CHAPTER 10
IDENTIFYING MARKETS AND MARKET STRUCTURES

Chapter in a Nutshell

When should we consider goods to be part of the same market? Clearly, two identical goods belong to the same market. But what about a pair of goods that are similar — like a Hershey’s bar and a Nestlé’s bar? Are they part of the same market? We need to be able to define the relevant market. The first part of this chapter explores how it is possible to identify markets. You’ll find that the cross elasticity of demand is a useful measure to help us determine whether or not two goods are part of the same market. The rest of the chapter is devoted to a descriptive analysis of different market structures. The range of market structures extends from markets with one firm — monopoly — markets with a few firms — oligopoly — to markets with many firms — monopolistic competition — to markets with considerable numbers of firms — perfect competition. You’ll come to appreciate the variety in market structures.

After studying this chapter, you should be able to:

• Use the cross elasticity of demand to define the relevant market.
• Describe the four types of market structures.
• Discuss the conditions necessary for monopoly to exist.
• Contrast oligopoly and monopolistic competition.
• Account for the existence of advertising in many markets.
• Detail the characteristics of perfectly competitive markets.

Concept Check — See how you do on these multiple-choice questions.

Recall that the cross elasticity coefficient allows us to categorize goods as substitutes or complements as you think about the possible answers to this question.

1. If two goods are in the same relevant market, then the cross elasticities between these goods are
   a. less than one
   b. zero
   c. positive and relatively high
   d. difficult to measure
   e. negative

The following question asks you to think about the number of firms in monopoly and perfect competition.

2. Monopoly and perfect competition represent
   a. the only two market structures that are identifiable
   b. the two extremes on the spectrum of market structures
   c. market structures that exist in theory only
   d. market structures where product differentiation is practiced
   e. the most profitable market structures
Being a monopolist is an attractive prospect for a firm. How does a monopolist stay a monopolist?

3. Exclusive access to resources, acquisition, and **patents** are ways that a natural monopoly
   a. maintains barriers to entry
   b. enters more competitive markets
   c. guarantees a profit
   d. maximizes the price of the firm’s stock
   e. avoids losses

What is your favorite soft drink? Would you still drink it if the price went up a nickel a can? A dime a can? Why or why not?

4. **Brand loyalty** permits a firm in monopolistic competition or oligopoly to
   a. maintain a monopoly
   b. prevent entry
   c. expand market share
   d. make the demand for its product more inelastic
   e. prevent product differentiation

What is the relationship between the size of firms and the size of the market in perfect competition?

5. In **perfect competition**, the market share for the firm is
   a. insignificant
   b. growing through aggressive advertising
   c. dependent on the elasticity of demand for the firm’s product
   d. dependent on brand loyalty
   e. usually very large

**Am I on the Right Track?**

Your answers to the questions above should be **c, b, a, d, and a**. Grasping the material in this chapter requires careful reading and the application of some logical reasoning. For example, the fact that a perfectly competitive firm is extremely small relative to the market has implications for the shape of its demand curve. The demand curve facing the firm is horizontal at a price that is determined in the market. That’s why the firm is called a price-taker. The logic is clear. If the firm is so small that it cannot influence the market price, then it must be able to sell all it wants to at the market price. Hence the demand curve for the perfectly competitive firm is horizontal. On the other hand, a firm that has some control over its price, such as a monopoly or monopolistic competitive firm, faces a demand curve that is downward sloping.

**Key Terms Quiz** — Match the terms on the left with the definitions in the column on the right.

1. relevant market  _____ a. price changes by one firm in oligopoly affect pricing by other firms
2. market structure  _____ b. a few firms that produce goods that are close substitutes
3. mutual interdependence  _____ c. one firm producing a good with no close substitutes
4. monopoly  _____ d. consumer willingness to buy a good at a price higher than the price of its substitutes
5. industry  _____ e. a set of goods with high cross elasticities among them
6. natural monopoly  _____ f. the percentage of total market sales produced by a particular firm
7. patent  _____ g. large number of firms producing goods that are perfect substitutes
8. monopolistic competition  _____ h. a set of market characteristics common to a group of firms
Graphing Tutorial

Natural monopoly results when the combination of the market demand and the firm’s costs is such that only one firm is able to produce profitably in a market. Typically, the fixed cost involved in setting up production for the goods supplied by a natural monopoly is so high that the firm must have access to a large market in order to bring its average total cost down sufficiently to allow for profitable operation. Examples of natural monopolies include major league sports franchises (the stadium with luxury box seats is a fixed cost), city bus companies, municipal water companies, the electric company, and the gas company.

The key to graphing a natural monopoly is to be careful to draw the average total cost curve so that it slopes downward in the range of output being considered. The demand curve is positioned so that only one firm can operate profitably within this range of output. The graph drawn below shows a natural monopoly — the municipal water company. The average total cost curve is pulled down over the range of output corresponding to the city’s demand for water because of the high fixed cost of supplying water — wells, pipes, a water tower, purification system, etc.

Suppose the water company maximizes profits by producing 100 million gallons of water at a price read from the demand curve equal to $.70 per gallon. The monopoly’s profits are ($0.70 - $0.50) x 100 million gallons = $20 million. What would happen if a second water company entered the market? It would be split between the two firms, each supplying 50 million gallons at an average total cost equal to $.90 per gallon. Each firm would charge $.70 per gallon; thus, the loss for each firm would be equal to ($0.90 - $0.70) x 50 million gallons = $10 million. Neither firm could survive.
Graphing Pitfalls

A problem you might encounter drawing the graph for a natural monopoly is to mistakenly place the demand curve too far above the average total cost curve so that the market could support more than one firm profitably. The graph below shows this situation.

With one water company supplying the community, the firm’s profits are equal to $(.70 - .20) \times 150$ million gallons = $75$ million. Suppose we split the market between two firms. Each firm’s profits are equal to $(.70 - .50) \times 75$ million gallons = $15$ million. Certainly, one firm is more profitable than two. But the market is big enough to support two firms profitably. Therefore, this graph does not represent natural monopoly.

True-False Questions — If a statement is false, explain why.

1. A relevant market contains a set of goods whose cross elasticities with others in the set are relatively high and whose cross elasticities with goods outside the set are relatively low. (T/F)

2. Since movie theaters and video arcades provide highly substitutable services, they may be considered part of the entertainment market. (T/F)

3. Because DuPont controlled 80 percent of cellophane production in the early 1950s, the courts ruled that it exercised monopoly power. (T/F)

4. The cross elasticity of demand is the percentage change in demand for one good generated by a percentage change in price for another good. (T/F)
5. Mutual interdependence is a term economists use to describe any price change made by one firm in an oligopoly that affects the pricing behavior of other firms in the oligopoly. (T/F)

6. Firms in a market that is perfectly competitive produce goods that are perfect substitutes for each other. (T/F)

7. The most important characteristic that distinguishes one market structure from another is the size of the firms in the market. (T/F)

8. According to F. M. Scherer, a cross elasticity of 3.0 is high enough for a pair of goods to be considered part of the same market. (T/F)

9. A firm in perfect competition is free to set price at whatever level it pleases. (T/F)

10. In monopoly, the firm is the industry. (T/F)

11. A monopolist’s demand curve will be horizontal at the market price. (T/F)

12. The intended effects of advertising are to increase the market share for a firm and to make the demand for the product more elastic. (T/F)

13. Entry into monopolistic competition or oligopoly is not free, but it is possible. (T/F)

14. Natural monopolies typically have high fixed costs, so only one firm is able to serve the market at a profit. (T/F)

15. Brand loyalty describes the willingness of consumers to buy a good at a higher price than the price of its close substitutes. (T/F)

Multiple-Choice Questions

1. In the DuPont case discussed in the text, the government argued that DuPont had a near monopoly position in the market for cellophane; thus, DuPont
   a. was broken up into smaller competitive companies to produce cellophane
   b. had to show that the relevant market was the broader market for packaging materials
   c. had to lower its price for cellophane
   d. voluntarily reimbursed consumers for overcharging them
   e. stockholders fired their managers and replaced them with a more competitive group
2. In cases of antitrust violations, the key issue is often
   a. identification of the market
   b. the amount of advertising done
   c. whether a patent is valid
   d. environmental damage
   e. price elasticity of supply

3. All of the following are true about two goods with high cross elasticities of demand except that
   a. they cannot be in the same market because each has complete control of its own market
   b. they must be in the same market
   c. a small percentage increase in the price of one good will lead to a large percentage increase in demand for the other good
   d. they are close substitutes
   e. they must serve very similar needs for consumers

4. If the cross elasticity of demand between two goods is ______, then they are considered to be in different markets.
   a. 2
   b. 4
   c. 6
   d. 8
   e. 16

5. Courts have decided cases by considering cross elasticities of demand in order to
   a. measure monopoly profit
   b. help alert consumers to unfair business practices
   c. determine the degree of competition in industries where antitrust suits are involved
   d. distinguish between oligopoly and monopolistic competition
   e. distinguish between monopolistic competition and perfect competition

6. In oligopoly
   a. firms compete with each other only by raising and lowering quantity because prices are fixed
   b. the fewness of firms creates mutual interdependence in pricing among the firms
   c. the firm is the industry
   d. firms have no difficulty entering and leaving the market
   e. the firm having a natural monopoly sets price for the others

7. The difference between a market and an industry is that
   a. industries consist of markets producing the same good while markets consist of firms producing substitute goods
   b. industries consist of firms producing the same good while markets consist of industries producing substitute goods
   c. industries are collections of markets while markets are collections of firms
   d. firms make up a market while markets make up an industry
   e. industries are substitutes for markets, but markets are not substitutes for industry

8. Product differentiation refers to
   a. different prices for the same good
   b. different goods that have identical prices
   c. differences among goods in a market that make them close, but not perfect substitutes for each other
   d. markets that differ from industries because their goods are essentially different
   e. the firm's ability to create different goods while using the same technology and resources
9. Which of the following is not characteristic of natural monopoly?
   a. a declining average total cost over the firm's relevant range of production
   b. a prohibitively high average total cost for each firm if two or more firms are in the market
   c. production in an environment of high fixed costs
   d. a desire to earn the maximum economic profit
   e. a marginal cost curve that is above the average total cost curve

10. The monopolist's demand curve is ________ whereas the perfectly competitive firm's demand curve is ________.
    a. always downward sloping; always horizontal
    b. always horizontal; always downward sloping
    c. the market demand curve; the industry demand curve
    d. fixed because it represents just one firm; variable because it is only a fraction of the industry's demand
    e. inelastic along its entire range; unit elastic along its entire range

11. Taco Bell, McDonald’s, Wendy’s, Burger King, Hardees, and Arby’s are best described as operating in which of the following market structures?
    a. perfect competition
    b. monopolistic competition
    c. oligopoly
    d. monopoly
    e. natural monopoly

12. All of the following are true about advertising except that it
    a. plays a more effective role in monopolistically competitive markets than in perfectly competitive markets
    b. is used to reduce product differentiation
    c. is used to make a firm's demand curve more inelastic
    d. is used to increase a firm's market share
    e. is used to reduce consumer sensitivity to price changes

13. As a firm loses its monopoly status, becoming more competitive as new firms enter the market, the ex-monopoly firm's demand curve
    a. remains the same but is now only part of market demand
    b. shifts to the left and becomes more elastic
    c. shifts to the left and becomes more inelastic
    d. shifts to the right and becomes more elastic
    e. shifts to the right and becomes more inelastic

14. From an economist’s perspective, the purpose of advertising is to
    a. shift the demand curve to the right and make it more inelastic
    b. shift the demand curve to the left and make it more elastic
    c. shift the demand curve to the right and make it more elastic
    d. shift the demand curve to the left and make it more inelastic
    e. encourage consumers to purchase goods and services that they don’t really need
15. Ordering market structures according to the ease of entry for new firms from easy entry to more difficult entry, we have
   a. monopoly, oligopoly, monopolistic competition, perfect competition
   b. perfect competition, oligopoly, monopolistic competition, monopoly
   c. perfect competition, oligopoly, monopolistic competition, natural monopoly
   d. perfect competition, oligopoly, monopoly, monopolistic competition
   e. perfect competition, monopolistic competition, oligopoly, monopoly

16. If new firms are eventually able to enter a market once dominated by a monopoly, the market structure changes from monopoly to
   a. oligopoly, to perfect competition, to monopolistic competition
   b. monopolistic competition, to oligopoly, to perfect competition
   c. perfect competition, to oligopoly, to monopolistic competition
   d. oligopoly, to monopolistic competition, to perfect competition
   e. monopolistic competition, to perfect competition, to monopolistic competition

17. A firm's influence over the price of the good produced in monopoly, oligopoly, monopolistic competition, and perfect competition is, respectively,
   a. complete, considerable, little, none
   b. none, little, considerable, complete
   c. considerable, none, little, complete
   d. little, none, complete, considerable
   e. complete, little, considerable, none

18. A perfectly competitive firm's demand curve is horizontal because
   a. the product it sells is a perfect substitute for the products of other firms
   b. its advertising is extremely effective
   c. demand for the firm’s product is extremely inelastic
   d. entry is easy
   e. the cross elasticity of demand among the firms’ products is close to zero

19. One significant difference between oligopoly and monopolistic competition is that
   a. oligopoly firms never advertise
   b. firms in monopolistic competition produce goods that are perfect substitutes, but the product is differentiated in oligopoly
   c. entry is more difficult in oligopoly
   d. monopolistic competition is more like monopoly since there are fewer firms
   e. advertising is only noted in monopolistic competition

20. A firm in perfect competition faces a horizontal demand curve for all of the following reasons except that
   a. the firm takes the price as given from the market
   b. the firm is unable to influence the market price because of its small size
   c. the product the firm sells is identical to the product sold by other firms in the market
   d. the firm’s sales are limited so it is impossible for the firm to sell more and lower the price
   e. the firm can sell as much as it wants at the price established in the market
The following questions relate to the interdisciplinary, applied, and historical perspectives in the text.

21. Suppose that an economist is asked to write literary criticism about Guy de Maupassant’s short story “The Diamond Necklace.” An economist would likely regard the story as cruelly ironic because
   a. Mme. Loisel and Mme. Forestier both evaluated the cross elasticity of demand between a glass necklace and a diamond necklace to be high
   b. Mme. Loisel could not tell that the necklace she lost was glass but Mme. Forestier could tell that the necklace returned to her was diamond
   c. Mme. Forestier could not tell that the necklace she lost was glass but Mme. Loisel could tell that the necklace returned to her was diamond
   d. both women overvalued the necklace that was lost
   e. both women undervalued the necklace that was lost

22. Once the Nike brand became established in the market for running shoes, the company found that it could extend into other markets such as general purpose athletic shoes, athletic apparel, and upscale retailing in major cities by
   a. producing the best quality products
   b. acquisition of competing firms
   c. selling its products for less than the competitors
   d. marketing its logo – the swoosh
   e. aggressive advertising focusing on the deficiencies in competitors products

23. The market for beer in Germany is
   a. a pure monopoly
   b. perfect competition
   c. sheltered from foreign competition by the German beer purity law
   d. open to foreign competition
   e. completely closed to foreign competition

24. Research regarding brand loyalty among consumers of various products has found that brand loyalty would likely be lowest for
   a. cigarettes
   b. trash bags
   c. pain relief medication
   d. laxatives
   e. toothpaste

Fill in the Blanks

1. ________________________ is an important tool used to identify which goods belong to which markets.

2. ________________________ and ________________________ are marked by the potential entry of firms, although entry may be difficult.

3. Advertising can play a significant role in _______________ and _______________.

4. Monopoly is maintained through barriers to entry that may include _______________.
   ___________________ , _______________, and _______________.

5. Perfect competition consists of ____________________ producing goods that are ____________________.

**Discussion Questions**

1. How does one identify a market?

2. Why are court decisions involving identification of markets sometimes overturned on appeal as in the Alcoa case?

3. Distinguish between an industry and a market.

4. Consider your two favorite soft drinks. Suppose the price of a two-liter bottle of your second choice falls. How much of a price decrease would it take to induce you to substitute the second for your first choice? Estimate the cross elasticity of demand for the drinks. Are they part of the same market?

5. Explain how the number of producers in a market varies from one market structure to another.

6. Suppose a market becomes more competitive over time. What happens to the elasticity of demand for a
particular firm's good as its market becomes more competitive?

**Everyday Applications**

Think about your daily purchases. How are they distributed among the different industry structures that were presented in the chapter? For example, what sort of goods do you purchase from monopolists, oligopolists, monopolistically competitive firms, and perfectly competitive firms?

**Economics Online**

Farmers’ markets, street markets, and flea markets, are increasingly popular. Each is a collection of markets offering thousands of products — some are more competitive than others. Explore this side of the world of markets at this site ([http://www.openair.org/](http://www.openair.org/)). Try to pick out elements of monopoly power and evidence for perfect competition in these different settings.

**Answers to Questions**

**Key Terms Quiz**

- a. 3  
- b. 9  
- c. 4  
- d. 11  
- e. 1  
- f. 12  
- g. 13  
- h. 2  
- i. 10  
- j. 6  
- k. 8  
- l. 7  
- m. 5

**True-False Questions**

1. True
2. True
3. False. The courts ruled that cellophane was a part of the broader market for packaging materials.
4. True
5. True
6. True
7. False. The most important characteristic that distinguishes one market structure from another is the number of firms in the market.
8. True
9. False. The firm does not choose the price — it is set in the market by market demand and market supply.
10. True
11. False. A monopolist’s demand curve is the industry demand curve, so it is downward sloping.
12. False. The intended effects of advertising are to increase the market share for the firm and to make the demand for the product more inelastic. In this way, the firm can raise price without losing many sales.
13. True
14. True
15. True

**Multiple-Choice Questions**

- 1. b  
- 2. a  
- 3. a  
- 4. a  
- 5. c  
- 6. b  
- 7. b  
- 8. c  
- 9. e  
- 10. a  
- 11. b  
- 12. b  
- 13. b  
- 14. a  
- 15. e  
- 16. d  
- 17. a  
- 18. a  
- 19. c  
- 20. d  
- 21. a  
- 22. d  
- 23. c  
- 24. b
Fill in the Blanks

1. cross elasticity
2. oligopoly; monopolistic competition
3. oligopoly; monopolistic competition
4. natural monopoly; patents; acquisition; exclusive access to resources
5. many, many firms; perfect substitutes (or identical)

Discussion Questions

1. The best way to identify a market is to compare the cross elasticities of goods. If they are relatively high they belong to the same market. A market consists of a set of goods whose cross elasticities are relatively high and whose cross elasticities with goods outside the set are low.

2. Identifying a market is primarily a judgment call. Reasonable people can look at the same evidence and arrive at different conclusions. What the courts attempt to do is to hand down impartial judgments about what constitutes a relevant market. There are no hard and fast rules by which to do this. However, measures of the cross elasticity of demand are a guide to determining the extent of the relevant market.

3. Industries consist of firms producing the same good. Markets consist of sets of industries producing close substitute goods. Using the example in the text, the construction market consists of the steel, concrete, and aluminum industries.

4. Clearly, the answer to this one depends on your tastes. Take me, for example. My two favorite soft drinks are 7 Up and Sprite. I have a slight preference for 7 Up, but it is so slight that if the price of 7 Up were to increase by one penny, I would always buy Sprite. That creates a very high cross elasticity of demand. In my case, 7 Up and Sprite are almost perfect substitutes and belong to the same market.

5. A market with one producer is a monopolist; with a few, an oligopoly; with many, monopolistic competition; and with many, many firms, perfect competition.

6. Increased competition leads to increased elasticity. This makes sense because the essence of increased competition is a larger number of firms producing goods that are close substitutes for each other. One of the determinants of the price elasticity of demand is the number of close substitutes. As the number of close substitutes increases, the price elasticity of demand increases. Demand curves in markets where competition is increasing become flatter over time; that is, they become more elastic.
Homework Questions

True-False Questions — If a statement is false, explain why.

1. When the cross elasticity of demand between a pair of goods is greater than three, the goods are considered to be close enough as substitutes to be in the same market. (T/F)

2. Consumers would benefit if natural monopolies were broken up into several firms. (T/F)

3. It is difficult for new firms to enter perfectly competitive markets. (T/F)

4. A basic characteristic of oligopolistic markets is interdependence of decision making among the few firms that comprise the market. (T/F)

5. Successful advertising shifts the demand curve for a product to the left and makes it more elastic. (T/F)

Multiple-Choice Questions

1. Ranking the market structures from most competitive to least competitive, we have
   a. monopoly, oligopoly, monopolistic competition, perfect competition
   b. monopolistic competition, perfect competition, monopoly, oligopoly
   c. perfect competition, oligopoly, monopolistic competition, monopoly
   d. perfect competition, monopolistic competition, oligopoly, monopoly
   e. monopolistic competition, perfect competition, oligopoly, monopoly

2. Which of the following is not an example of a barrier to entry?
   a. acquisition
   b. natural monopoly
   c. patents
   d. product differentiation
   e. control of a natural resource

3. A significant difference between perfect competition and monopolistic competition is that
   a. firms advertise in perfect competition but not in monopolistic competition
   b. the product in perfect competition is differentiated among firms, but in monopolistic competition firms produce perfect substitutes
   c. there are only a few firms in perfect competition, but many firms in monopolistic competition
   d. entry is easier in monopolistic competition than in perfect competition
   e. firms in perfect competition produce perfect substitutes, but in monopolistic competition the firms produce differentiated products
4. Suppose that we observe a market where consumers continue to be willing to purchase a good at a price that rises over time relative to the prices of close substitutes. Such a good demonstrates
   a. a characteristic of oligopoly
   b. brand loyalty
   c. the power of a successful advertising campaign
   d. the value of high quality products
   e. the essence of monopoly

5. A firm that has total fixed costs that are very high relative to total variable costs and can adequately supply the entire market with its production is best described as a(n)
   a. perfectly competitive firm
   b. monopoly with a barrier to entry arising from control over an essential resource
   c. monopolistically competitive firm
   d. natural monopoly
   e. oligopolistic firm

**Discussion Questions/Problems**

1. Draw a graph to represent a natural monopoly and describe the circumstances that would permit natural monopoly to exist. Would it be wise for government to break up natural monopolies? Give some examples of natural monopolies.

2. Explain why the demand curve for a firm in perfect competition is horizontal. Illustrate with a graph.