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## The Central Idea

### CHAPTER OVERVIEW

Economic interactions involve scarcity and choice. Time and income are limited, and people choose among alternatives every day. In this chapter, we study the choices people make when faced with a scarcity of resources and the economic interactions among people when they make their choices. We begin by looking at scarcity, choice, and interaction for individuals. We study consumer and producer decisions, learn about the gains from trade, and see how the same principles that guide interactions between individuals can be used to study interactions between countries. We then look at scarcity and choice for the economy as a whole, and introduce the production possibilities curve. We conclude by studying two alternative economic systems, the market economy and the command economy, and focusing on the role of prices.

### CHAPTER REVIEW

1. **Scarcity** is a situation in which people's wants exceed their resources. Scarcity is a fact of life; wants are unlimited, but resources are not. Because of scarcity, people must make a **choice**—to forgo, or give up, one thing in favor of another. **Economics** is the study of how people deal with scarcity. They make *purposeful choices* with *scarce resources* and *interact* with other people when they make their choices.
2. **Economic interaction** between people occurs when they trade or exchange goods and services with each other. Economic interactions occur in **markets**, arrangements where buyers and sellers can interact with each other, and within *organizations* such as families, firms, universities, and governments.
3. The **opportunity cost** of a choice is the value of the forgone alternative that was not chosen. In the above examples, the opportunity cost of football tickets is dinner, and the opportunity cost of studying economics is not doing as well in the physics test.
4. Economic interactions often involve **gains from trade**. Suppose that you can afford season tickets for either football or basketball, but not both, and that you would prefer attending half of the football games and half of the basketball games to attending all of either. If you could find someone with similar preferences to trade tickets with, you would both be better off. Gains from trade can occur in markets, such as a ticket agency, or in organizations, such as a family or a college dormitory.

5. Individual producers also face scarcity and choice; you cannot produce unlimited goods with limited time and resources. Gains from trade allow people to **specialize** in what they are good at. If a guitarist and a drummer form a rock group, **division of labor** allows each to concentrate on playing one instrument.
6. One person or group of people has a **comparative advantage** in producing one good relative to another good if they can produce with comparatively less time, effort, or resources than another person can produce that good. In the above example, production can be increased if the guitarist plays the guitar and the drummer plays the drums, rather than both trying to play both instruments. (There is one subtle aspect of the idea of comparative advantage: Even if the guitarist plays both the guitar and the drums better than the drummer, the guitarist will be able to play one instrument, presumably the guitar, and the drummer will be able to play the other instrument, presumably the drums, *comparatively* better than the other musician.)
7. **International trade** occurs when individuals who live in different countries trade with each other. There are gains from international trade for the same reasons that there are gains from trade within a country: By trading, people can either better satisfy their preferences for goods or better utilize their comparative advantage.
8. **Production possibilities** represent the alternative choices of goods that the economy can produce. Consider an economy that produces two goods, steel and food. If it produces more of one, it must produce less of the other. The opportunity cost of producing more steel is the value of the forgone food. The idea of **increasing opportunity costs** is that as steel production rises, the value of the forgone food increases. The rate of decline in food production increases as we produce more steel.

## ZEROING IN

1. The **production possibilities curve** is a graphical representation of the idea of production possibilities. We will see how to construct the production possibilities curve, what causes a movement along the curve, and what causes the curve to shift.
  - a. Figure 1.1 depicts the production possibilities curve for steel and food. Steel is on the vertical axis, and food is on the horizontal axis. Both are measured in tons. If the economy devotes all of its resources to either steel or food production, it can produce the maximum amount of one and none of the other. The production possibilities curve slopes downward and is bowed out from the origin. The curve is bowed out because the opportunity cost of producing food increases as more food is produced. As more resources are shifted from steel to food production, each additional ton of food means a greater loss of steel produced.

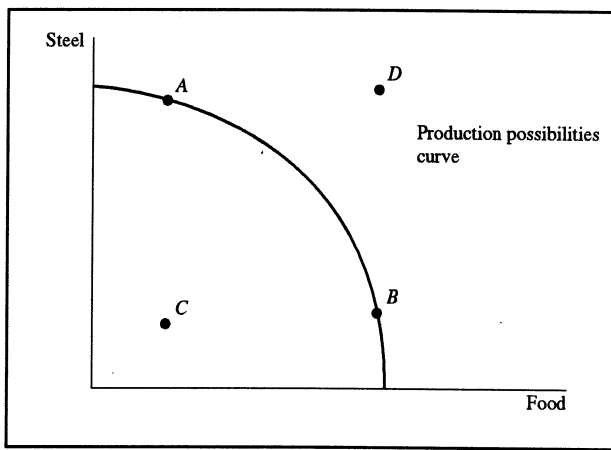


Figure 1.1

- b. The production possibilities curve shows three situations. Points on the curve are *efficient* because they represent the maximum amount that can be produced with available resources. Production of food can be raised only by lowering production of steel, such as by moving from point A to point B. Points inside the production possibilities curve, such as point C, are *inefficient*. Using the same resources, the economy could produce more steel, more food, or both. Points outside the production possibilities curve, such as point D, are *impossible*. The economy does not have the resources to produce those quantities of steel and food.
- c. It is important to understand the distinction between movements along a curve and shifts of the curve. A change in the production of one of the variables on the axes causes a movement along the production possibilities curve. For example, an increase in steel production is a movement from point B to point A in Figure 1.1. Economic growth causes an outward shift in the production possibilities curve. When there is economic growth, more resources are available, and more goods and services can be produced. The effects of economic growth are illustrated in Figure 1.2. The production possibilities curve shifts out from the curve labeled “Original” to the curve labeled “Growth.”

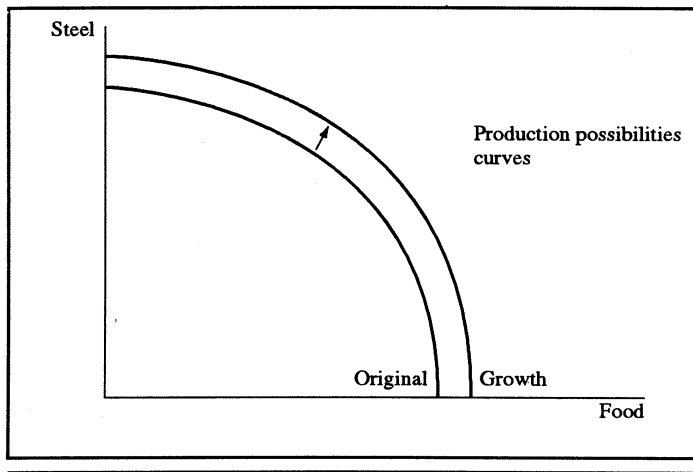


Figure 1.

2. Every economy focuses on three essential questions: *what* are the goods and services to be produced, *how* are these goods and services to be produced, and *for whom* are the goods and services to be produced? In a **market economy**, these decisions are made by consumers, firms, governments, and other organizations interacting in markets. In a **command economy**, these decisions are made through a central plan by those who control the government. A command economy is also called a centrally planned economy. One of the most important economic events of recent years has been the attempt by the countries of Eastern Europe, the former Soviet Union, and China to make the transition from command economies to market economies.
3. There are a number of important characteristics that distinguish market economies from command economies, and we consider some of these differences.
  - a. **Freely determined prices**, set by individuals and firms, are an essential characteristic of a market economy. In a command economy, most prices are set by the government. **Property rights**, the legal authority to keep or sell property, provide **incentives** for invention and specialization and are another key element of a market economy. Competitive markets and freedom to trade at home and abroad also characterize market, but not command, economies.
  - b. The role of government in a market economy is a subject of much debate among economists. It is generally agreed that the government should provide for defense, help establish property rights, and keep the overall price level stable, but modern governments do much more. **Market failure** is a situation in which the market economy does not provide good enough answers to the three questions posed above—what, how, and for whom—and in which there is a role for government in improving the market outcome. However, when the government, even in the case of market failure, does worse than the market would have done if left on its own, there is **government failure**.
  - c. Many of the economic interactions in market economies take place within organizations, such as firms, households, and universities, instead of in markets. One important reason why organizations are created is that they reduce market *transaction costs*, the costs of buying and selling. These costs include the cost of finding a buyer or a seller and the cost of reaching agreement on a price.

- d. Prices play three important roles in a market economy. They serve as *signals* about what should be produced and consumed when there are changes in tastes or technology, they provide *incentives* to people to alter their production or consumption, and they affect the *distribution of income*.

## ACTIVE REVIEW

### Fill-In Questions

1. \_\_\_\_\_ is a situation in which people's wants exceed their resources.
2. \_\_\_\_\_ is the study of how people deal with scarcity.
3. People make \_\_\_\_\_ with scarce resources.
4. Economic interactions occur in \_\_\_\_\_ and within \_\_\_\_\_.
5. The \_\_\_\_\_ of a choice is the value of the forgone alternative that was not chosen.
6. When both participants are made better off by an economic interaction, there are \_\_\_\_\_.
7. Specialization in production results in \_\_\_\_\_.
8. One person or group of people has a(n) \_\_\_\_\_ in producing one good relative to another good when they can produce that good with comparatively less time, effort, or resources than another person can produce that good.
9. \_\_\_\_\_ occurs when individuals who live in different countries trade with each other.
10. \_\_\_\_\_ represent the alternative choices of goods that the economy can produce.
11. The graphical depiction of production possibilities is called the \_\_\_\_\_.
12. \_\_\_\_\_ causes an outward shift in the production possibilities curve.
13. The two major types of economies are \_\_\_\_\_ economies and \_\_\_\_\_ economies.
14. \_\_\_\_\_ are the legal authority to keep or sell property.
15. In a market economy, prices serve as \_\_\_\_\_, provide \_\_\_\_\_, and affect the \_\_\_\_\_.

### True-False Questions

- T F** 1. Economics is the study of how people can get anything they want.
- T F** 2. Scarcity is a characteristic of a command economy, but not of a market economy.
- T F** 3. An opportunity cost occurs every time there is a choice.
- T F** 4. Gains from trade occur only in markets.
- T F** 5. If Canada produces two goods with less resources than the United States, there can be no comparative advantage in those two goods.

- T F** 6. Trade takes place both within and between countries.
- T F** 7. Production possibilities represent the best choice of goods for the economy to produce.
- T F** 8. The production possibilities curve slopes downward.
- T F** 9. The production possibilities curve is linear.
- T F** 10. Points on the production possibilities curve are efficient.
- T F** 11. Points inside the production possibilities curve are inefficient.
- T F** 12. A market economy is also called a centrally planned economy.
- T F** 13. In recent years, Eastern Europe, the former Soviet Union, and China have moved away from central planning.
- T F** 14. Freely determined prices and property rights are characteristics of centrally planned economies.
- T F** 15. One reason why organizations are created is that they eliminate market failure.

### Short-Answer Questions

1. What must people do because of scarcity?
2. When do economic interactions between people occur?
3. Where do economic interactions occur?
4. What are opportunity costs?
5. What is comparative advantage?
6. Why are there gains from international trade?
7. Why are there increasing opportunity costs?
8. Why is the production possibilities curve bowed out?
9. What are the three situations defined by the production possibilities curve?
10. Why are points outside the production possibilities curve characterized as impossible?
11. How does economic growth affect the production possibilities curve?
12. What are the three essential questions faced by every economy?
13. Name four characteristics of market, but not command, economies.
14. What is the difference between market failure and government failure?
15. What are the three roles of prices in a market economy?

## WORKING IT OUT

1. We have studied the idea of production possibilities and the production possibilities curve by using graphs. We will first consider the same two concepts using numerical examples and then see how we can combine graphs and numbers.
  - a. Suppose that the production possibilities for steel and food are as follows:

Choice	Steel	Food
<i>A</i>	0	100
<i>B</i>	25	95
<i>C</i>	50	85
<i>D</i>	75	50
<i>E</i>	100	0

Both steel and food are measured in tons. Increasing opportunity costs are illustrated by moving down the table. As we move from row to row, steel production increases by the same amount, 25 tons. The decline in food production, in contrast, gets larger, going from 5 tons between the first and second rows to 50 tons between the fourth and fifth rows. Each extra 25 tons of steel requires a loss of more and more food.

- b. The production possibilities curve for these numbers is depicted in Figure 1.3, with steel on the vertical axis and food on the horizontal axis. Both axes are measured in tons. The production possibilities curve is constructed by plotting pairs of points, labeled points *A* through *E*, for steel and food, and then connecting the dots. Since we do not know exactly how much food can be produced in between the 25-ton intervals for steel, we use straight lines to connect the dots.

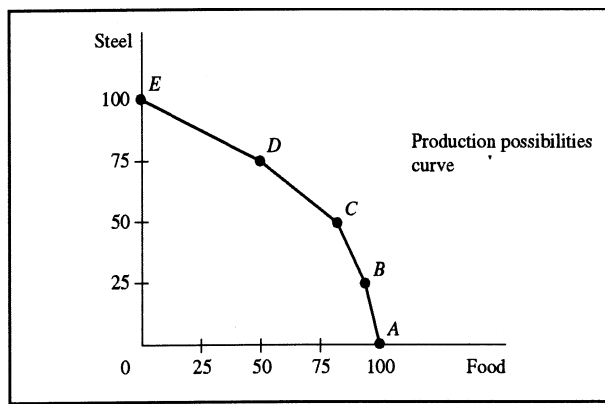


Figure 1.3

2. We have learned that economic growth shifts out the production possibilities curve. We will illustrate this with a numerical example. Suppose that economic growth allows us to produce more goods, so that the new production possibilities for steel and food are as follows:

Choice	Steel	Food
<i>A</i>	0	125
<i>B</i>	25	120
<i>C</i>	50	110
<i>D</i>	75	90
<i>E</i>	100	50
<i>F</i>	125	0

The new production possibilities curve, labeled “Growth,” is drawn with the original production possibilities curve in Figure 1.4. The new curve is farther away from the origin than the original curve at all points, indicating that more can be produced. For example, food production of 90 tons and steel production of 75 tons was impossible with the original production possibilities curve. After growth, that point is on the new production possibilities curve, and is therefore efficient.

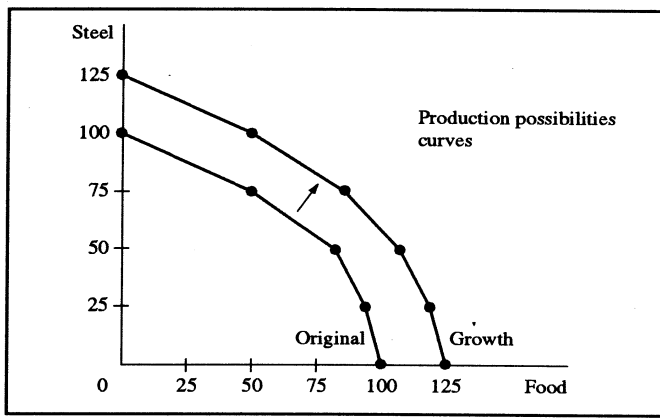


Figure 1.4

## Worked Problems

- Suppose that you must allocate your time between studying economics and studying physics. The percentage of time you spend studying economics and the grades you will get on the two exams are as follows:

Percent of Time Studying Economics	Economics Grade	Physics Grade
100	80	0
80	75	30
60	65	50
40	50	65
20	30	75
0	0	80

Draw the production possibilities curve. How does this example illustrate increasing opportunity costs?

### Answer

The production possibilities curve is drawn in Figure 1.5. The example illustrates increasing opportunity costs because, as you move down the table or the curve, each additional point on your physics grade comes at a cost of more and more points on your economics grade.

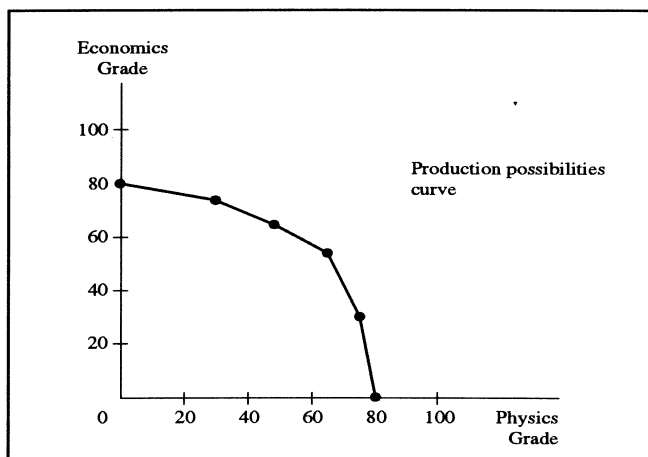


Figure 1.5

2. Now suppose that, by using the study guide for economics, you are able to improve your choices as follows:

Percent of Time Studying Economics	Economics Grade	Physics Grade
100	100	0
80	95	30
60	85	50
40	70	65
20	40	75
0	0	80

- Draw the new production possibilities curve, and describe how the new curve is related to the old curve.
- Characterize an economics grade of 70 and a physics grade of 65 under the original and the new production possibilities curves.

### Answers

- The new production possibilities curve, labeled "Study Guide," and the original curve are depicted in Figure 1.6. Using this study guide raises your economics grade at each percent of time, above zero, spent studying economics, but it does not help your physics grade. Although the new curve is above the original curve, it tilts out rather than shifting out.

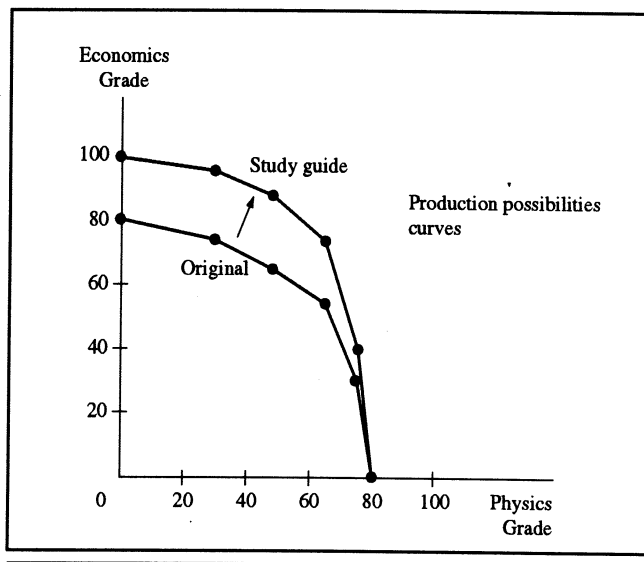


Figure 1.6

- An economics grade of 70 and a physics grade of 65 were impossible to attain with the original

*production possibilities curve, but this combination is now efficient.*

### Practice Problems

1. Suppose that the production possibilities for steel and food are as follows:

Choice	Steel	Food
A	0	100
B	25	90
C	50	70
D	75	40
E	100	0

Both steel and food are measured in tons. Draw the production possibilities curve. How does this example illustrate increasing opportunity costs?

2. Suppose that economic growth allows us to produce more goods, so that the new production possibilities for steel and food are as follows:

Choice	Steel	Food
A	0	120
B	25	115
C	50	105
D	75	90
E	100	60
F	125	0

- a. Draw the new production possibilities curve, and describe how the new curve is related to the old curve.
- b. Characterize the production of 75 tons of steel and 40 tons of food under the original and the new production possibilities curves.

3. Suppose that you must allocate your time between studying economics and studying physics. The percentage of time you spend studying economics and the grades you will get on the two exams are as follows:

Percent of Time Studying Economics	Economics Grade	Physics Grade
100	90	0
80	88	40
60	80	70
40	70	80
20	40	88
0	0	90

Draw the production possibilities curve. How does this example illustrate increasing opportunity costs?

4. Now suppose that, by using the study guide for economics, you are able to improve your choices as follows:

Percent of Time Studying Economics	Economics Grade	Physics Grade
100	100	0
80	96	40
60	90	70
40	80	80
20	50	88
0	0	90

- Draw the new production possibilities curve, and describe how the new curve is related to the old curve.
- Characterize an economics grade of 80 and a physics grade of 70 under the original and the new production possibilities curves.

**CHAPTER TEST**

1. A situation in which people's wants exceed their resources is called
  - a. abundance.
  - b. choice.
  - c. scarcity.
  - d. allocation.
  
2. Economists study how
  - a. people make purposeful choices with scarce resources.
  - b. people make purposeful choices with abundant resources.
  - c. people make random choices with scarce resources.
  - d. people make random choices with abundant resources.
  
3. An arrangement by which economic exchanges between people takes place is called
  - a. a choice.
  - b. a market.
  - c. scarcity.
  - d. gains from trade.
  
4. Which of the following represents the alternative choices of goods that the economy can produce?
  - a. Opportunity costs
  - b. Economic interactions
  - c. Budget constraints
  - d. Production possibilities
  
5. The value of the alternative that was not chosen is called the
  - a. marginal cost of the choice.
  - b. average cost of the choice.
  - c. opportunity cost of the choice.
  - d. gain from the choice.
  
6. Exchange of goods and services between people or firms in different nations is called
  - a. intranational trade.
  - b. international trade.
  - c. gains from trade.
  - d. comparative advantage.
  
7. When one person or group of people can produce one good relative to another good with comparatively less time, effort, or resources than another person can produce that good, this is called
  - a. comparative advantage.
  - b. specialization.
  - c. opportunity cost.
  - d. division of labor.
  
8. The production possibilities curve slopes
  - a. downward and is bowed out from the origin.
  - b. upward and is bowed out from the origin.
  - c. downward and is bowed in toward the origin.
  - d. upward and is bowed in toward the origin.

9. Points outside the production possibilities curve are
- efficient.
  - inefficient.
  - impossible.
  - possible.
10. Economic growth causes a(n)
- inward shift in the production possibilities curve.
  - outward shift in the production possibilities curve.
  - upward movement on the production possibilities curve.
  - downward movement on the production possibilities curve.
11. Which of the following is *not* one of the essential questions that an economy focuses on?
- What are the goods and services to be produced?
  - When are the goods and services to be produced?
  - How are the goods and services to be produced?
  - For whom are the goods and services to be produced?
12. Which of the following is *not* one of the characteristics of a market economy?
- Freely determined prices
  - Property rights
  - Competitive markets
  - Centrally planned production
13. The costs of buying and selling are called
- transaction costs.
  - market costs.
  - opportunity costs.
  - incentive costs.
14. Which of the following is *not* one of the important roles of prices in a market economy?
- They serve as signals.
  - They provide incentives.
  - They form preferences.
  - They affect the distribution of income.

Use the following table for questions 15 and 16.

Suppose that the production possibilities for guns and flowers are as follows:

Choice	Guns	Flowers
A	0	100
B	25	90
C	50	70
D	75	40
E	100	0

15. If all of the economy's resources were devoted to the production of flowers, the amount of guns that would be produced is
- 100.
  - 75.
  - 0.
  - 50.
16. If the economy is currently producing 50 guns and 60 flowers, then
- it is at an efficient level of production.
  - an efficient level of production can be achieved by producing 20 more flowers.
  - an efficient level of production can be achieved by producing less flowers and more guns.
  - an efficient level of production can be achieved by producing 10 more flowers.

Use Figure 1.7 for questions 17, 18, and 19.

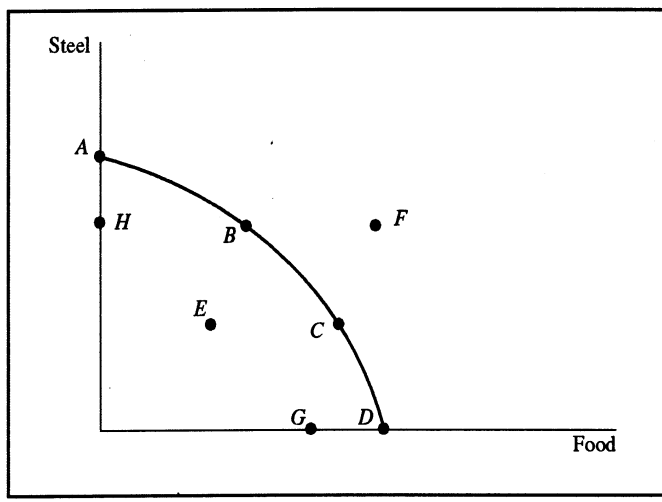


Figure 1.7

17. If the economy devotes all of its resources to steel production, it will be producing at point
- A.
  - B.
  - H.
  - G.
18. Point F in Figure 1.7 represents
- an efficient production level.
  - an inefficient production level.
  - an impossible production level.
  - a possible production level.
19. If the economy is currently producing at point E, then
- it is utilizing its resources efficiently.
  - it is utilizing its resources inefficiently.
  - it is on its production possibilities curve.
  - it is beyond its production possibilities curve.

Use Figure 1.8 for question 20.

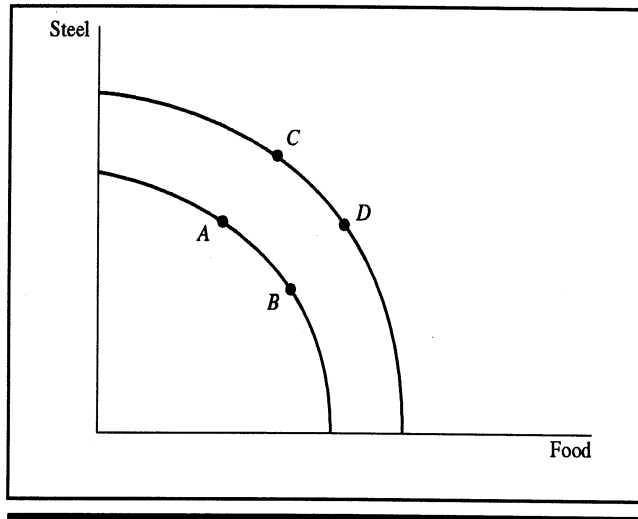


Figure 1.8

20. An economy experiences economic growth when it moves
- from point A to point B.
  - from point A to point C.
  - from point D to point C.
  - from point D to point B.

## ANSWERS TO THE REVIEW QUESTIONS

### Fill-In Questions

- Scarcity
- Economics
- purposeful choices
- markets, organizations
- opportunity cost
- gains from trade
- division of labor
- comparative advantage
- International trade
- Production possibilities
- production possibilities curve
- Economic growth
- market, command
- Property rights
- signals, incentives, distribution of income

### True-False Questions

- False.** Economics is the study of how people deal with scarcity
- False.** Because wants are unlimited but resources are not, scarcity is a characteristic of all economies.
- True.** The opportunity cost of a choice is the value of the forgone alternative that was not chosen.
- False.** Gains from trade can also occur within organizations.

5. **False.** The United States will still produce one of the goods with *relatively* less resources than Canada, leading to a *comparative* advantage in that good.
6. **True.** International trade occurs when individuals who live in different countries trade with each other.
7. **False.** Production possibilities represent the alternative choices of goods that the economy can produce.
8. **True.** As more of one good is produced, less of the other can be produced.
9. **False.** The production possibilities curve is bowed out.
10. **True.** They represent the maximum amount that can be produced with available resources.
11. **True.** Using the same resources, the economy could produce more of both goods.
12. **False.** A command economy is also called a centrally planned economy.
13. **True.** They are making the transition from command economies to market economies.
14. **False.** Freely determined prices and property rights are characteristics of market, not centrally planned, economies.
15. **False.** One reason why organizations are created is to reduce market transaction costs.

### Short-Answer Questions

1. Because of scarcity, people must make choices to forgo one thing in favor of another.
2. Economic interactions between people occur when they trade or exchange goods or services with each other.
3. Economic interactions occur in markets and within organizations.
4. The opportunity cost of a choice is the value of the forgone alternative that was not chosen.
5. One person or group of people has a comparative advantage in producing one good relative to another good if they can produce that good with comparatively less time, effort, or resources than another person can produce that good.
6. There are gains from international trade because by trading, people can either better satisfy their preferences for goods or better utilize their comparative advantage.
7. There are increasing opportunity costs because as the production of one good increases, the value of the forgone good increases.
8. The production possibilities curve is bowed out because of increasing opportunity costs.
9. Points on the production possibility curve are efficient, those inside the curve are inefficient, and those outside the curve are impossible.
10. They are called impossible because the economy does not have the resources to produce outside the production possibilities curve.
11. Economic growth shifts out the production possibilities curve.
12. Every economy must determine what are the goods and services to be produced, how are these goods and services to be produced, and for whom are the goods and services to be produced.
13. Freely determined prices, property rights, competitive markets, and freedom to trade at home and abroad characterize market, but not command, economies.
14. Market failure is a situation in which there is a role for the government in improving the market outcome. Government failure occurs when the government, even in the case of market failure, does worse than the market would have done if left on its own.

15. Prices serve as signals about what should be produced and consumed when there are changes in tastes or technology, provide incentives to people to alter their production or consumption, and affect the distribution of income.

## SOLUTIONS TO THE PRACTICE PROBLEMS

1. The production possibilities curve is drawn in Figure 1.9. The example illustrates increasing opportunity costs because, as you move down the table or up the curve, each additional 25 tons of steel comes at a higher cost in food production.

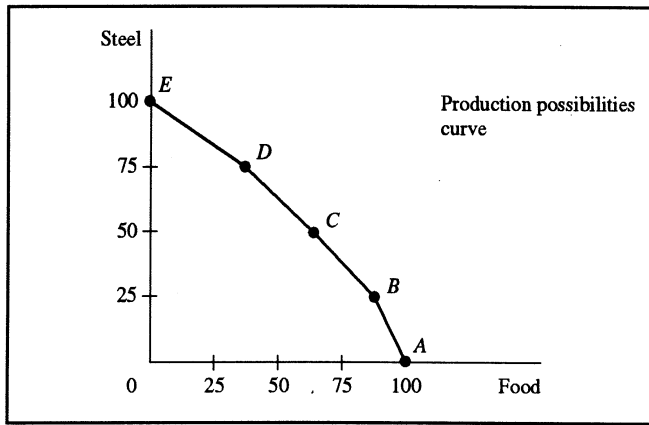


Figure 1.9

2. a. The new production possibilities curve, labeled "Growth," is drawn with the original production possibilities curve in Figure 1.10. The new curve shifts out from the old curve.

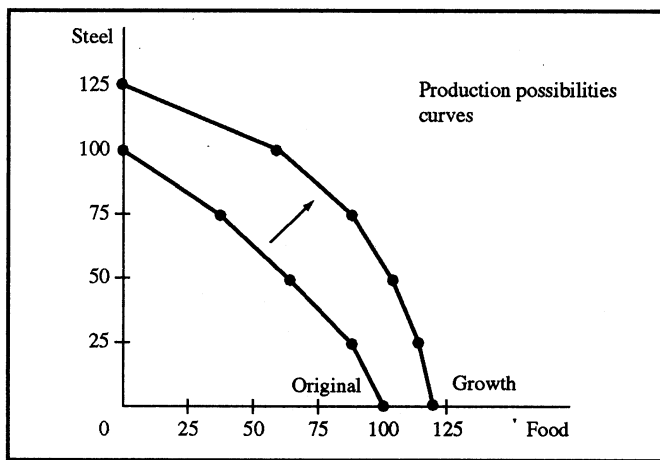


Figure 1.10

- b. Production of 75 tons of steel and 40 tons of food was efficient under the original production possibilities curve. It is inefficient under the new curve.

3. The production possibilities curve is drawn in Figure 1.11. Each additional point on your physics grade comes at a cost of more and more points on your economics grade.

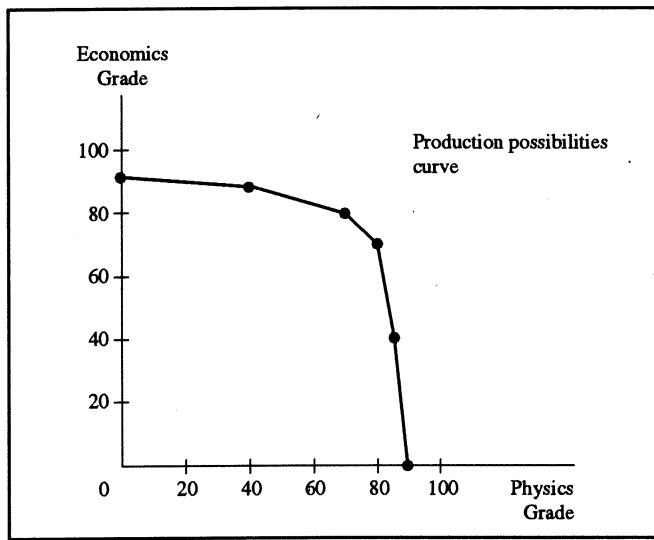


Figure 1.11

4. a. The new production possibilities curve, labeled "Study Guide," and the original curve are depicted in Figure 1.12. The new curve is above the original curve, but it tilts out rather than shifting out.

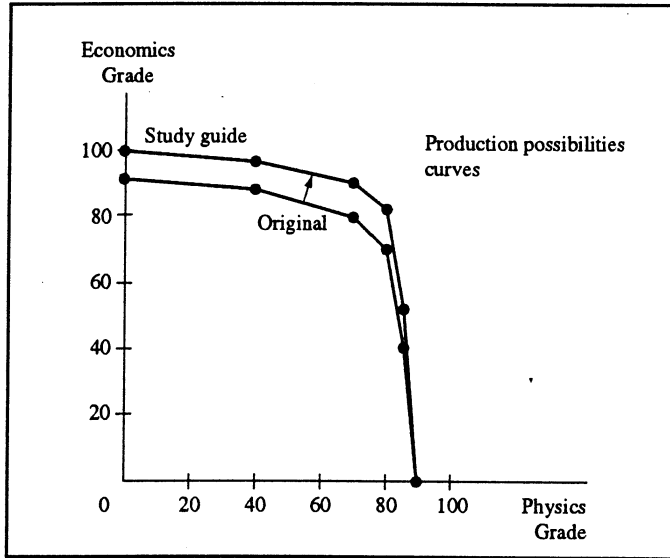


Figure 1.12

- b. An economics grade of 80 and a physics grade of 70 were efficient with the original production possibilities curve, but this combination is now inefficient.

**ANSWERS TO THE CHAPTER TEST**

- 1. c
- 2. a
- 3. b
- 4. d
- 5. c

- 6. b
- 7. a
- 8. a
- 9. c
- 10. b

- 11. b
- 12. d
- 13. a
- 14. c
- 15. c

- 16. d
- 17. a
- 18. c
- 19. b
- 20. b

