

### Size of the Firm

#### Cost:

- Accounting v. Economic.
  - Accountants measure and categorize expenditures.
  - Economists are interested in the future behavior predicted by resource expenditures.
  - Financial accounting is closest thing to economic cost analysis.
- Fixed v. Variable
  - Fixed costs cause declining average cost.
    - Would rather not use the term volume effect, but this is the common parlance.
  - When average cost declines because of fixed cost, does it turn up?
  - Depends on variable cost.
    - If variable cost is constant, average cost declines continuously.
    - If variable cost is rising, then average cost is U-shaped.

#### U-Shaped AC — Assume Rising Average Variable Cost (AVC)

- Implies rising marginal cost.
  - What is marginal cost? Why is it important?
- Profit maximization in the competitive case.
- Minimum average variable cost and the shut down point.
  - Price minus AVC are cash flows to the firm.
  - If cash flows are negative, the firm ceases production.
  - If cash flows are positive, the firm continues production even if the cash flows are insufficient to pay off the fixed investment.
  - Bankruptcy v. Shut down: Bankruptcy is a case where cash flows are insufficient to pay off the fixed investment made by the bond holders. Bankruptcy may or may not be associated with shut down.

#### Economies of Scale

- Fixed plant implies U-shaped AC.
  - Can a bigger plant create a U-shaped average cost curve that has a lower minimum value?
  - Maybe yes; maybe no; can go either way
- Causes of Economies of Scale
  - Specialization of labor (Adam Smith's pin factory)
  - Economies of inventories (Law of Large Numbers)
  - Scale effects in nature
  - "Durable dies"
- Causes of Diseconomies of Scale
  - Rate effects—heat—congestion
  - Managerial shortcomings
- Economies and Diseconomies of Scale that create a U-shaped AC imply a planning problem for the firm.
  - The firm must consider the cost implications of its choice of scale.
  - Generally, firms choose the scale of production that achieves the lowest possible average cost.

- Competition or the threat of it forces them to behave in this way.
- However, the size of the market may constrain this choice for the firm.
- U-shaped AC can also be caused by multiple functions within the firm.
  - Two examples:
    - Milk processor with increasing transportation cost and EoS in processing (example in book).
    - Newspapers enjoy EoS in printing and rising cost in distribution.

### **Economies of Scope**

- Multiple product lines
- Integration over the chain of production (called vertical integration).
- Economies of scope arise from intensive use of common resources
  - (Also: Contracting cost problems of correctly pricing common resources and transferred products; contract enforcement.)
- Cost implications for multiproduct firms.
  - Common v. joint costs
  - What is marginal cost?
    - In the Cheer / Tide example, the marginal cost of Cheer is the wholesale price of Tide and v.v. because this is the opportunity cost.