

7-5 Learning Curves

Suppose you have a production technology that can be characterized by a learning curve. Every time you increase production by one unit, your costs decrease by \$6. The first unit costs you \$64 to produce. If you receive a request for proposal (RFP) on a project for four units, what is your break-even price? Suppose that if you get the contract, you estimate that you can win another project for two more units. Now what is your break-even price for those two units?

7-6 Multiconcept Restaurants Are a Growing Trend

A multiconcept restaurant incorporates two or more restaurants, typically chains, under one roof. Sharing facilities reduces costs of both real estate and labor. The multiconcept restaurants typically offer a limited menu, compared with full-sized, stand-alone restaurants. For example, KMAC operates a combination Kentucky Fried Chicken (KFC)/Taco Bell restaurant. The food preparation areas are separate, but orders are taken at shared point-of-sale (POS) stations. If Taco Bell and KFC share facilities, they reduce fixed costs by 30%; however, sales in joint facilities are 20% lower than sales in two separate facilities. What do these numbers imply for the

decision of when to open a shared facility versus two separate facilities?

Group Problems

G7-1 Economies of Scale

Describe an activity, process, or product of your company that exhibits economies or diseconomies of scale. Describe the source of the scale economy. How could your organization exploit the scale economy or diseconomy? Compute the profit consequences of the advice.

G7-2 Learning Curves

Describe an activity or process or product of your company characterized by learning curves. Describe the source of the learning curve. How could your organization exploit the learning curve? Compute the profit consequences of the advice.

G7-3 Economies of Scope

Describe two activities inside your organization, or one inside and one outside your organization, that exhibit economies (or diseconomies) of scope. Describe the source of the scope economies. How could your organization exploit the scope economy or diseconomy? Compute the profit consequences of the advice.

END NOTES

1. For more on Spectrum Brands' difficulties, see Elizabeth Woyke and David Henry, "The Buyout Boom's Dark Side," *Business Week*, August 13, 2007.
2. Akio Morita with Edwin M. Reingold and Mitsuko Shimomura, *Made in Japan: Akio Morita and Sony* (New York: Penguin, 1988).
3. Michael Ollinger, James M. McDonald, and Milton Madison. "Technological Change and Economies of Scale in U.S. Poultry Processing," *American Journal of Agricultural Economics* 87 (February 2005): 116–129.
4. Shipping costs from Jean-Paul Rodrigue, Claude Comtois, and Brian Slack (eds), *The Geography of Transport Systems*, 3ed., (London: Routledge, 2013).
5. Formula for marginal cost: $100 \cdot 0.8^{\wedge} (\text{Log}(\# \text{ planes})/\text{Log}(2))$.

6. Following are the costs to produce Product A, Product B, and Products A and B together. Which of the following exhibits economies of scope?
a. 100, 150, 240
b. 100, 150, 250
c. 100, 150, 260
d. All of the above
7. According to the law of diminishing marginal returns, marginal returns
a. diminish always prior to increasing.
b. diminish constantly.
c. diminish never.
d. diminish eventually.
8. It costs a firm \$90 per unit to produce product A and \$70 per unit to produce product B individually. If the firm can produce both products together at \$175 per unit of product A and B, this exhibits signs of
a. economies of scale.
b. economies of scope.
c. diseconomies of scale.
d. diseconomies of scope.
9. A company faces the following costs at the respective production levels in addition to its fixed costs of \$50,000:

Quantity	Marginal Cost	Sale Price	Marginal Return
1	\$10,000	\$20,000	\$10,000
2	\$11,000	\$20,000	\$9,000
3	\$12,000	\$20,000	\$8,000
4	\$13,000	\$20,000	\$7,000
5	\$14,000	\$20,000	\$6,000

How would you describe the returns to scale for this company?

a. Increasing

b. Decreasing

c. Constant

d. Marginal

10. Once marginal cost rises above the average cost,
a. average costs will increase.
b. average costs are unaffected.
c. average costs will decrease.
d. None of the above.

Individual Problems

7-1 Scale and Scope

What is the difference between economies of scale and economies of scope?

7-2 Brand Extensions

Suppose Nike's managers were considering expanding into producing sports beverages. Why might the company decide to do this under the Nike brand name?

7-3 Rangers' T-Shirts

The variety of Riverside Ranger logo T-shirts includes 12 different designs. Setup between designs takes one hour (and \$18,000), and, after setting up, you can produce 1,000 units of a particular design per hour (at a cost of \$8,000). Does this production exhibit scale economies or scope economies?

7-4 Average and Marginal Costs

Describe the change in average costs and the relationship between marginal and average costs under the following three conditions as quantities produced increase:

	Average Cost	Marginal Cost Versus Average Cost
Constant returns to scale	Rising Flat	Higher Equal Lower
Decreasing returns to scale	Rising Flat	Higher Equal Lower
Increasing returns to scale	Rising Flat	Higher Equal Lower