

Behavior of Production Process and Market Structures

BASIC CONCEPTS OF PRODUCTION

Production Firms

A production firm is an organization that combines factors of production to produce goods and services in order to satisfy human wants.

Types of production organizations:

- Sole proprietorships (sole traders)
- Partnerships
- Incorporated companies
- Cooperative organizations
- State enterprises

Objectives of a firm:

The main objective is profit maximization

Different firms aim for different levels of profit

Production Function

Production is the process of transforming inputs into outputs.

Production function: $Q = f(L, K)$

Where: Q = Output L = Labour K = Capital

Output depends on the level of inputs used. Changing labour or capital will change output.

Short Run and Long Run

Short run:

- At least one factor of production is fixed
- Both fixed and variable factors are used

Long run:

- All factors are variable
- Firms can change all inputs

PRODUCTION COST

Production cost is the monetary value of all inputs used in producing a good or service.

Opportunity Cost

The value of the next best alternative foregone when resources are used for a particular purpose.

Types of Costs

Direct costs (explicit costs):

- Wages paid to labour
- Cost of raw materials
- Fuel Expenses
- Electricity expenses

Indirect costs (implicit costs):

- Wages forgone by the owner
- Normal profit
- Economic depreciation
- Interest income forgone

ACCOUNTING PROFIT AND ECONOMIC PROFIT

Accounting Cost $\text{Accounting Cost} = \text{Direct Cost}$

Accounting Profit $\text{Accounting Profit} = \text{Total Revenue} - \text{Direct Cost}$

Economic Cost $\text{Economic Cost} = \text{Direct Cost} + \text{Indirect Cost}$

Economic Profit $\text{Economic Profit} = \text{Total Revenue} - (\text{Direct Cost} + \text{Indirect Cost})$

SHORT RUN PRODUCTION

In the short run, production involves both fixed and variable inputs.

LAW OF DIMINISHING MARGINAL RETURNS

When additional units of a variable factor are added to a fixed factor, the marginal product & average product eventually decreases, after a certain point.

Assumptions:

- Inputs are homogeneous
- Technology remains constant

Key Concepts

Total Product (TP): Total output produced

Average Product (AP): Output per unit of variable input.

$\text{AP} = \text{Total Output} / \text{Units of Variable Input}$

Marginal Product (MP): Additional output from one more unit of input.

$\text{MP} = \text{Change in Total Product} / \text{Change in Input}$

Stages of Production:

- Increasing returns
- Diminishing returns

Cost Concepts in the Short Run

Average Fixed Cost (AFC) Fixed cost per unit of output.

$$AFC = TFC / Q$$

Average Variable Cost (AVC) Variable cost per unit of output.

$$AVC = TVC / Q$$

Average Total Cost (ATC) Total cost per unit of output.

$$ATC = TC / Q$$

Marginal Cost (MC) The additional cost of producing one more unit of output.

$$MC = \text{Change in Total Cost} / \text{Change in Output}$$

Short Run Cost Curves

Please watch the recording and draw the curves

LONG RUN PRODUCTION

In the long run, **all inputs are variable**. Firms can expand or reduce production as needed.

LAW of Returns to Scale

Explains how output changes when all inputs are varied in the long run. (Output / Input)

Increasing returns to scale:

Output increases more than inputs

Causes:

- division of labour
- better technology
- bulk purchasing

Decreasing returns to scale:

Output increases less than inputs

Causes:

- management difficulties
- resource limitations
- Deterioration of technology

Constant returns to scale:

Output increases in the same proportion as inputs

Long Run Cost Curve

Please watch the recording and draw the curve.

REVENUE AND PROFIT MAXIMIZATION

Marginal Revenue (MR)

The additional revenue earned from selling one more unit of output.

$MR = \text{Change in Total Revenue} / \text{Change in Output}$

Profit Maximization

A firm maximizes profit at the level of output where: $MR = MC$

MARKET STRUCTURES

Market structure depends on:

- Number of firms in the market
- Nature of the product
- Entry and exit conditions
- Degree of competition

Types of market structures:

- Perfect competition
- Monopoly
- Monopolistic competition
- Oligopoly

PERFECT COMPETITION

Characteristics:

- Large number of buyers and sellers
- Identical products
- Firms are price takers
- Free entry and exit
- Perfect information
- Perfect mobility of factors
- Zero economic profit in the long run

MONOPOLY

A market situation where a single firm supplies the entire market.

Characteristics:

- Only one producer
- Unique Products
- High barriers to entry
- Price maker
- Imperfect information

MONOPOLISTIC COMPETITION

Characteristics:

- Large number of firms
- Differentiated products
- Free entry and exit
- Downward sloping demand curve
- Zero economic profit in the long run

OLIGOPOLY

Characteristics:

- Few firms
- Mutual Interdependence among firms
- Barriers to entry
- Homophones or Heterogeneous products
- Relatively inelastic demand

PROFIT MAXIMIZATION IN PERFECT COMPETITION

Condition: **MC = MR**

In perfect competition: $P = AR = MR$

Different profit situations for a perfectly competitive firm:

- Earning economic profit (supernormal profit)
- Earning normal profit (zero economic profit)
- Making losses
- Shutdown decision

