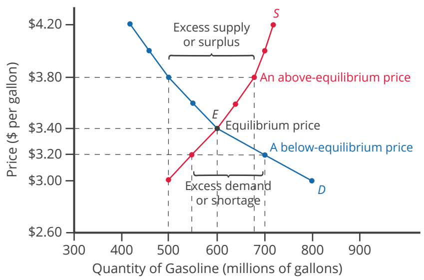
Chapter 3 Exercises

Self-Check Questions

1. Review the following figure. Suppose the price of gasoline is $3.60 per gallon. Is the quantity demanded higher or lower than at the equilibrium price of $3.40 per gallon? What about the quantity supplied? Is there a shortage or a surplus in the market? If so, how much?



2. Why do economists use the *ceteris paribus* assumption?

3. In an analysis of the market for paint, an economist discovers the following listed facts. State whether each of these changes will affect supply or demand, and in what direction.

   a. There have recently been some important cost-saving inventions in the technology for making paint.

   b. Paint is lasting longer, so property owners need not repaint as often.

   c. Because of severe hailstorms, many people need to repaint now.

   d. The hailstorms damaged several factories that make paint, forcing them to close down for several months.

4. Many changes are affecting the market for oil. Predict how each of the following events will affect the equilibrium price and quantity in the market for oil. In each case, sketch a supply and demand diagram to support your answer.

   a. Cars are becoming more fuel-efficient and therefore get more miles to the gallon.

   b. The winter is exceptionally cold.

   c. A major discovery of new oil is made off the coast of Norway.

   d. The economies of some major oil-using nations, like Japan, slow down.

   e. A war in the Middle East disrupts oil-pumping schedules.

   f. Landlords install additional insulation in buildings.

   g. The price of solar energy falls dramatically.

   h. Chemical companies invent a new, popular kind of plastic made from oil.

5. Let's think about the market for air travel. From August 2014 to January to 2015, the price of jet fuel increased roughly 47%. Using the four-step analysis, how do you think this fuel price increase affected the equilibrium price and quantity of air travel?

6. A tariff is a tax on imported goods. Suppose the U.S. government cuts the tariff on imported flat-screen televisions. Using the four-step analysis, how do you think the tariff reduction will affect the equilibrium price and quantity of flat-screen TVs?

7. What is the effect of a price ceiling on the quantity demanded of the product? What is the effect of a price ceiling on the quantity supplied? Why exactly does a price ceiling cause a shortage?

8. Does a price ceiling change the equilibrium price?

9. What would be the impact of imposing a price floor below the equilibrium price?

10. Does a price ceiling increase or decrease the number of transactions in a market? Why? What about a price floor?

11. If a price floor benefits producers, why does a price floor reduce social surplus?

Review Questions

12. What determines the level of prices in a market?

13. What does a downward-sloping demand curve mean about how buyers in a market will react to a higher price?

14. Will demand curves have the same exact shape in all markets? If not, how will they differ?

15. What does an upward-sloping supply curve mean about how sellers in a market will react to a higher price?

16. Will supply curves have the same shape in all markets? If not, how will they differ?

17. What is the relationship between quantity demanded and quantity supplied at equilibrium? What is the relationship when there is a shortage? What is the relationship when there is a surplus?

18. How can you locate the equilibrium point on a demand and supply graph?

19. If the price is above the equilibrium level, would you predict excess supply or excess demand? If the price is below the equilibrium level, would you predict a shortage or a surplus? Why?

20. When the price is above the equilibrium, explain how market forces move the market price to equilibrium. Do the same when the price is below the equilibrium.

21. What is the difference between the demand and the quantity demanded of a product, say milk? Explain in words and show the difference on a graph with a demand curve for milk.

22. What is the difference between the supply and the quantity supplied of a product, say milk? Explain in words and show the difference on a graph with the supply curve for milk.

23. When analyzing a market, how do economists deal with the problem that many factors that affect the market are changing at the same time?

24. Name some factors that can cause a shift in the demand curve in markets for goods and services.

25. Name some factors that can cause a shift in the supply curve in markets for goods and services.

26. How does one analyze a market where both demand and supply shift?

27. What causes a movement along the demand curve? What causes a movement along the supply curve?

28. Does a price ceiling attempt to make a price higher or lower?

29. How does a price ceiling set below the equilibrium level affect quantity demanded and quantity supplied?

30. Does a price floor attempt to make a price higher or lower?

31. How does a price floor set above the equilibrium level affect quantity demanded and quantity supplied?

32. What is consumer surplus? How is it illustrated on a demand and supply diagram?

33. What is producer surplus? How is it illustrated on a demand and supply diagram?

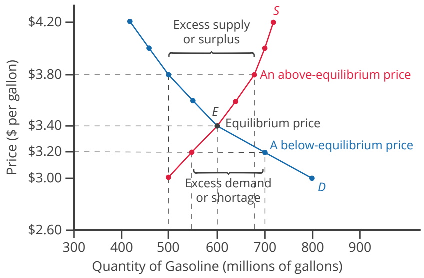
34. What is total surplus? How is it illustrated on a demand and supply diagram?

35. What is the relationship between total surplus and economic efficiency?

36. What is deadweight loss?

Critical Thinking Questions

37. Review the following figure. Suppose the government decided that, since gasoline is a necessity, its price should be legally capped at $3.30 per gallon. What do you anticipate would be the outcome in the gasoline market?



38. Explain why the following statement is false: "In the goods market, no buyer would be willing to pay more than the equilibrium price."

39. Explain why the following statement is false: "In the goods market, no seller would be willing to sell for less than the equilibrium price."

40. Consider the demand for hamburgers. If the price of a substitute good (e.g., hot dogs) increases and the price of a complement good (e.g., hamburger buns) increases, can you tell for sure what will happen to the demand for hamburgers? Why or why not?

41. How do you suppose the demographics of an aging population of baby boomers in the United States will affect the demand for milk? Justify your answer.

42. We know that a change in the price of a product causes a movement along the demand curve. Suppose consumers believe that prices will be rising in the future. How will that affect demand for the product in the present? Can you show this graphically?

43. Suppose there is soda tax to curb obesity. What should a reduction in the soda tax do to the supply of sodas and to the equilibrium price and quantity? Can you show this graphically? (*Hint:* assume that the soda tax is collected from the sellers.)

44. Use the four-step process to analyze the impact of the advent of the iPad (or other tablet computers) on the equilibrium price and quantity of the MacBook (or other laptop computers).

45. Use the four-step process to analyze the impact of a reduction in tariffs on imports of iPads on the equilibrium price and quantity of MacBook-type products.

46. Suppose both of these events took place at the same time. Combine your analyses of the impacts of the iPad and the tariff reduction to determine the likely impact on the equilibrium price and quantity of MacBook-type products. Show your answer graphically.

47. Most government policy decisions have winners and losers. What are the effects of raising the minimum wage? It is more complex than simply producers lose and workers gain. Who are the winners, who are the losers, and what exactly do they win and lose? To what extent does the policy change achieve its goals?

48. Agricultural price supports result in the government holding large inventories of agricultural products. Why do you think the government can't simply give the products away to poor people?

49. Can you propose a policy that would induce the market to supply more rental housing units?

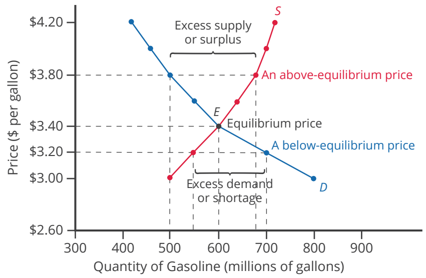
50. What term would an economist use to describe what happens when a shopper gets a "good deal" on a product?

51. Explain why voluntary transactions improve social welfare.

52. Why would a free market never operate at a quantity greater than the equilibrium quantity? (*Hint:* what would be required for a transaction to occur at that quantity?)

Problems

53. Review the following figure. Suppose the price of gasoline is \$3.00. Will the quantity demanded be lower or higher than at the equilibrium price of \$3.40 per gallon? Will the quantity supplied be lower or higher? Is there a shortage or a surplus in the market? If so, of how much?



54. The following table shows information on the demand and supply for bicycles, where the quantities of bicycles are measured in thousands.

Price	Q_d	Q_s
$120	50	36
$150	40	40
$180	32	48
$210	28	56
$240	24	70

a. What is the quantity demanded and the quantity supplied at a price of $210?

b. At what price is the quantity supplied equal to 48,000?

c. Graph the demand and supply curve for bicycles. How can you determine the equilibrium price and quantity from the graph? How can you determine the equilibrium price and quantity from the table? What are the equilibrium price and equilibrium quantity?

d. If the price was $120, what would the quantities demanded and supplied be? Would a shortage or surplus exist? If so, how large would the shortage or surplus be?

55. The computer market in recent years has seen many more computers sell at much lower prices. What shift in demand or supply is most likely to explain this outcome? Sketch a demand and supply diagram and explain your reasoning.

a. A rise in demand

b. A fall in demand

c. A rise in supply

d. A fall in supply

56. Demand and supply in the market for cheddar cheese is illustrated in the following table.

Price per Pound	Q_d	Q_s
$3.00	750	540
$3.20	700	600
$3.40	650	650
$3.60	620	700
$3.80	600	720
$4.00	590	730

Graph the data and find the equilibrium. Next, create a table showing the change in quantity demanded or quantity supplied, and draw a graph of the new equilibrium, in each of the following situations:

a. The price of milk, a key input for cheese production, rises, so that the supply decreases by 80 pounds at every price.

b. A new study says that eating cheese is good for your health, so demand increases by 20% at every price.

57. Supply and demand for movie tickets in a city are shown in the following table.

Price	Q_d	Q_s
$11.00	26	16
$12.00	24	18
$13.00	22	20
$14.00	21	21
$15.00	20	22

Graph demand and supply and identify the equilibrium. Then, calculate in a table and graph the effect of the following two changes.

a. Three new nightclubs open. They offer decent bands and have no cover charge; they make their money by selling food and drink. As a result, demand for movie tickets falls by 6 units at every price.

b. The city eliminates a tax that it had been placing on all local entertainment businesses. The result is that the quantity supplied of movies at any given price increases by 10%.

58. A low-income country decides to set a price ceiling on bread so they can make sure that bread is affordable to the poor. The conditions of demand and supply are given in the following table. What are the equilibrium price and equilibrium quantity before the price ceiling? What will the excess demand or the shortage (that is, quantity demanded minus quantity supplied) be if the price ceiling is set at $2.40? At $2.00? At $3.60?

Price	Q_d	Q_s
$1.60	9,000	5,000
$2.00	8,500	5,500
$2.40	8,000	6,400
$2.80	7,500	7,500
$3.20	7,000	9,000
$3.60	6,500	11,000
$4.00	6,000	15,000