



# Managers, Profits, and Markets

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## Learning Objectives

After reading Chapter 1 and working the problems for Chapter 1 in the textbook and in this Workbook, you should be able to:

- Explain the role of economic theory in managerial economics.
- Contrast routine business practices (or tactics) with strategic decisions.
- List seven economic forces that influence the long-run profitability of firms.
- Measure the explicit opportunity cost of using market-supplied resources to produce goods or services.
- Measure the implicit opportunity cost of using owner-supplied resources to produce goods or services.
- Compute total economic cost of using resources by summing explicit and implicit opportunity costs of resource use. Calculate economic profit and accounting profit.
- Define the value of a firm and explain the relation between maximizing profit and maximizing the firm's value.
- List several common mistakes that taking a course in managerial economics can help you avoid making.
- Discuss the problems arising from separation of ownership and control in businesses and suggest some corporate control mechanisms to address these problems.
- Explain the difference between price-taking firms to price-setting firms.
- Provide an answer to the question “what is a market?”
- List and explain the characteristics of four market structures.
- Discuss implications for managerial decision making of globalization of markets.

## Essential Concepts

1. Managerial economics applies microeconomic theory—the study of the behavior of individual economic agents—to business problems in order to teach business decision makers how to use economic analysis to make decisions that will achieve the firm's goal—maximization of profit.

2. Economic theory helps managers understand real-world business problems by using simplifying assumptions to abstract away from irrelevant ideas and information and turn complexity into relative simplicity.
3. *Microeconomics* is the study and analysis of the behavior of individual segments of the economy: individual consumers, workers and owners of resources, individual firms, industries, and markets for goods and services. Using marginal analysis, microeconomics provides the foundation for understanding the everyday business decisions managers routinely make in running a business. Such decisions are frequently referred to as *business practices* or *tactics*.
4. *Industrial organization* is a specialized branch of microeconomics that focuses on the behavior and structure of firms and industries. Industrial organization supplies the foundation for understanding *strategic decisions* through the application of game theory.
5. Strategic decisions differ from routine business practices or tactics because, in contrast to routine business practices, strategic decisions seek to shape or alter the conditions under which a firm competes with its rivals in ways that will increase and/or protect the firm's long-run profit. While routine business practices are *necessary* for keeping organizations moving toward their goal of profit-maximization, strategic decisions are generally *optional* actions managers can take as circumstances permit.
6. Industrial organization identifies seven economic forces that promote long-run profitability: few close substitutes, strong entry barriers, weak rivalry within markets, low market power of input suppliers, low market power of consumers, abundant complementary products, and limited harmful government intervention.
7. The economic cost of using resources to produce a good or service is the opportunity cost to the owners of the firm using those resources. The opportunity cost of using any kind of resource is what the owners of the firm must give up to use the resource.
8. Total economic cost is the sum of the opportunity costs of market-supplied resources plus the opportunity costs of owner-supplied resources. The opportunity costs of using market-supplied resources are the out-of-pocket monetary payments made to the owners of resources, which are called *explicit costs*. The opportunity cost of using an owner-supplied resource is the best return the owners of the firm could have received had they taken their own resource to market instead of using it themselves. Such nonmonetary opportunity costs are called *implicit costs*.
9. Businesses may incur numerous kinds of implicit costs, but the three most important types of implicit costs are (1) the opportunity cost of cash provided by owners, known as equity capital, (2) the opportunity cost of using land or capital owned by the firm, and (3) the opportunity cost of the owner's time spent managing the firm or working for the firm in some other capacity.
10. Economic profit is the difference between total revenue and total economic cost:
 
$$\begin{aligned} \text{Economic profit} &= \text{Total revenue} - \text{Total economic cost} \\ &= \text{Total revenue} - \text{Explicit costs} - \text{Implicit costs} \end{aligned}$$
 Economic profit belongs to the owners and will increase the wealth of the owners. When revenues fall short of total economic cost, economic profit is negative, and the loss must be paid for out of the wealth of the owners.

11. When accountants calculate business profitability for financial reports, they follow a set of rules known as “generally accepted accounting principles” or GAAP. These rules, which are constructed by the Securities and Exchange Commission (SEC) and the Financial Accounting Standards Board (FASB) do not allow accountants to deduct most types of implicit costs for the purposes of calculating taxable accounting profit. Thus, accounting profit differs from economic profit because accounting profit does not subtract from total revenue the implicit costs of using resources.

$$\text{Accounting profit} = \text{Total revenue} - \text{Explicit costs}$$

12. Since the owners of firms must cover the costs of all resources used by the firm, maximizing economic profit, rather than accounting profit, is the objective of the firm’s owners.
13. The value of a firm is the price for which it can be sold, and that price is equal to the present value of the expected future profit of the firm.
14. The risk associated with not knowing future profits of a firm is accounted for by adding a risk premium to the discount rate used for calculating the present value of the firm’s future profits. The larger (smaller) the risk associated with future profits, the higher (lower) the risk premium used to compute the value of the firm, and the lower (higher) the value of the firm will be.
15. If cost and revenue conditions in any period are independent of decisions made in other time periods, a manager will maximize the value of a firm by making decisions that maximize profit in every single time period.
16. Taking a course in managerial economics can help you avoid making a number of common mistakes in business decision making: never increase output simply to reduce average costs, generally avoid the pursuit of market share because doing so usually lowers profit, focus on maximizing total profit rather than profit margin, understand that maximizing total revenue does not maximize profit, and avoid the use of cost-plus pricing methods when setting prices.
17. In firms for which the manager is not also the owner, the managers are agents of the owners, or principles. A principal-agent problem exists when agents have objectives different from those of the principal, and the principal either has difficulty enforcing agreements with the agent or finds it too difficult and costly to monitor the agent to verify that the agent is furthering the principal’s objectives.
18. Agency problems arise because of moral hazard. Moral hazard exists when either party to an agreement has an incentive not to abide by all provisions of the agreement, and one party cannot cost-effectively find out if the other party is abiding by the agreement, or cannot enforce an agreement even when information is available.
19. In order to address agency problems, shareholders can employ a variety of corporate control mechanisms. Shareholders can reduce agency problems by:
  - (1) requiring managers to hold a stipulated amount of the firm’s equity,
  - (2) increasing the percentage of outsiders serving on the company’s board of directors, and

- (3) financing corporate investments with debt instead of equity. Corporate takeovers also create an incentive for managers to make decisions that maximize the value of a firm.
20. A price-taking firm cannot set the price of the product it sells because price is determined strictly by the market forces of demand and supply.
21. A price-setting firm sets the price of its product because it possesses some degree of market power, which is the ability to raise price without losing all sales.
22. A market is any arrangement that enables buyers and sellers to exchange goods and services, usually for money payments. Markets exist to reduce transaction costs, the costs of making a transaction.
23. Market structure is a set of characteristics that determines the economic environment in which a firm operates:
  - (1) the number and size of firms operating in the market,
  - (2) the degree of product differentiation, and
  - (3) the likelihood of new firms' entering.
24. Markets may be structured as one of four types:
  - (1) A perfectly competitive market has a large number of relatively small firms selling an undifferentiated product in a market with no barriers to entry.
  - (2) A monopoly market is one in which a single firm, protected by a barrier to entry, produces a product that has no close substitutes.
  - (3) In monopolistically competitive markets, a large number of relatively small firms produce differentiated products without any barriers to entry.
  - (4) In oligopoly markets, there are only a few firms whose profits are interdependent—each firm's decisions about pricing, output, advertising, and so forth affects all other firms' profits—with varying degrees of product differentiation.
25. Globalization of markets is the economic integration of markets located in nations around the world. Globalization provides managers with both an opportunity to sell more goods and services to foreign buyers as well as the threat of increased competition from foreign producers.

## Matching Definitions

accounting profit  
 business practices and tactics  
 economic profit  
 equity capital  
 explicit costs  
 globalization of markets  
 implicit costs  
 industrial organization  
 marginal analysis  
 market  
 market power  
 market structure  
 market-supplied resources

microeconomics  
 moral hazard  
 opportunity cost  
 owner-supplied resources  
 price-setting firm  
 price-taking firm  
 principal-agent problem  
 risk premium  
 strategic decisions  
 total economic cost  
 transaction costs  
 value of a firm

1. \_\_\_\_\_ Source of most of the advances over the past 30 years in strategic decision making.
2. \_\_\_\_\_ Resources owned by others and hired, rented, or leased in resource markets.
3. \_\_\_\_\_ Resources owned and used by a firm.
4. \_\_\_\_\_ Sum of opportunity costs of market-supplied resources plus opportunity costs of owner-supplied resources.
5. \_\_\_\_\_ Monetary opportunity costs of using market-supplied resources.
6. \_\_\_\_\_ Nonmonetary opportunity costs of using owner-supplied resources.
7. \_\_\_\_\_ Money provided to businesses by the owners.
8. \_\_\_\_\_ Amount that total revenue exceeds total economic cost.
9. \_\_\_\_\_ Decisions that attempt to alter the conditions of competition in order to increase long-run profits.
10. \_\_\_\_\_ Price for which a firm can be sold, or equivalently, the present value of the expected future profits of the firm.
11. \_\_\_\_\_ Amount added to the riskless discount rate to account for uncertainty associated with the expected future profits.
12. \_\_\_\_\_ Conflict arising when the objectives of the agent differ from those of the principal, and the principal has difficulty enforcing and monitoring the agent.
13. \_\_\_\_\_ Exists when either party to an agreement has an incentive not to abide to the agreement and one party cannot cost-effectively monitor the agreement or cannot effectively enforce the agreement.
14. \_\_\_\_\_ A firm that cannot set the price of the product it sells, since market forces determine the price.

15. \_\_\_\_\_ A firm that has the ability to raise the price of its product without losing all of its sales.
16. \_\_\_\_\_ Routine business decisions based on marginal analysis.
17. \_\_\_\_\_ Any arrangement through which buyers and sellers interact to exchange products, services, resources for production, or in general, anything of value.
18. \_\_\_\_\_ Additional costs over and above the price paid that arise in the process of making transactions.
19. \_\_\_\_\_ Swiss army knife for explaining most business practices and tactics.
20. \_\_\_\_\_ Economic integration of markets located in nations around the world.
21. \_\_\_\_\_ What a firm's owners give up to use resources to produce goods or services.
22. \_\_\_\_\_ Difference between total revenue and explicit costs.
23. \_\_\_\_\_ Set of characteristics that determines the economic environment in which a firm does business.
24. \_\_\_\_\_ Key to the kingdom of microeconomics.
25. \_\_\_\_\_ Ability to raise price without losing all sales.

## Study Problems

1. In 2010 Terry Brady, the legendary athlete from Indiana, decided to leave his job as head football coach at Mattoon High School to open Brady Advantage, his own sporting goods store, in Terre Haute. By locating Brady Advantage halfway between St. Louis and Indianapolis, Brady hoped to attract customers from both large metropolitan markets. A partial income statement for Brady Advantage follows:

	<b>2010</b>
<b>Revenues</b>	
Revenue from sales of goods and services	\$210,000
<b>Operating costs and expenses</b>	
Costs of products and services sold	\$82,000
Selling expenses	\$6,000
Administrative expenses	\$12,000
<b>Total Operating Costs &amp; Expenses</b>	<b>\$100,000</b>
Income from operations	\$110,000
Interest expense (bank loan)	\$14,000
Non-recurring expenses to start business	\$8,000
Income taxes	\$16,000
<b>Net income</b>	<b>\$72,000</b>

Terry Brady's coaching job at Mattoon High paid \$45,000 of annual salary and benefits. To get the sporting goods store opened, Brady used \$50,000 of his personal savings, which was earning a guaranteed 12 percent annual rate of return.

Brady opened his store in a building that he owned in Terre Haute. Prior to opening his store, the building was rented for \$24,000 per year.

- a. In 2010, Brady Advantage incurs \$ \_\_\_\_\_ of total explicit costs for using market-supplied resources.
  - b. In 2010, the opportunity cost of Brady's equity capital is \$ \_\_\_\_\_.
  - c. The total implicit cost of using owner-supplied resources in 2010 is \$ \_\_\_\_\_.
  - d. The total opportunity cost of resources used by Brady Advantage in 2010 is \$ \_\_\_\_\_. The total economic cost in 2010 is \$ \_\_\_\_\_.
  - e. The accounting profit for Brady Advantage in 2010 is \$ \_\_\_\_\_.
  - f. Based on his profit in 2010, did Terry Brady increase his wealth by quitting his job at Mattoon High and opening Brady Advantage? Explain your answer carefully. [Hint: Compute economic profit in 2010].
2. During a year of operation, a firm collects \$5,000,000 in revenue and spends \$3,500,000 on labor expense, raw materials, rent, and utilities. The firm's owner has provided \$1,000,000 of her own money instead of investing the money and earning a 12 percent annual rate of return.
- a. The explicit costs of the firm are \$ \_\_\_\_\_. The implicit costs are \$ \_\_\_\_\_. Total economic cost is \$ \_\_\_\_\_.
  - b. The firm earns accounting profit of \$ \_\_\_\_\_.
  - c. The firm's economic profit is \$ \_\_\_\_\_.
  - d. If the owner could earn 15 percent annually on the money she has invested in the firm, the economic profit of the firm would be \_\_\_\_\_ (when revenue is \$5,000,000).
3. Over the next three years, a firm is expected to earn economic profit of \$700,000 in the first year, \$800,000 in the second year, and \$500,000 in the third year. After the end of the third year, the firm goes out of business.
- a. If the risk-adjusted discount rate is 16 percent for each of the next three years, the value of the firm is \$ \_\_\_\_\_. The firm can be sold today for a price of \$ \_\_\_\_\_.
  - b. If the risk-adjusted discount rate is 10 percent for each of the next three years, the value of the firm is \$ \_\_\_\_\_. The firm can be sold today for a price of \$ \_\_\_\_\_.
4. For each of the following managers, decide whether the manager is likely to be a price-setter (possesses market power) or a price-taker (does not possess market power).
- a. The loan officer at a bank decides what interest rate to charge on car loans made to Chicago-area buyers of new cars.
  - b. The manager of FastCo Inc., a manufacturer of standardized fasteners, such as screws and machine bolts.
  - c. The CEO of Bombardier, a manufacturer of a popular brand of jet skis.
  - d. The owner-manager of a McDonald's hamburger restaurant, which is the first hamburger restaurant to open in a new suburban neighborhood.

5. For each of the firms below, identify the market structure that best matches the competitive characteristics found in that firm's market.
  - a. Microsoft Corporation, in the market for business-application software, such as word processing, spreadsheet, and database.
  - b. Becker Brothers Farms, a 1,000-acre wheat farm near Beaver City, Nebraska.
  - c. Robo Wash, the only coin-operated car wash in Monroe, Louisiana.
  - d. The Jumping Bean, a family-owned Mexican food restaurant in San Antonio, Texas.
  - e. Après Ski, one of only two restaurants licensed to operate at the base of the main ski lift in Park City, Utah.
6. The *Wall Street Journal* (Special Report on Executive Pay April 6, 2000) reported that some stockholders of Ben & Jerry's Homemade, Inc. were upset that the firm's new senior director of business development was given a guaranteed bonus of at least \$75,000 in his two-year contract.
  - a. What is the problem with a guaranteed bonus for managers?
  - b. In light of the problem discussed in part *a*, why might Ben & Jerry's nonetheless wish to offer new managers guaranteed bonuses?

## Multiple Choice / True-False

1. Economic theory is a valuable tool for business decision making because it
  - a. assumes away the problem.
  - b. identifies for managers the essential information for making a decision.
  - c. creates a realistic, complex model of the business firm.
  - d. provides an easy solution to complex business problems.
2. Microeconomics
  - a. studies the behavior of individual economic units or segments of the economy.
  - b. contributes to the understanding of ordinary business practices or tactics.
  - c. is generally too complex and abstract to be of much use in making real-world business decisions.
  - d. All of the above.
  - e. Both a and b.
3. The total opportunity cost of using owner-supplied resources
  - a. does not involve monetary payments and so can be ignored when computing economic profit.
  - b. is part of the business firm's total economic cost.
  - c. equals the sum of all opportunity costs of using resources obtained by the firm in various resource markets.
  - d. must be covered by revenues or economic profit will be negative and owner's wealth will be reduced.
  - e. both *b* and *d*.



4. Economic profit equals
  - a. total revenue minus implicit costs.
  - b. total revenue minus explicit costs.
  - c. accounting profit minus explicit costs.
  - d. accounting profit minus the total cost of using owner-supplied resources.
  - e. accounting profit plus the total costs of using market-supplied resources.
5. When economic profit is positive,
  - a. total revenue exceeds total economic cost, and the business owners' wealth increases.
  - b. the firm may not earn enough to cover the costs of using owner-supplied resources.
  - c. the firm earns more than enough revenue to cover the opportunity costs of all of the resources it uses.
  - d. both *a* and *c*.
6. The value of a firm is
  - a. smaller the higher is the risk premium used to compute the firm's value.
  - b. larger the higher is the risk premium used to compute the firm's value.
  - c. the price for which the firm can be sold minus the present value of expected future profits.
  - d. equal to the dollar value of a firm's ownership stake in the capital equipment holdings of the firm.
7. Suppose Maverick, the owner-manager of Western Wear Depot, earned \$240,000 in revenue last year. Maverick's explicit costs of operation totalled \$300,000. Maverick has a bachelor's degree in education and could be earning \$40,000 annually as a high school teacher.
  - a. Maverick's total economic cost is \$300,000.
  - b. Maverick's accounting profit is -\$100,000.
  - c. Maverick incurs \$40,000 of implicit costs.
  - d. Maverick's economic profit is -\$60,000.
  - e. both *c* and *d*.
8. A risk premium
  - a. is subtracted from the discount rate when calculating the present value of a future stream of risky profits.
  - b. accounts for the riskiness of future profits.
  - c. is lower the more risky the future stream of profits.
  - d. is an additional compensation paid to the workers of a business enterprise.
9. Owners of a firm want the managers to make business decisions that will
  - a. maximize the value of the firm.
  - b. maximize expected profit in each period of operation.
  - c. maximize the market share of the firm.
  - d. both *a* and *b* when revenue and cost conditions in one time period are independent of revenues and costs in future time periods.

10. The principal-agent problem arises when the principal
  - a. and the agent have different objectives.
  - b. cannot enforce the contract agent or finds it too costly to monitor the agent.
  - c. cannot decide whether the firm should seek to maximize the expected future profits of the firm or maximize the price for which the firm can be sold.
  - d. both *a* and *b*.
  - e. both *a* and *c*.
  
11. Moral hazard
  - a. occurs when managers pursue maximization of profit without regard to the interests of society in general.
  - b. exists when either party to a contract has an incentive to cancel the contract.
  - c. occurs only rarely in modern corporations.
  - d. is the cause of principal-agent problems.
  - e. both *a* and *c*.
  
12. A price-taking firm can exert no control over price because
  - a. price is determined by market forces.
  - b. price is determined by the intersection of demand and supply.
  - c. the firm's individual production is insignificant relative to production in the industry.
  - d. many other firms produce a product that is nearly identical to its product.
  - e. all of the above.
  
13. A price-setting firm
  - a. can lower the price of its product and sell more units.
  - b. can raise the price of its product and sell fewer units but will not lose all of its sales.
  - c. possesses market power.
  - d. sells a product that is somehow differentiated from the product sold by its rivals or sells in a limited geographic market area with only one or a few sellers.
  - e. all of the above.
  
14. Which of the following is NOT one of the features characterizing market structures?
  - a. The number and size of firms.
  - b. The likelihood of new firms entering a market.
  - c. The level of capital investment in research and development.
  - d. The degree of product differentiation.
  
15. In markets characterized by monopolistic competition,
  - a. a large number of relatively small firms sell a differentiated product.
  - b. a small number of relatively large firms sell a standardized product.
  - c. entry into the market is relatively easy so that profit in the long run is zero.
  - d. entry into the market is restricted to that profit may be positive in the long run.
  - e. both *a* and *c*.

16. Which of the following is NOT a characteristic of monopoly market structures?
- A single firm produces the entire market output.
  - The greater the ability of consumers to find imperfect substitutes for the firm's product the lower will be the firm's market power.
  - There are no barriers to entry.
  - No close substitutes for the product are available.
17. T F The effectiveness of a board of directors in monitoring managers will be enhanced by appointing members from the firm who are well-informed about the management problems facing the firm.
18. T F If accounting profit is positive, economic profit must also be positive.
19. T F The value of a firm is smaller the higher is the risk premium used to compute the firm's value.
20. T F In markets characterized by oligopoly, interdependence of firms means that actions of any one firm in the market will have an effect on the sales and profits of all other firms in the market.
21. T F Economic profit is the best measure of a firm's performance because the opportunity cost of using *all* resources is subtracted from total revenue.
22. T F Economic profit
23. T F
24. T F dkn
25. T F knk

## Answers

### MATCHING DEFINITIONS

- industrial organization
- market-supplied resources
- owner-supplied resources
- total economic cost
- explicit costs
- implicit costs
- equity capital
- economic profit
- strategic decisions
- value of the firm
- risk premium
- principal-agent problem
- moral hazard
- price-taking firm

15. price-setting firm
16. business practices and tactics
17. market
18. transaction costs
19. marginal analysis
20. globalization of markets
21. opportunity cost
22. accounting profit
23. market structure
24. marginal analysis
25. market power

### **STUDY PROBLEMS**

1.
  - a.  $\$138,000 = \$82,000 + \$6,000 + \$12,000 + \$14,000 + \$8,000 + \$16,000$
  - b.  $\$6,000 = \$50,000 \times 0.12$  (Note that the *amount* of equity capital is \$50,000 while the *opportunity cost* of using the \$50,000 of equity capital is the forgone return caused by removing the \$50,000 from its present investment earning 12 percent annually—i.e., \$6,000 per year.)
  - c. There are three owner-supplied resources in this problem: Brady’s time away from his high school coaching job, his equity capital, and his building that he could have rented. The total implicit cost = \$75,000 (= \$45,000 + \$6,000 + \$24,000).
  - d.  $\$213,000$  (=  $\$138,000 + \$75,000$ );  $\$213,000$ . (Note: Total economic cost is defined as the opportunity cost of *all* resources used by the firm.)
  - e.  $\$72,000 = \text{Total revenue} - \text{explicit costs} = \$213,000 - \$138,000$ . Note that accounting profit is frequently called “net income” in financial statements (as in this problem.)
  - f. Terry Brady’s wealth decreased in 2010 because economic profit is  $-\$3,000$  (=  $\$210,000 - \$138,000 - \$75,000$ ). Only when the owners of businesses earn positive economic profits do they experience an increase in their wealth. Remember, the value of their firm, which is part (or perhaps all) of their wealth, depends on the future stream of economic profit earned by the firm. A year in which profit is zero adds nothing to owner wealth. A year in which profit is negative reduces owner wealth. The value of economic profit,  $-\$3,000$ , indicates Brady would have been \$3,000 better off had he NOT owned and operated Brady Advantage in 2007 but instead collected salary as high school coach of \$45,000, interest of \$6,000, and rent of \$24,000 (which totals \$75,000). As you can see, accounting profit in this example must exceed \$75,000 in order for Brady to break even.
2.
  - a.  $\$3,500,000$ ;  $\$120,000$ ;  $\$3,620,000$
  - b.  $\$1,500,000$
  - c.  $\$1,380,000$
  - d.  $\$1,350,000$
3.
  - a. Value of the firm:
 
$$\frac{\$700,000}{(1.16)^1} + \frac{\$800,000}{(1.16)^2} + \frac{\$500,000}{(1.16)^3}$$

$$= \$603,448 + \$594,530 + \$320,329$$

$$= \$1,518,307 = \text{price of the firm}$$
  - b. Value of the firm:

$$\frac{\$700,000}{(1.10)^1} + \frac{\$800,000}{(1.10)^2} + \frac{\$500,000}{(1.10)^3}$$

$$= \$636,364 + \$661,157 + \$375,657$$

$$= \$1,673,178 = \text{price of the firm}$$

4.
  - a. *Price-taker.* Many banks provide car loans in Chicago. The price of a car loan, which is the interest rate, is determined by market forces of demand and supply.
  - b. *Price-taker.* FastCo Inc. will lose most, if not all, of its sales if it tries to raise its price above the price charged by its rivals—all of which produce a standardized product. FastCo has no market power and is a price-taking firm.
  - c. *Price-setter.* Bombardier enjoys a substantial amount of brand loyalty that gives its manager the ability to raise the price of its jet skis without losing all sales.
  - d. *Price-setter.* At this time, McDonald's is the only hamburger restaurant in the area and consequently enjoys some degree of market power. Over time, however, new restaurants will enter the market if a profit can be earned.
5.
  - a. *Oligopoly.* In office applications, Microsoft is one of just a few firms providing such software and the firms recognize their mutual interdependence in matters of pricing, software features, and service.
  - b. *Perfect Competition.* Becker Bros. Farms is one of thousands of relatively small producers of a standardized product. Furthermore, there are no barriers to entry in wheat farming.
  - c. *Monopoly.* For now, Robo Wash is the only coin-op car wash in Monroe. Robo Wash probably has sufficient market power to be able to raise price without losing all its sales. However, as price goes up, people will turn to substitutes—drive to a nearby town with a car wash, wash the car less frequently, or wash the car at home. In time, high prices will attract entry of new coin-op car washes.
  - d. *Monopolistic competition.* The market for Mexican food in San Antonio is characterized by a large number of restaurants producing somewhat differentiated dining experiences without any protection from entry of new rival restaurants.
  - e. *Oligopoly.* The two restaurants face interdependent profits and, in this case, also enjoy an entry barrier (the license).
6.
  - a. Principal-agent problems can be mitigated to some extent by linking manager compensation to the performance of the firm. Guaranteed bonuses are paid no matter how well the firm performs, and so undermine the incentive of a manager to make decisions that maximize the value of a firm.
  - b. Maximizing the value of a firm also requires hiring successful managers (or taking greater risk by hiring inexperienced managers). If labor markets for managerial talent are tight, then firms may be required to increase compensation to attract talented managers. By guaranteeing a bonus, Ben & Jerry's not only increases a manager's compensation by \$75,000, but also reduces the risk associated with that compensation (it is guaranteed).

**MULTIPLE CHOICE / TRUE-FALSE**

1. *b* Theory provides important clues to managers about the kinds and amounts of information that will be needed to make decisions.
2. *e* The cost of owner-supplied resources may not involve an out-of-pocket payment, but these implicit costs are nonetheless costs to owners and must be covered to retain the use of the owner-supplied resources.
3. *d* Economic profit = Accounting profit – Implicit costs. Implicit costs are the opportunity costs of using owner-supplied resources.
4. *d* Both *a* and *c* are true by the definition of economic profit, and the wealth of owners increases only when economic profit is positive.
5. *a* The higher is the risk premium, the larger is the risk-adjusted discount rate used to calculate the present value of future profits.
6. *c* The implicit cost of Maverick's time is \$40,000, so economic profit is  $-\$100,000$  ( $= 240,000 - 300,000 - 40,000$ ).
7. *b* This is the definition of risk premium.
8. *d* Making business decisions that maximize profit in each separate time period will result in maximization of the value of the firm, as long as revenue and cost conditions in any single period are unrelated to revenues and costs in other time periods.
9. *d* Both *a* and *b* follow from the discussion of principal-agent problems in the textbook.
10. *d* Principal-agent problems arise when there is a moral hazard.
11. *e* Price-taking firms cannot control the price of their product because there are too many producers selling an identical product. The price, under these circumstances, is determined not by one firm, but by the market forces of demand and supply.
12. *e* Price-setting firms can control the price of their products by increasing or decreasing production along their downward sloping demand curves. They possess this market power because consumers do not have many substitutes from which to choose.
13. *c* Research and development expenditure is not a characteristic of market structure, although such expenditures may be part of a strategic plan by management to create barriers to entry or to differentiate a product in the future.
14. *e* Both *a* and *c* are characteristics of monopolistic competition.
15. *c* A monopoly requires an entry barrier, otherwise, raising price above cost results in new firms entering, which eliminates the monopoly.
16. *F* The opposite is true; outsiders on the board of directors tend to enhance the monitoring function of a board.
17. *F* Accounting profit can be positive, but when the opportunity cost of using resources owned by the firm is subtracted from positive accounting profit, the resulting economic profit may be zero or negative.
18. *T* Risk is an undesirable attribute of business profits. For a given level of expected profit, the smaller the associated risk, the more investors are willing to pay for a claim on this profit.
19. *T* Interdependence of sales and profits is the hallmark of oligopoly.
20. *T* As emphasized in the text, owners of businesses recognize that costs of using all resources, whether the resources are purchased in resource markets or owned by the firm. Only economic profit subtracts from total revenue all costs of using resources.

## Homework Exercises

1. A partial income statement from CenTer Realty, Inc. is shown below:

	<u>2011</u>
Revenues	
Revenue from sales of goods and services .....	\$53,750,000
Operating costs and expenses:	
Cost of products and services sold .....	\$26,000,000
Selling expenses .....	\$5,235,000
Administrative expenses .....	\$4,237,000
Total operating costs and expenses .....	<u>\$35,472,000</u>
Income from operations .....	<u>\$18,278,000</u>
Interest expense (corporate bonds & loans).....	\$875,000
Non-recurring legal expenses .....	\$585,000
Income taxes .....	\$10,245,000
Net income.....	<u>\$6,573,000</u>

In 2011, CenTer Realty owned and occupied an office building in downtown Kansas City. The building could have been leased to other businesses for \$3,000,000 in lease income for 2011. CenTer Realty also owned undeveloped land valued at \$32,000,000. Owners of CenTer Realty can earn a 9 percent rate of return on funds invested elsewhere.

- In 2011, CenTer Realty's total explicit costs of using market-supplied resources are \$\_\_\_\_\_.
- CenTer's total implicit costs of using owner-supplied resources equals \$\_\_\_\_\_ in 2011.
- Total economic cost is \$\_\_\_\_\_.
- CenTer's accounting profit is \$\_\_\_\_\_.
- Economic profit in 2011 is \$\_\_\_\_\_.
- The Board of Directors believes CenTer's owners can earn 14 percent, rather than 12 percent on funds invested elsewhere. At a 14 percent rate of return, economic profit in 2011 is \$\_\_\_\_\_.

2. At the beginning of 2011, market analysts expect Atlantis Company, holder of a valuable patent, to earn the following stream of economic profits over the next five years. At the end of five years, Atlantis will lose its patent protection, and analysts expect economic profit to be zero after five years.

Year	<i>Expected Economic Profit</i>
2008	\$2,000,000
2009	\$3,000,000
2010	\$4,000,000
2011	\$5,000,000
2012	\$2,000,000

- a. If investors apply an annual risk-adjusted discount rate of 8 percent, the value of Atlantis Company in 2011 is \$ \_\_\_\_\_, which is also the maximum price they would be willing to pay for Atlantis.
- b. If investors apply an annual risk-adjusted discount rate of 12 percent, the value of Atlantis Company in 2011 is \$ \_\_\_\_\_, which is also the maximum price they would be willing to pay for Atlantis.
3. For each of the firms below, identify the market structure that best matches the competitive characteristics found in that firm's market:
- a. \_\_\_\_\_ *BusinessWeek* magazine
- b. \_\_\_\_\_ Exxon Corporation
- c. \_\_\_\_\_ Dow Chemical, wholesale chemicals
- d. \_\_\_\_\_ Pfizer, Inc., supplier of Viagra
4. Explain why SunKist, a well-known citrus producer, is a price-taker.
5. Explain why the Lexus dealer in your city is a price-setting firm. Be sure to discuss the concept of market power.