TFC.

- ❖ In the short run production Variable costs and fixed costs exist, but in the long run production there will be only Variable Costs.
- ❖ The Classification of short run and long run does not depend on the specific time period, it varies according to type of the business, size of the business, the nature of the industry and technology used.

4. Average Variable Cost (AVC)

It is the variable cost to produce one unit.

$$AVC = \frac{TVC}{Q}$$

5. Average Fixed Cost (AFC)

It is the fixed cost per unit.

$$AFC = \frac{TFC}{Q}$$

6. Average cost (AC)

It is the average for one unit.

$$AC = \frac{TC}{Q}$$

OR

$$AC = AVC + AFC$$

7. Marginal Cost (MC)

It is the additional cost to produce one addition unit to the total production.

$$MC = \frac{\Delta TC}{\Delta Q}$$

OR

$$MC = \frac{\Delta TVC}{\Delta Q}$$

Diagram of AVC, AFC & MC curves

EXAMPLE:

Q	TC	TFC	TVC	AC	AVC	AFC	MC
0	100						
1	180						
2	240						
3	280						
4	300						
5	310						
6	350						
7	450						

8	600
9	800
10	1100

✓ You are required to ,

1. Fill all the relevant costs
2. Draw all the total costs
3. Draw all the average costs

1. <u>Total Production (TP)</u>

The total number of units that can be produced for a level given of inputs.

2. <u>Average Production (AP)</u>

Production per unit of the variable input.

$$AP = \frac{TP}{L}$$

3. <u>Marginal Production (MP)</u>

The changes in the total production by using one additional variable factor to the total amount.

$$MP = \frac{\Delta TP}{\Delta L}$$

Theory of production

❖ <u>Short run Theory of production - The law of diminishing marginal returns</u>

- ✓ In the short run when a firm adds more and more of variable factors to the given set of fixed factors, the total production, average production and the marginal production will decline after the certain point.
- ✓ When TP maximized MP becomes zero (0).
- ✓ When MP declines it goes through the maximum point of AP.
- ✓ At this time when MP declines it decreases with a positive amount, zero and the negative amount.

Assumption of diminishing marginal returns

1. The variable inputs are homogeneous
2. Constant technology using during the production process

Diagram

❖ 2. Long run Theory of production - The law of returns to scale

- ✓ Returns to scale operates in the long run.
- ✓ It refers to the relationship in between of changes in outputs and the changes in all inputs.
- ✓ There are 3 stages in the operation of returns to scale.

1. Increasing returns to scale. (Input < Output)
   Factors cause increasing returns to scale
   - Indivisibility of factors of productions
   - Specialization of production through division of labour
   - Technologically advanced machineries
   - One time incurring cost
2. Constant Return to scale. (Input = Output)
3. Decreasing return of scale. (Input > Output)

   Factors cause decreasing returns to scale
   - Exhaustibility of resources
   - Stress
   - Complexities in management and coordination

Diagram

Economies of scale

The advantages of large scale production which lead to the reduction in Long run Average Cost (LAC) are known as economic of scale.

These are the outcomes of the expansion of the firm and the industry.

It has two types of economic of scale:

1. Internal economies of scale.

Ex: technical economies, managerial economies, marketing economies, financial economies, risk bearing economies.

2. External economies of scale.

Ex: A better infrastructure will be developed, availability of more information, collection of skilled labour, growth of supporting service and enhancing the development of an economy

Diseconomies of scale

It occurs when firms grow too large in size and expansion with rising Average Cost.

It has two types of diseconomies of scale

1. Internal Diseconomies of scale

Ex: Administration problems, coordinating problems, communication problems, losing control over the work, trade disputes.

2. External Diseconomies of scale

Ex: Pollution, health & sanitation problems, road congestion

The Revenue of the firm

1. Total Revenue (TR)

The total amount of sales income earned by selling the quantities during the given period of time.

$$TR = P * Q$$

- P= Price
- Q = Quantity Sold

2. Average Revenue (AR)

The average revenue earned by selling one unit during the given period of time.

$$AR = \frac{TR}{Q}$$

3. Marginal Revenue (MR)

It is the change in the total revenue by selling one additional unit in the given period of time.

$$MR = \frac{\Delta TR}{\Delta Q}$$

Maximization of profit by a firm

Objectives of the business Firm

1. Profit Maximization
2. Sustain in the market
3. Market growth & size
4. Increasing Market Share
5. Increasing Goodwill
6. Customer satisfaction
7. Providing Employment welfare
8. Improving Leadership
9. Diversification

THE MARKET

- Any situation or event in which buyers and sellers relationship is created in between of them for the purpose of exchanging goods & services.

- Here different types of markets can be found in economics namely,

  - ✓ Perfect Competition Market
  - ✓ Monopoly Market

- ✓ Monopolistic Competition Market
- ✓ Oligopoly Market

1. Perfect Competition Market

The Characteristics

1. Large number of buyers and sellers.
2. There are no barriers to market entry and exit.
3. Supplier or sellers is a price taker.
4. This Market product is homogenous /identical goods.
5. The buyer and seller have the perfect knowledge of the market.
6. Demand curve of the market (industry) will be normal, downwards sloping curve meanwhile the individual demand curve will be infinity.

7. P=AR=MR

8. In the short run it earns supernormal profits or normal profits or loss but in the Long run it earns normal profits only.
    A. Short run

        a. Abnormal profit (AR> AC)

b. <u>Normal profit (AR=AC)</u>

c. <u>Loss (AR<AC)</u>

B. Long run

a. Normal profit (LAR=LAC)

NOTE:

In the Long run it earns normal profits because if sellers in the market earn abnormal profits the new sellers will enter to this market since there is full freedom of market entry therefore quantity increases at this time and price will be decreased at last it earns normal profit in the long run.

In the situation if it earns losses by using the characteristic of full freedom of market exit some of the sellers will leave from the market ,therefore quantity decreases and price will be increased ultimately such market will be converted to earning normal profit in the long run.

2. Monopoly Market

Characteristics

1. There are large number of buyers and a single seller.
2. The product is unique.
3. The monopolist earns super natural profit (super normal profit) in the short run as well as in the long run.
4. He acts as a price maker.
5. Full barriers to the new entrance to the industry.

6. Normal downwards sloping demand curve.
7. Very often it attains for price discrimination.

Ex: Sri Lankan Railway department, Tobacco Company, Government utilities

Price discrimination

It means that a firm charges different price in the different markets for the commodity it produces during a given period of time.

Ex: Medical services, legal services, hotel charges etc.

3. Monopolistic Competition Market

Characteristics

1. There are large no. of buyers and sellers.
2. There is product differentiation.
3. Free market entry and exit.
4. Normal downwards sloping demand.
5. It earns supernormal profit, normal profit or losses in the short run but it earns normal profits in the long run.
   Ex: Hotels, saloons, restaurants etc.

Product differentiation

It means the same product but that is differentiates from those produced by other competition in the same industry in terms of price, size, quantity, packaging, taste, brand name etc.

4. Oligopoly Market

Characteristics:

1. There are few powerful firms.
2. Product are homogeneous or differentiated.
3. There is high interdependence among firms.
4. There is huge rivalry among firms.
5. The demand curves will be downward sloping inelastic demand curve

Ex: Homogeneous: Cement, hardware, steel, copper

Differentiated: Sim cards, mobiles