

BUSINESSES AND THEIR COSTS

- I. THE BUSINESS POPULATION
 - a. PLANT: An establishment- factory, farm, mine, store, website
 - b. FIRM: an organization that employs resources to produce goods and services for profit and operates one or more plants
 - c. INDUSTRY: a group of firms that produce the same or similar goods.
 - d. ADVANTAGES OF CORPORATIONS:
 - i. Most effective form of business organization due to ability to raise funds to finance expansions and operations.
 - ii. COMMON STOCK represents a share of ownership in the company.
 - iii. BOND is lending money to the corporation for return of principal and interest.
 - iv. Both together are considered CORPORATE SECURITIES
 - v. Corporations have LIMITED LIABILITY in that owners are only liable for their investment in the stock ownership.
 - vi. Corporations, as legal entities, have a life independent of its owners and officers.
 - e. THE PRINCIPAL-AGENT PROBLEM
 - i. Principals (owners) of corporations do not manage the day-to-day operations of the corporation. They hire agents (officers) to run the corporation.
 - ii. The priorities of the owners (increase of stock price) are sometimes in conflict

with the priorities of the agents (power, prestige, perks, pay)

- II. ECONOMIC COSTS: Costs exist because resources are scarce and productive and have alternative uses
 - a. The measure of economic cost, or opportunity cost, of any resource is the value it has as an alternative use
 - b. EXPLICIT AND IMPLICIT COSTS
 - i. ECONOMIC COSTS are the payments a firm must make, or the incomes it must provide to attract the resources it needs away from alternative production opportunity costs
 - ii. EXPLICIT COSTS: monetary payments to those who supply the factors of production
 - iii. IMPLICIT COSTS: opportunity costs of using its self-owned and self-employed resources. Money payments that self-employed resources could have earned in their best alternative use.
 - c. NORMAL PROFIT AS A COST
 - i. Normal Profit is an implicit cost
 - d. ECONOMIC (OR PURE) PROFIT
 - i. Economic profit is the total revenue less the economic costs (included are both explicit and implicit costs)
 - ii. Economic profit = total revenue – economic costs
 - iii. Even if the economic profit is 0, the entrepreneur has covered all explicit and implicit costs including normal profit
 - iv. Review the figure 6.1 on page 131
 - e. SHORT RUN AND LONG RUN

- i. SHORT RUN: FIXED PLANT
CAPACITY: other resources such as labor, raw materials can be adjusted
- ii. LONG RUN: VARIABLE PLANT:
adjust quantities of ALL available resources; Also can dissolve and leave industry or create new firms to enter the industry
- iii. Short run and long run are
CONCEPTUAL periods rather than
CALENDAR TIME periods.

III. SHORT-RUN PRODUCTION RELATIONSHIPS

- a. Resource supply and demand determine resource pricing
 - i. TOTAL PRODUCT (TP) is total quantity or total output of a particular good or service
 - ii. MARGINAL PRODUCT (MP) is the extra output or added product associated with adding a unit of a variable resource (labor) to the production process
 - 1. $MP = \text{change in total product} / \text{change in labor output}$
 - iii. AVERAGE PRODUCT (AP): also labor productivity, is output of labor input
 - 1. $AP = \text{total product} / \text{total units of labor}$
- b. LAW OF DIMINISHING RETURNS
 - i. As successive units of a variable resource (labor) are added to a fixed resource (capital or land), beyond some point the extra, or marginal, product that can be attributed to each additional unit of the variable resource will decline.

c. RELEVANCY FOR FIRMS

- i. Total product will rise at an increasing rate, diminishing rate, reach a maximum, then eventually decline.
- ii. As more workers are added near the end of the cycle above, overcrowding will set in. Machinery will be underused.
- iii. Assumes all units of labor are equal.

d. TABULAR AND GRAPHICAL REPRESENTATIONS

- i. Table on figure 6.2 on page 136 is a numerical illustration of the law of diminishing returns.
- ii. Review the tables and graphs on page 136

IV. SHORT-RUN PRODUCTION COSTS

a. FIXED, VARIABLE AND TOTAL COSTS

- i. FIXED COSTS are costs that do not change with changes in output
 1. Must be paid even with production at zero
 2. Plant and rent, interest on firm's debts, and depreciation on equipment and buildings are fixed costs.
 3. Cannot avoid payment in the short run
- ii. VARIABLE COSTS are costs that can change in the short run with the level of output.
 1. Examples are labor, raw materials, fuel, etc.

iii. TOTAL COSTS = FIXED AND VARIABLE COSTS

1. $TC = FC + VC$

b. PER-UNIT OR AVERAGE COSTS

- i. AVERAGE FIXED COSTS (AFC)
 - 1. $AFC = TFC/Q$
 - ii. AVERAGE VARIABLE COSTS (AVC)
 - 1. $AVC = TVC/Q$
 - 2. Because total variable costs reflects the diminishing law of returns, so must average variable costs
 - iii. AVERAGE TOTAL COSTS
 - 1. $ATC = TC/Q = TFC/Q + TVC/Q = AFC + AVC$
- c. MARGINAL COST
- i. MC is the extra or additional cost of producing one more unit of output
 - 1. $MC = \text{change in } TC / \text{change in } Q$
 - 2. Review MC on figure 6.3 on page 138
 - ii. MARGINAL DECISIONS: marginal costs are the costs the firm can control directly and immediately
 - 1. A firm's decisions as to what output level to produce are typically marginal decisions
 - 2. Graphically shown in figure 6.3 on page 138
 - iii. RELATION OF MC TO AVC AND ATC
 - 1. Figure 6.3 graphically shows that MC intersects AVC and ATC at their minimum points.
 - 2. Mathematical necessity: When MC is added to TC and is less than current average cost, ATC will fall; reverse is also true

V. LONG-RUN PRODUCTION COSTS

- a. A firm can undertake ALL desired resource adjustments.
- b. FIRM SIZE AND COSTS
 - i. For a time, successively larger plants will lower ATC; however, eventually the building of still larger plants may cause ATC to rise
- c. THE LONG-RUN COST CURVE
 - i. The long-run ATC curve for the firm is made up of segments of the short-run ATC curves of various plant sizes
 - 1. See figure 6.4 on page 143
 - 2. The red bumpy curve on figure 6.4 is the firm's PLANNING CURVE
- d. ECONOMIES AND DISECONOMIES OF SCALE
 - i. The U-shaped curve of the long-run ATC of figure 6.6 on page 145 graphically depicts economies of scale (first part of curve) and diseconomies of scale (last part of curve)
 - ii. ECONOMIES OF SCALE – Explain downsloping portion of curve
 - 1. LABOR SPECIALIZATION – as plant sizes increase hiring more workers mean jobs can be divided and sub-divided.
 - 2. MANAGERIAL SPECIALIZATION –better use of manager and specialization in management
 - 3. EFFICIENT CAPITAL – Effective use of equipment means higher level of production and larger-scale producers.

4. OTHER FACTORS – R & D costs can be averaged out better over larger producers
 - a. In many U.S. industries, economies of scale have been very significant; many have survived and flourished
- iii. DISECONOMIES OF SCALE: difficulty of efficiently controlling and coordinating a firm's operations as it becomes a large-scale producer
 1. Expansion of the management hierarchy and bureaucracy leads to problems of communication and coordination.
 - a. Red tape issue
- iv. CONSTANT RETURNS TO SCALE
 1. There may be a constant returns to scale where long-run average costs do not change
 - a. Q1Q2 part of graph on page 145 for figure 6.6 depicts constant returns of scale
- e. MINIMUM EFFICIENT SCALE (MES) AND INDUSTRY STRUCTURE
 - i. MES is the lowest level of output at which a firm can minimize long-run average costs.
 1. In figure 6.6 on page 145 it occurs at Q1
 2. Firms within Q1Q2 would be equally efficient.
 3. With an extended range of constant returns to scale, relatively large and

small firms can coexist in an industry and be equally successful.

4. Where economies of scale are few and diseconomies of scale come into play quickly, the MES occurs and a low level of output (6.6c); retail and farming trades are examples
- ii. Shape of the long-run ATC curve is determined by technology and the economies and diseconomies of scale that result
- iii. Government policies, the geographical size of markets and managerial strategy and skill can explain the structure of particular industries.