

Chapter 16

PERFECTLY COMPETITIVE MARKETS

Microeconomics in Context (Goodwin, et al.), 4th Edition

Chapter Summary

This chapter presents the traditional, idealized model of perfect competition. In it, you will learn how perfectly competitive firms theoretically make production decisions to maximize their profits. Perhaps the most surprising concept in the chapter is the idea that perfectly competitive firms make zero *economic* profit. The chapter will end with some real-world considerations that indicate even perfectly competitive markets may not always produce economically efficient outcomes.

After reading and reviewing this chapter, you should be able to:

1. Describe the four different views of market power.
2. List the assumptions behind the traditional model of perfectly competitive markets.
3. Describe how a perfectly competitive firm maximizes its profits, based on analysis of total revenue and total cost curves.
4. Describe how a perfectly competitive firm maximizes its profits, based on marginal analysis.
5. Describe how the situation facing the individual firm relates to the overall market situation, in perfect competition.
6. Describe why economic profits are driven to zero under perfect competition.
7. Discuss why inefficiencies may persist in markets, even under conditions approaching perfect competition.

Key Term Review

market power

price taker

accounting profits

marginal revenue

perfectly competitive market equilibrium

path dependence

appendix: average variable cost (AVC)

perfect competition

total revenues

economic profits

profit maximization (under perfect competition)

sunk cost

network externality (in production)

Active Review Questions

Fill in the Blank

1. The ability to affect the terms and conditions of the exchanges in which you participate is referred to as _____.
2. In the perfect competition model, buyers and sellers have _____ information.
3. The demand curve facing a perfectly competitive firm is _____.
4. The difference between total revenues and accounting costs is known as _____.
5. Under conditions of perfect competition, a profit-maximizing firm will choose a level of production such that marginal cost is equal to _____.
6. At competitive equilibrium, all firms make (positive/zero/negative) _____ economic profit.
7. In a perfectly competitive market, the entrance of new firms into the market will drive prices (up, down) _____.
8. There are (many/few) _____ real world examples of perfectly competitive markets.
9. The economists view generally considers market power to be (good/bad) _____ and competition to be (good/bad) _____.
10. The term implying that “history matters” is known as _____.

True or False

11. Under conditions of perfect competition, all firms make positive economic profits.
12. Under perfect competition, individual economic actors have no market power.
13. If a perfectly competitive firm wants to sell a larger quantity of goods, it must lower its selling price.
14. A perfectly competitive firm maximizes its profits at the point where its total cost curve intersects its total revenue curve.
15. Economic profit is equal to the difference between total revenues and economic costs.

16. The “citizen perspective” is that market power and competition can both be undesirable.

17. An example of a network externality is when the widespread adoption of a particular technology results in environmental damages.

18. A perfectly competitive firm should shut down in the short run whenever it is unable to recover its fixed costs.

Short Answer

19. What are the four key assumptions of the traditional model of perfect competition?

20. Describe an example of a network externality. (The textbook describes several examples; try to think of a different one from those presented in the book.)

Problems

1. Suppose that manufacturers of laptop computers are price takers operating in a perfectly competitive market. Each laptop can be sold for \$2,000.
 - a. Sketch the total revenue curve for laptop computers, and explain why it looks the way it does.

- b. Sketch the marginal revenue curve for laptop computers, and explain why it looks the way it does.

2. Suppose that the cost of production of laptop computers shows initially a brief span of decreasing marginal costs, followed by increasing marginal costs.

- a. On the same graph as the total revenue curve you drew for Problem #1a, draw a possible total cost curve for laptop computer production. For a given quantity Q_1 (placed at any location you choose on the horizontal axis), show the corresponding profit.
- b. On the same graph as the marginal revenue curve you drew for Problem #1b, draw a possible marginal cost curve for laptop computer production. Indicate the profit maximizing output level.

3. A flashlight manufacturing company has the following cost structure (some columns are intentionally left blank):

Quantity	Marginal Cost (\$)			
0				
1	12			
2	8			
3	10			
4	13			
5	17			

- a. Supposing that the firm is a price taker and can sell each flashlight it makes for \$13, graph the Marginal Cost and Marginal Revenue curves for this flashlight manufacturer.
- b. If you apply marginal analysis, what does the figure you drew in part (a) imply is the profit-maximizing output level for the firm?
- c. Assume that the firm has fixed costs of \$10. Calculate Total Cost, Total Revenue and Total Profit for the firm at the various production levels, using the blank columns in the table above.
- d. With flashlights selling for \$13, what is maximum profit the firm can make? What should it do? Explain.

Self Test

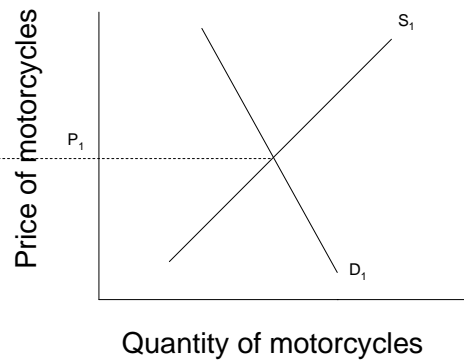
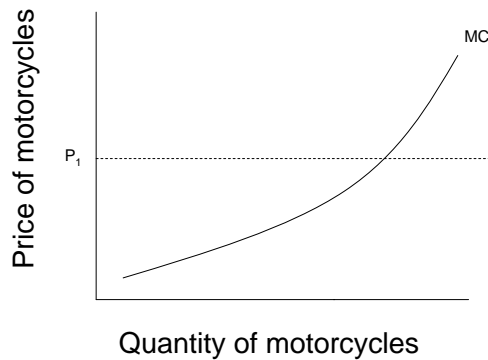
1. In the market structure known as perfect competition, which of the following statements is assumed to be true all the time?
 - a. All economic actors have market power.
 - b. Big business has significant influence on public policy.
 - c. Competition is considered a harmful force.
 - d. Economic actors are concerned citizens.
 - e. Individual economic actors have no market power.

2. Which of the following is *not* a condition of the model of perfect competition?
 - a. Each individual buyer can affect the market price.
 - b. Within a given market, only one kind of good or service is traded.
 - c. Producers can freely enter the industry.
 - d. Producers can freely exit the industry.
 - e. Sellers all have perfect information.

3. The individual price-taking firm faces ...
 - a. A perfectly inelastic demand curve.
 - b. A horizontal demand curve.
 - c. A perfectly elastic demand curve.
 - d. A vertical demand curve.
 - e. Both b and c are true.

4. Over the long run, which of the following statements is true about profit-maximizing firms in a perfectly competitive market?
 - a. Economic profits are zero.
 - b. Economic profits are negative.
 - c. Economic profits are positive.
 - d. Accounting profits are zero.
 - e. Both c and d are true.

Questions #5 to #7 refer to the following graphs:



5. Suppose that at price P_1 , motorcycle manufacturers are making positive economic profits. Assuming the market in motorcycles is perfectly competitive, which of the following will occur in the long run?
 - a. The supply curve will shift to the right.
 - b. The demand curve will shift to the right.
 - c. Price will rise.
 - d. Price will remain constant.
 - e. Marginal costs will increase.

6. Suppose now that motorcycle producers are making economic losses. Which of the following will happen in the long run?
 - a. Competitive pressures will drive economic profits toward zero.
 - b. Some firms will exit the market.
 - c. The supply curve will shift to the right.
 - d. Both a and b are true.
 - e. Both b and c are true.

7. Suppose that competitive pressures drive the price of motorcycles downward. Which of the following statements is an accurate description of the situation that results?
 - a. Revenues and profits are reduced.
 - b. Revenues fall, while profits remain constant.
 - c. The supply curve shifts to the left.
 - d. Marginal cost rises.
 - e. The demand curve shifts to the right.

Questions 8 – 10 refer to the following scenario.

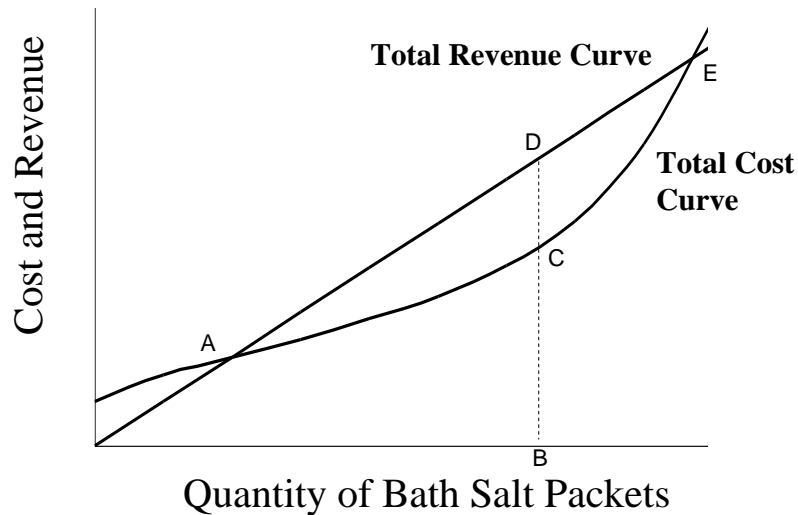
Handy Hardware Factory produces desk lamps, according to the following cost structure. They are a price taker, and can sell any number of lamps for \$8 each.

Quantity of Lamps	Marginal Cost (\$)	Total Cost (\$)	Marginal Revenue (= Price) (\$)	Total Revenue (\$)	Total Profit (\$)
0	--	50	--		
1	15		8		
2	5		8		
3	6		8		
4	8		8		
5	12		8		

8. What is the total cost of producing 3 lamps?
- a. \$ 6
 - b. \$ 26
 - c. \$ 50
 - d. \$ 76
 - e. None of the above.
9. What level of total profit will Handy Hardware make, if it produces 3 lamps?
- a. less than \$ 0 (that is, a loss)
 - b. between \$ 0 and \$20
 - c. between \$20 and \$50
 - d. more than \$50
 - e. Cannot be determined from the information given.
10. What is the profit-maximizing level of output for Handy Hardware?
- a. 0 lamps
 - b. 1 lamp
 - c. 3 lamps
 - d. 4 lamps
 - e. None of the above.

Questions 11 – 12 refer to the following scenario.

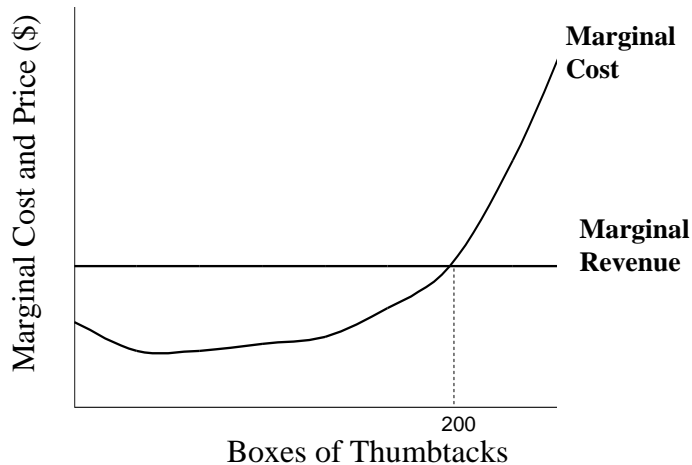
Bertha's Bath Supplies produces packets of bath salts, which are sold for \$5 each. Bertha's Bath Supplies is a price-taking firm. Total revenue and total cost curves for the firm are shown in the graph below.



11. Which of the following statements is true regarding the graph shown above?
- Profits are maximized at point E.
 - The distance from B to C represents profit earned.
 - The distance from B to D represents profit earned.
 - The distance from C to D represents profit earned.
 - At point B, marginal revenue is designated by point D.
12. Which of the following statements about Bertha's Bath Supplies do you know to be true, based on the information provided above?
- Profits are maximized when production reaches 100 packets.
 - Profits are maximized at point E.
 - Profits are maximized when marginal costs equal \$5 per packet.
 - Point B represents a production level yielding zero accounting profit.
 - Point E represents a production level yielding positive economic profit.
13. Another name for marginal revenue is ...
- externalities.
 - price.
 - economic profits.
 - accounting profits.
 - sunk cost.

Questions 14 and 15 refer to the scenario below.

Tillie's Tack Place manufactures thumb tacks and sells them for \$2.00 per box of tacks. The graph below shows marginal cost and marginal revenue for Tillie's Tack Place.



14. When Tillie's Tack Place is producing 200 boxes of thumbtacks, which of the following statements must be true?
- Tillie's Tack Place is not yet making a profit.
 - Producing more tacks would reduce total profits.
 - Producing more tacks would increase total profits.
 - Total costs exceed total revenues at this point.
 - Producing one more box of tacks would mean that total accounting costs would exceed total revenues.
15. When Tillie's Tack Place is producing 200 boxes of thumbtacks, the marginal cost per box is equal to ...
- \$50
 - \$25
 - \$5
 - \$2
 - The marginal cost cannot be determined from the information given here.
16. What type of cost should not affect the short-run production decisions of a perfectly competitive firm?
- Variable costs
 - Sunk costs
 - Fixed costs
 - Both a and b
 - Both b and c

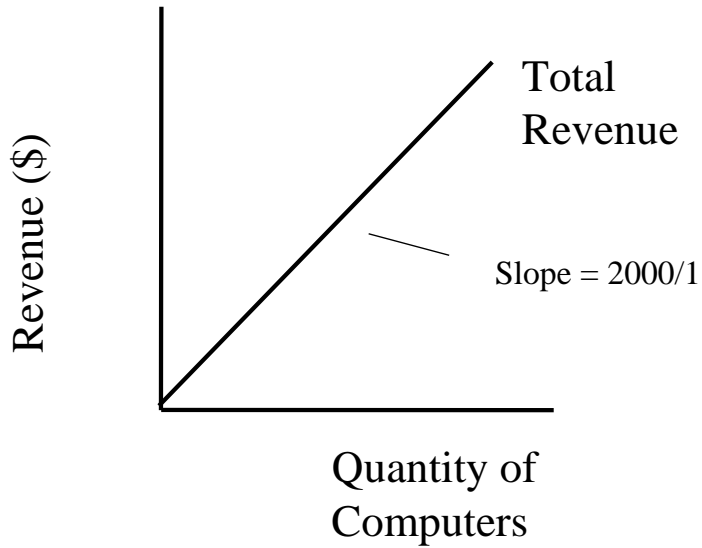
17. In the short run, a perfectly competitive firm should keep producing as long as ...
- it is making an economic profit.
 - it is making an accounting profit.
 - its total revenues are greater than its fixed costs.
 - its total revenues are greater than its variable costs.
 - its marginal revenues are positive.
18. If positive economic profits are being made in a perfectly competitive market, what two changes are likely to occur?
- The market supply curve will shift to the left and each firms' production quantity will fall.
 - The market supply curve will shift to the right and each firms' production quantity will rise.
 - The market supply curve will shift to the left and each firms' production quantity will rise.
 - The market supply curve will shift to the right and each firms' production quantity will fall.
 - None of the above
19. If negative economic profits are being made in a perfectly competitive market, what two changes are likely to occur?
- The market supply curve will shift to the left and each firms' production quantity will fall.
 - The market supply curve will shift to the right and each firms' production quantity will rise.
 - The market supply curve will shift to the left and each firms' production quantity will rise.
 - The market supply curve will shift to the right and each firms' production quantity will fall.
 - None of the above
20. Suppose that businesses tend to locate in areas that already have a high concentration of businesses. This is an example of ...
- path dependence.
 - sunk costs.
 - market equity.
 - marginal analysis.
 - perfect competition.

Answers to Active Review Questions

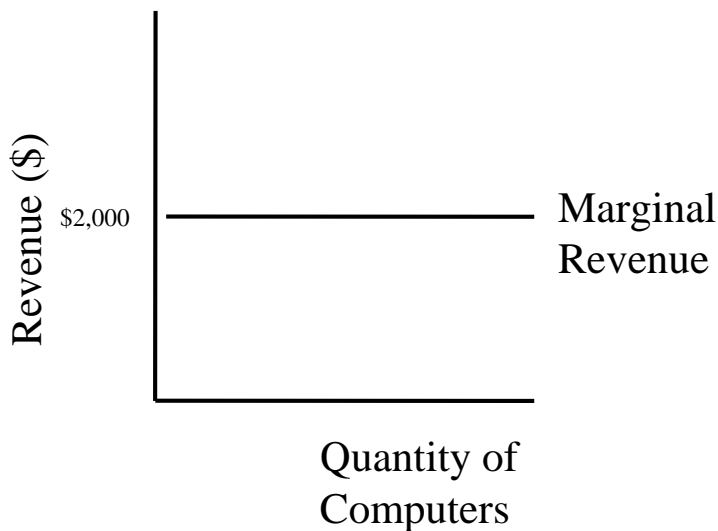
1. market power
2. perfect
3. perfectly elastic (or horizontal)
4. accounting profits
5. price (or marginal revenues)
6. zero
7. down
8. few
9. bad; good
10. path dependence
11. False
12. True
13. False
14. False
15. True
16. True
17. False
18. False
19. 1. There are numerous small sellers and buyers, so small that no individual seller or buyer can affect the market price. 2. Within any particular market, only one kind of good or service is traded, and all units are identical. 3. Producers can freely enter or exit the industry. 4. Buyers and sellers all have perfect information.
20. One example could be the difficulties you might face if you tried to maintain an old model of car that few other people were using. Over time, you would probably find it difficult to get the parts you needed, or even to find a mechanic who understood how to maintain this kind of car. Another example would be trying to get around with a horse and buggy. You would probably find that because cities are set up for traveling by cars and other automated forms of transport, you would have trouble navigating modern city streets with your horse and buggy.

Answers to Problems

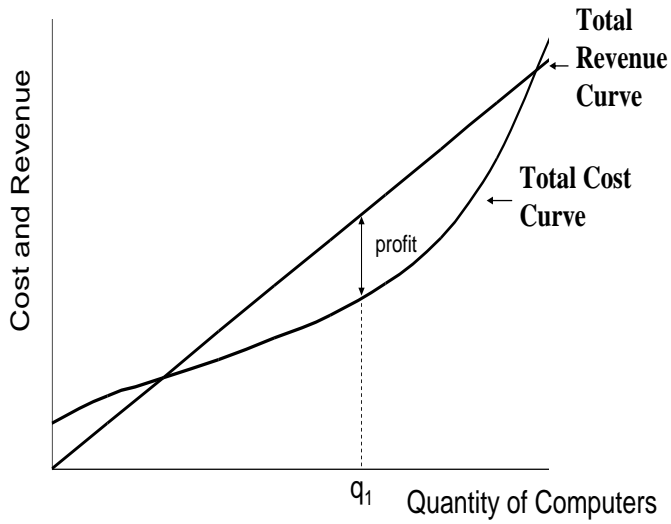
1.a. The total revenue curve for laptop computers is a straight upward-sloping line because in a perfectly competitive market, every laptop will sell for the same price. The slope of the line is +2000.



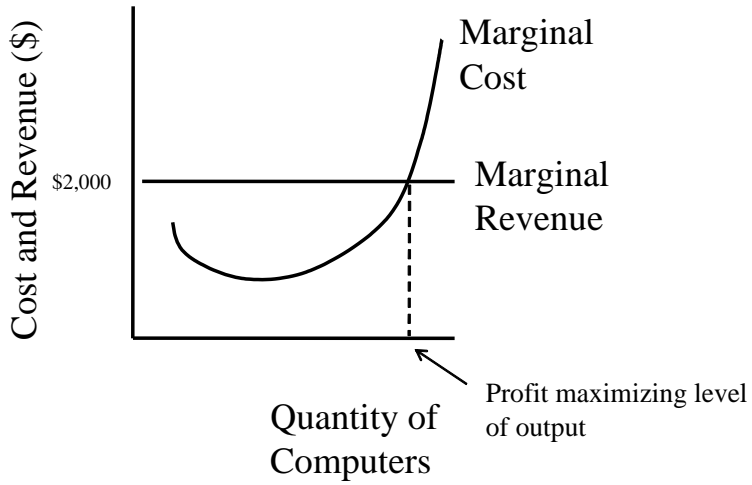
1.b. The marginal revenue curve is a straight line, horizontal at the market price (\$2,000). Each additional laptop sold brings in the same amount.



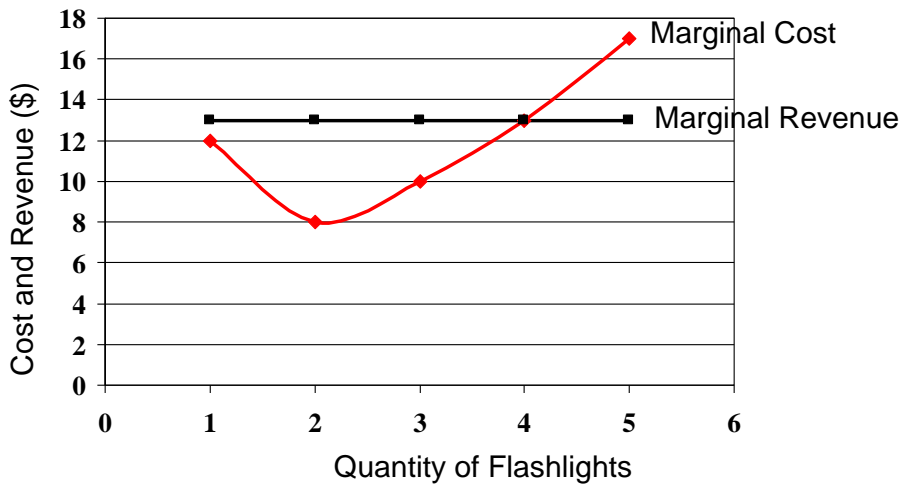
2. a.



2.b.



3. a.



3. b. 4 flashlights (where marginal cost = marginal revenue)

3. c.

Quantity	Marginal Cost (\$)	Total Cost (\$)	Total Revenue (Price = \$13)	Total Profit
0		10	0	-10
1	12	22	13	-9
2	8	30	26	-4
3	10	40	39	-1
4	13	53	52	-1
5	17	70	65	-5

3. d. At a price of flashlights of \$13, the firm's maximum profit is a *loss* of \$1 (achievable at a production level of 3 or 4 lamps). The firm should continue to produce (in the short run), since losing \$1 is better than losing \$10, which is what it would lose if it shuts down.

Answers to Self Test Questions

1. e
2. a
3. e
4. a
5. a
6. d
7. a
8. d
9. a
10. a
11. d
12. c
13. b
14. b
15. d
16. e
17. d
18. d
19. c
20. a