Chapter 1 introduces you to economics—the social science that studies how individuals, institutions, and society make the optimal best choices under conditions of scarcity. The first section of the chapter describes the three key features of the economic perspective. This perspective first recognizes that all choices involve costs and that these costs must be involved in an economic decision. The economic perspective also incorporates the view that to achieve a goal, people make decisions that reflect their purposeful self-interest. The third feature considers that people compare marginal benefits against marginal costs when making decisions and will choose the situation where the marginal benefit is greater than the marginal cost. You will develop a better understanding of these features as you read about the economic issues in this book.

Economics relies heavily on the scientific method to develop theories and principles to explain the likely effects from human events and behavior. It involves gathering data, testing hypotheses, and developing theories and principles. In essence, economic theories and principles (and related terms such as laws and models) are generalizations about how the economic world works.

Economists develop economic theories and principles at two levels. Microeconomics targets specific units in the economy. Studies at this level research such questions as how prices and output are determined for particular products and how consumers will react to price changes. Macroeconomics focuses on the whole economy, or large segments of it. Studies at this level investigate such issues as how to increase economic growth, control inflation, or maintain full employment. Studies at either level have elements of positive economics, which investigates facts or cause-and-effect relationships, or normative economics, which incorporates subjective views of what ought to be or what policies should be used to address an economic issue.

Several sections of the text are devoted to a discussion of the economizing problem from individual or society perspectives. This problem arises from a fundamental conflict between economic wants and economic resources: (1) individuals and society have unlimited economic wants; (2) the economic means or resources to satisfy those wants are limited. This economic problem forces individuals and societies to make a choice. And anytime a choice is made there is an opportunity cost—the next best alternative that was not chosen.

The economizing problem for individuals is illustrated with a microeconomic model that uses a budget line. It shows graphically the meaning of many concepts defined in the chapter: scarcity, choice, trade-offs, opportunity cost, and optimal allocation. The economizing problem for society is illustrated with a macroeconomic model that uses a production possibilities curve. It also shows graphically the economic concepts just listed, and in addition it can be used to describe macroeconomic conditions related to unemployment, economic growth, and trade. The production possibilities model can also be applied to many real economic situations, such as the economics of war, as you will learn from the text.

### CHECKLIST

When you have studied this chapter you should be able to

- Write a formal definition of economics.
- Describe the three key features of the economic perspective.
- Give applications of the economic perspective.
- Identify the elements of the scientific method.
- Define hypothesis, theory, principle, law, and model as they relate to economics.
- State how economic principles are generalizations and abstractions.
- Explain the "other-things-equal" assumption (ceteris paribus) and its use in economics.
- Distinguish between microeconomics and macroeconomics.
- Give examples of positive and normative economics.
- Explain the economizing problem for an individual (from a microeconomic perspective).
- Describe the concept of a budget line for the individual.
- Explain how to measure the slope of a budget line and determine the location of the budget line.
- Use the budget line to illustrate trade-offs and opportunity costs.
- Describe the economizing problem for society.
- Define the four types of economic resources for society.
- State the four assumptions made when a production possibilities table or curve is constructed.
- Construct a production possibilities curve when given the data.
- Define opportunity cost and utilize a production possibilities curve to explain the concept.
- Show how the law of increasing opportunity costs is reflected in the shape of the production possibilities curve.
- Explain the economic rationale for the law of increasing opportunity costs.
Use marginal analysis to define optimal allocation.

Explain how optimal allocation determines the optimal point on a production possibilities curve.

Use a production possibilities curve to illustrate unemployment.

Use the production possibilities curve to illustrate economic growth.

Explain how international trade affects a nation's production possibilities curve.

Give other applications of the production possibilities model.

Identify the five pitfalls to sound economic reasoning (Last Word).

CHAPTER OUTLINE

1. **Economics** studies how individuals, institutions, and society make the optimal or best choices under conditions of scarcity, for which economic wants are unlimited and the means or resources to satisfy those wants are limited.

2. The economic perspective has three interrelated features.
   a. It recognizes that scarcity requires choice and that making a choice has an opportunity cost—giving up the next best alternative to the choice that was made.
   b. It views people as purposeful decision makers who make choices based on their self-interests. People seek to increase their satisfaction, or utility, from consuming a good or service. They are purposeful because they weigh the costs and benefits in deciding how best to increase that utility.
   c. It uses marginal analysis to assess how the marginal costs of a decision compare with the marginal benefits.

3. Economics relies on the scientific method for analysis.
   a. Several terms are used in economic analysis that are related to this method.
      (1) A hypothesis is a proposition that is tested and used to develop an economic theory.
      (2) A highly tested and reliable economic theory is called an economic principle or law. Theories, principles, and laws are meaningful statements about economic behavior or the economy that can be used to predict the likely outcome of an action or event.
      (3) An economic model is created when several economic laws or principles are used to explain or describe reality.
   b. There are several other aspects of economic principles.
      (4) Each principle or theory is a generalization that shows a tendency or average effect.
      (5) The other-things-equal assumption (ceteris paribus) is used to limit the influence of other factors when making a generalization.
      (6) Many economic models can be illustrated graphically and are simplified representations of economic reality.
   c. Economic analysis is conducted at two levels, and for each level there can be elements of positive or normative economics.

   a. **Microeconomics** studies the economic behavior of individuals, particular markets, firms, or industries.
   b. **Macroeconomics** looks at the entire economy or its major aggregates or sectors, such as households, businesses, or government.
   c. **Positive economics** focuses on facts and is concerned with what is, or the scientific analysis of economic behavior.
   d. **Normative economics** suggests what ought to be and answers policy questions based on value judgments. Most disagreements among economists involve normative economics.

5. Individuals face an economizing problem because economic wants are greater than the economic means to satisfy those wants. The problem can be illustrated with a microeconomic model with several features.
   a. Individuals have limited income to spend.
   b. Individuals have virtually unlimited wants for more goods and services, and higher-quality goods and services.
   c. The economizing problem for the individual can be illustrated with a budget line and two products (for instance, DVDs and books). The budget line shows graphically the combinations of the two products a consumer can purchase with his or her money income.
      (1) All combinations of the two products on or inside the budget line are attainable by the consumer; all combinations beyond the budget line are unattainable.
      (2) To obtain more DVDs the consumer has to give up some books, so there is a trade-off; if to get a second DVD the consumer must give up two books, then the opportunity cost of the additional DVD is two books.
      (3) Limited income forces individuals to evaluate the marginal cost and marginal benefit of a choice to maximize their satisfaction.
      (4) Changes in money income shift the budget line: an increase in income shifts the line to the right; a decrease in income shifts the line to the left.

6. Society also faces an economizing problem due to scarcity.
   a. Economic resources are scarce natural, human, or manufactured inputs used to produce goods and services.
   b. Economic resources are sometimes called factors of production and are classified into four categories:
      (1) land, or natural resources.
      (2) labor, or the contributed time and abilities of people who are producing goods and services.
      (3) capital (or capital goods), or the machines, tools, and equipment used to make other goods and services; economists refer to the purchase of such capital goods as investment.
      (4) entrepreneurial ability, or the special human talents of individuals who combine the other factors of production.

7. A macroeconomic model of production possibilities illustrates the economizing problem for society. The four assumptions usually made when such a production possibilities model is used are: (1) there is full employment of available resources; (2) the quantity and quality of resources are fixed; (3) the state of technology does not
change; and (4) there are two types of goods being produced (consumer goods and capital goods).

a. The production possibilities table indicates the alternative combinations of goods an economy is capable of producing when it has achieved full employment and optimal allocation. The table illustrates the fundamental choice every economy must make: what quantity of each product it must sacrifice to obtain more of another.

b. The data in the production possibilities table can be plotted on a graph to obtain a production possibilities curve. Each point on the curve shows some maximum output of the two goods.

c. The opportunity cost of producing an additional unit of one good is the amount of the other good that is sacrificed. The law of increasing opportunity costs states that the opportunity cost of producing one more unit of a good (the marginal opportunity cost) increases as more of the good is produced.

(1) The production possibilities curve is bowed out from the origin because of the law of increasing opportunity costs.

(2) The reason the opportunity cost of producing an additional unit of a good increases as more of it is produced is because resources are not completely adaptable to alternative uses.

d. Optimal allocation means that resources are devoted to the best mix of goods to maximize satisfaction in society. This optimal mix is determined by assessing marginal costs and benefits.

(1) The marginal-cost curve for a good increases because of the law of increasing opportunity costs; the marginal-benefit curve decreases because the consumption of a good yields less and less satisfaction.

(2) When the marginal benefit is greater than the marginal cost, there is an incentive to produce more of the good, but when the marginal cost is greater than the marginal benefit, there is an incentive to produce less of the good.

(3) Optimal or efficient allocation is achieved when the marginal cost of a product equals the marginal benefit of a product.

8. Different outcomes will occur when assumptions underlying the production possibilities model are relaxed.

a. Unemployment. When the economy is operating at a point inside the production possibilities curve it means that resources are not fully employed.

b. Economic growth. The production possibilities curve shifts outward from economic growth because resources are no longer fixed and technology improves.

(1) Expansion in the quantity and quality of resources contributes to economic growth and shifts the production possibilities curve outward.

(2) Advancement in technology contributes to economic growth and also shifts the production possibilities curve outward.

(3) The combination of capital goods and consumer goods an economy chooses to produce in the present can determine the position of the production possibilities curve in the future. Greater production of capital goods relative to consumer goods in the present shifts the production possibilities curve farther outward in the future because that economy is devoting more of its resources to investment than consumption.

c. Trade. When there is international specialization and trade, a nation can obtain more goods and services than is indicated by the production possibilities curve for a domestic economy. The effect on production possibilities is similar to an increase in economic growth.

9. (Last Word). Sound reasoning about economic issues requires the avoidance of five pitfalls.

a. Bias is a preconceived belief or opinion that is not warranted by the facts.

b. Loaded terminology is the use of terms in a way that appeals to emotion and leads to a nonobjective analysis of the issues.

c. The fallacy of composition is the assumption that what is true of the part is necessarily true of the whole.

d. The post hoc fallacy ("after this, therefore because of this") is the mistaken belief that when one event precedes another, the first event is the cause of the second.

e. Confusing correlation with causation means that two factors may be related, but that does not mean that one factor caused the other.

II HINTS AND TIPS

1. The economic perspective presented in the first section of the chapter has three features related to decision making: scarcity and the necessity of choice, purposeful self-interest in decision making, and marginal analysis of the costs and benefits of decisions. Although these features may seem strange to you at first, they are central to the economic thinking used to examine decisions and problems throughout the book.

2. The chapter introduces two pairs of terms: microeconomics and macroeconomics; and positive economics and normative economics. Make sure you understand what each pair means and how they are related to each other.

3. The budget line shows the consumer what it is possible to purchase in the two-good world, given an income. Make sure that you understand what a budget line is. To test your understanding, practice with different income levels and prices. For example, assume you had an income of $100 to spend for two goods (A and B). Good A costs $10 and Good B costs $5. Draw a budget line to show the possible combinations of A and B that you could purchase.

4. The production possibilities curve is a simple and useful economic model for an economy. Practice your understanding of it by using it to explain the following economic concepts: scarcity, choice, opportunity cost, the law of increasing opportunity costs, full employment, optimal allocation, unemployment, and economic growth.

5. Opportunity cost is always measured in terms of a forgone alternative. From a production possibilities table, you can easily calculate how many units of one product you forgo when you get another unit of a product.
CHAPTER 1

IMPORTANT TERMS

Note: See the Glossary in the back of the book for definitions of terms.

- economics
- economic perspective
- opportunity cost
- utility
- marginal analysis
- scientific method
- economic principle
- other-things-equal assumption (ceteris paribus)
- microeconomics
- macroeconomics
- aggregate
- positive economics
- normative economics
- economizing problem
- budget line
- economic resources
- land
- factors of production
- labor
- capital
- investment
- entrepreneurial ability
- consumer goods
- capital goods
- production possibilities curve
- law of increasing opportunity costs
- economic growth

SELF-TEST

FILL-IN QUESTIONS

1. The economic perspective recognizes that (resources, scarcity) require(s) choice and that choice has an opportunity (benefit, cost) ______ ___. There is no such thing as a “free lunch” in economics because scarce resources have (unlimited, alternative) _____ _ uses.

2. The economic perspective also assumes that people make choices based on their self-interest and that they are (random, purposeful) ______ ___. It also is based on comparisons of the (extreme, marginal) ______ costs and benefits of an economic decision.

3. Economics relies on the (model, scientific) ______ method. Statements about economic behavior that enable the prediction of the likely effects of certain actions are economic (facts, theories) ______ ___. The most well-tested of these that have strong predictive accuracy are called economic (hypotheses, principles) ______ ___, or sometimes they are called (laws, actions) ______ ___. Simplified representations of economic behavior or how an economy works are called (policies, models) ______ ___.

4. Economic principles are often expressed as tendencies, or what is typical, and are (fallacies, generalizations) ______ about people’s economic behavior. When studying a relationship between two economic variables, economists assume that other variables or factors (do, do not) ______ _ change, or in other words they are using the (utility, other-things-equal) ______ _ assumption.

5. The study of output in a particular industry or of a particular product is the subject of (microeconomics, macroeconomics) ______ ___, and the study of the total output of the economy or the general level of prices is the subject of ______ ___.

6. The collection of specific units that are being added and treated as if they were one unit is an (assumption, aggregate) ______ _.

7. Two different types of statements can be made about economic topics. A (positive, normative) ______ statement explains what is by offering a scientific proposition about economic behavior that is based on economic theory and facts, but a ______ statement includes a value judgment about an economic policy or the economy that suggests what ought to be. Many of the reported disagreements among economists usually involve (positive, normative) ______ statements.

8. The economizing problem arises because individuals’ and society’s economic wants for more goods and services or higher-quality goods and services are (limited, unlimited) ______ _ and the economic means or resources to satisfy those wants are ______ _.

9. A schedule or curve that shows the various combinations of two products a consumer can (buy, sell) ______ _ with a money income is called a (budget, marginal cost) ______ _ line.

10. All combinations of goods inside a budget line are (attainable, unattainable) ______ ___, and all combinations of goods outside the budget line are ______ _.

11. When a consumer’s income increases, the budget line shifts to the (left, right) ______ _, while a decrease in income shifts the budget line to the ______ _.

12. The four types of economic resources are

   a. ______ _

   b. ______ _

   c. ______ _

   d. ______ _

13. When a production possibilities table or curve is constructed, four assumptions are made:

   a. ______ _

   b. ______ _

   c. ______ _

   d. ______ _
14. Goods that satisfy economic wants directly are (consumer, capital goods), and goods that do so indirectly by helping produce other goods are _____ goods. Assume an economy can produce two basic types of goods, consumer and capital goods. If the economy wants to produce more consumer goods, then the capital goods the economy must give up are the opportunity (benefit, cost) _____ of producing those additional consumer goods.

15. The law of increasing opportunity costs explains why the production possibilities curve is (convex, concave) _____ from the origin. The economic rationale for the law is that economic resources (are, are not) _____ completely adaptable to alternative uses.

16. Optimal allocation of resources to production occurs when the marginal costs of the productive output are (greater than, less than, equal to) _____ the marginal benefits.

17. Following is a production possibilities curve for capital goods and consumer goods.

[Diagram of production possibilities curve]

a. If the economy moves from point A to point B, it will produce (more, fewer) _____ capital goods, and (more, fewer) _____ consumer goods.

b. If the economy is producing at point X, some resources in the economy are either (not available, unemployed) _____ or (underemployed, overemployed) _____.

c. If the economy moves from point X to point B (more, fewer) _____ capital goods and (more, fewer) _____ consumer goods will be produced.

d. If the economy is to produce at point Y, there must be (unemployment, economic growth) _____.

18. Economic growth will shift a nation's production possibilities curve (inward, outward) _____, and it occurs because of a resource supply (decrease, increase) _____ or because of a technological (decline, advance) _____.

19. An economy can produce goods for the present such as (consumer, capital) _____ goods and goods for the future such as _____ goods. If an economy produces more goods for the future, then this is likely to lead to a (greater, smaller) _____ shift outward in the production possibilities curve over time compared to the case where the economy produces more goods for the present.

20. International specialization and trade enable a nation to obtain (more, less) _____ of output than is possible with the output limits imposed by domestic production possibilities. The gains in output for an economy from greater international specialization and trade are similar to those that occur because of resource (increases, decreases) _____ or a technological (decline, advance) _____.

■ TRUE-FALSE QUESTIONS

Circle T if the statement is true, F if it is false.

1. Economics is the social science that studies how individuals, institutions, and society make choices under conditions of scarcity. T F

2. From the economic perspective, "there is no such thing as a free lunch." T F

3. The economic perspective views individuals or institutions as making purposeful choices based on the marginal analysis of the costs and benefits of decisions. T F

4. The scientific method involves the observation of real world data, the formulation of hypotheses based on the data, and the testing of those hypotheses to develop theories. T F

5. A well-tested or widely accepted economic theory is often called an economic principle or law. T F

6. The other-things-equal assumption (ceteris paribus) is made to simplify the economic analysis. T F

7. Microeconomic analysis is concerned with the performance of the economy as a whole or its major aggregates. T F

8. Macroeconomic analysis is concerned with the economic activity of specific firms or industries. T F

9. The statement that "the legal minimum wage should be raised to give working people a decent income" is an example of a normative statement. T F

10. A person is using positive economics when the person makes value judgments about how the economy should work. T F

11. The conflict between the unlimited economic wants of individuals or societies and limited economic means
and resources of individuals or societies gives rise to the economizing problem.  

12. The budget line shows all combinations of two products that the consumer can purchase, given money income and the prices of the products.  

13. A consumer is unable to purchase any of the combinations of two products which lie below (or to the left) of the consumer’s budget line.  

14. An increase in the money income of a consumer shifts the budget line to the right.  

15. The factors of production are land, labor, capital, and entrepreneurial ability.  

16. From the economist’s perspective, investment refers to money income.  

17. Given full employment and optimal allocation, it is not possible for an economy capable of producing just two goods to increase its production of both at any one point in time.  

18. The opportunity cost of producing more consumer goods is the other goods and services the economy is unable to produce because it has decided to produce these additional consumer goods.  

19. The opportunity cost of producing a good tends to increase as more of it is produced because resources less suitable to its production must be employed.  

20. Drawing a production possibilities curve bowed out from the origin is a graphical way of showing the law of increasing opportunity costs.  

21. The economic rationale for the law of increasing opportunity costs is that economic resources are fully adaptable to alternative uses.  

22. Optimal allocation is determined by assessing the marginal costs and benefits of the output from the allocation of resources to production.  

23. Economic growth means an increase in the production of goods and services and is shown by a movement of the production possibilities curve outward and to the right.  

24. The more capital goods an economy produces today, the greater will be the total output of all goods it can produce in the future, other things being equal.  

25. International specialization and trade permit an economy to overcome the limits imposed by domestic production possibilities and have the same effect on the economy as having more and better resources.  

■ MULTIPLE-CHOICE QUESTIONS

**Circle the letter that corresponds to the best answer.**

1. What statement would best complete a short definition of economics? Economics studies  
   (a) how businesses produce goods and services  
   (b) the equitable distribution of society’s income and wealth  
   (c) the printing and circulation of money throughout the economy  
   (d) how individuals, institutions, and society make optimal choices under conditions of scarcity

2. The idea in economics that “there is no such thing as a free lunch” means that  
   (a) the marginal benefit of such a lunch is greater than its marginal cost  
   (b) businesses cannot increase their market share by offering free lunches  
   (c) scarce resources have alternative uses or opportunity costs  
   (d) consumers are irrational when they ask for a free lunch

3. The opportunity cost of a new public stadium is the  
   (a) money cost of hiring guards and staff for the new stadium  
   (b) cost of constructing the new stadium in a future year  
   (c) change in the real estate tax rate to payoff the new stadium  
   (d) other goods and services that must be sacrificed to construct the new stadium

4. From the economic perspective, when a business decides to employ more workers, the business decision maker has most likely concluded that the marginal  
   (a) costs of employing more workers have decreased  
   (b) benefits of employing more workers have increased  
   (c) benefits of employing more workers are greater than the marginal costs  
   (d) costs of employing more workers are not opportunity costs for the business because more workers are needed to increase production

5. The combination of economic theories or principles into a simplified representation of reality is referred to as an economic  
   (a) fact  
   (b) model  
   (c) assumption  
   (d) hypothesis

6. Which would be studied in microeconomics?  
   (a) the output of the entire U.S. economy  
   (b) the general level of prices in the U.S. economy  
   (c) the output and price of wheat in the United States  
   (d) the total number of workers employed in the United States

7. When we look at the whole economy or its major aggregates, our analysis would be at the level of  
   (a) microeconomics  
   (b) macroeconomics  
   (c) positive economics  
   (d) normative economics

8. Which is a normative economic statement?  
   (a) The consumer price index rose 1.2 percent last month.  
   (b) The unemployment rate of 6.8 percent is too high.  
   (c) The average rate of interest on loans is 4.6 percent.  
   (d) The economy grew at an annual rate of 3.6 percent.
9. Sandra states that "there is a high correlation between consumption and income." Arthur replies that the correlation occurs because "people consume too much of their income and don't save enough."

(a) Both Sandra's and Arthur's statements are positive.
(b) Both Sandra's and Arthur's statements are normative.
(c) Sandra's statement is positive and Arthur's statement is normative.
(d) Sandra's statement is normative and Arthur's statement is positive.

10. Assume that a consumer can buy only two goods, A and B, and has an income of $100. The price of A is $10 and the price of B is $20. The maximum amount of A the consumer is able to purchase is

(a) 5
(b) 10
(c) 20
(d) 30

11. Assume that a consumer can buy only two goods, A and B, and has an income of $100. The price of A is $10 and the price of B is $20. What is the slope of the budget line if A is measured horizontally and B is measured vertically?

(a) -0.5
(b) -1.0
(c) -2.0
(d) -4.0

12. Tools, machinery, or equipment used to produce other goods would be examples of

(a) public goods
(b) capital goods
(c) social goods
(d) consumer goods

13. An entrepreneur innovates by

(a) making basic policy decisions in a business firm
(b) following government regulations to make a product
(c) coming up with a business idea or a concept
(d) commercializing a new product for a market

14. When a production possibilities schedule is written (or a production possibilities curve is drawn) in this chapter, four assumptions are made. Which is one of those assumptions?

(a) The state of technology changes.
(b) More than two products are produced.
(c) The economy has full employment of available resources.
(d) The quantities of all resources available to the economy are variable, not fixed.

Answer Questions 15, 16, and 17 on the basis of the data given in the following production possibilities table.

<table>
<thead>
<tr>
<th>Production possibilities (alternatives)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Capital goods</td>
</tr>
<tr>
<td>Consumer goods</td>
</tr>
</tbody>
</table>

15. If the economy is producing at production alternative D, the opportunity cost of 40 more units of consumer goods is

(a) 5 units of capital goods
(b) 10 units of capital goods
(c) 15 units of capital goods
(d) 20 units of capital goods

16. In the table above, the law of increasing opportunity costs is suggested by the fact that

(a) capital goods are relatively more scarce than consumer goods
(b) greater and greater quantities of consumer goods must be given up to get more capital goods
(c) smaller and smaller quantities of consumer goods must be given up to get more capital goods
(d) the production possibilities curve will eventually shift outward as the economy expands

17. The present choice of alternative B compared with alternative D would tend to promote

(a) increased consumption in the present
(b) decreased consumption in the future
(c) a greater increase in economic growth in the future
(d) a smaller increase in economic growth in the future

18. What is the economic rationale for the law of increasing opportunity costs?

(a) Optimal allocation and full employment of resources have not been achieved.
(b) Economic resources are not completely adaptable to alternative uses.
(c) Economic growth is being limited by the pace of technological advancement.
(d) An economy's present choice of output is determined by fixed technology and fixed resources.

19. The underallocation of resources by society to the production of a product means that the

(a) marginal benefit is greater than the marginal cost
(b) marginal benefit is less than the marginal cost
(c) opportunity cost of production is rising
(d) consumption of the product is falling

Answer Questions 20, 21, and 22 based on the following graph for an economy.

20. Unemployment and productive inefficiency would best be represented in the graph by point

(a) A
(b) B
(c) C
(d) D
21. The choice of point B over point A as the optimal product mix for society would be based on
(a) the state of technology
(b) full employment of resources
(c) the law of increasing opportunity costs
(d) a comparison of marginal costs and benefits

22. Economic growth could be represented by
(a) a movement from point A to point B
(b) a movement from point B to point A
(c) a shift in the production possibilities curve out to point C
(d) a shift in the production possibilities curve out to point D

23. If there is an increase in the resources available within the economy,
(a) the economy will be capable of producing fewer goods
(b) the economy will be capable of producing more goods
(c) the standard of living in the economy will decline
(d) the state of technology will deteriorate

24. Which situation would most likely shift the production possibilities curve for a nation in an outward direction?
(a) deterioration in product quality
(b) reductions in the supply of resources
(c) increases in technological advance
(d) rising levels of unemployment

25. You observe that more education is associated with more income and conclude that more income leads to more education. This would be an example of
(a) the post hoc fallacy
(b) the fallacy of composition
(c) confusing correlation and causation
(d) using the other-things-equal assumption

■ PROBLEMS

1. Use the appropriate number to match the terms with the phrases below.
1. economics 4. normative economics
2. microeconomics 5. macroeconomics
3. positive economics 6. marginal analysis

a. The attempt to establish scientific statements about economic behavior; a concern with "what is" rather than "what ought to be."

b. Part of economics that involves value judgments about what the economy should be like or the way the economic world should be.

c. Social science that studies how individuals, institutions, and society make optimal choices under conditions of scarcity.

d. Part of economics concerned with the economic behavior of individual units such as households, firms, and industries (particular markets).

e. The comparison of additional benefits and additional costs.

f. Part of economics concerned with the whole economy or its major sectors.

2. News report: "The worldwide demand for wheat from the United States increased and caused the price of wheat in the United States to rise." This is a specific instance of a more general economic principle. Of which economic generalization is this a particular example?

3. Following is a list of economic statements. Indicate in the space to the right of each statement whether it is positive (P) or normative (N). Then, in the last four lines below, write two of your own examples of positive economic statements and two examples of normative economic statements.

a. New York City should control the rental price of apartments.

b. Consumer prices rose at an annual rate of 4% last year.

c. Most people who are unemployed are just too lazy to work.

d. Generally, if you lower the price of a product, people will buy more of that product.

e. The profits of oil companies are too large and ought to be used to conduct research on alternative energy sources.

f. Government should do more to help the poor.

g. ____________________________ P

h. ____________________________ P

i. ____________________________ N

j. ____________________________ N

4. Following is a list of resources. Indicate in the space to the right of each whether the resource is land (LD), labor (LR), capital (C), entrepreneurial ability (EA), or some combinations of these resources.

a. Fishing grounds in the North Atlantic

b. A computer in a retail store

c. Oil shale deposits in Canada

d. An irrigation ditch in Nebraska

e. Bill Gates in his work in starting Microsoft

f. The oxygen breathed by human beings

g. A McDonald's restaurant in Rochester, Minnesota

h. The shelves of a grocery store

i. A machine in an auto plant
j. A person who creates a new Web site and uses it to start a successful business

k. A carpenter working for a construction company that is building a house

5. Following is a production possibilities table for two products, corn and cars. The table is constructed using the usual assumptions. Corn is measured in units of 100,000 bushels and cars in units of 100,000.

<table>
<thead>
<tr>
<th>Combination</th>
<th>Corn</th>
<th>Cars</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>B</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>C</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>D</td>
<td>18</td>
<td>4</td>
</tr>
<tr>
<td>E</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>F</td>
<td>25</td>
<td>2</td>
</tr>
<tr>
<td>G</td>
<td>27</td>
<td>1</td>
</tr>
<tr>
<td>H</td>
<td>28</td>
<td>0</td>
</tr>
</tbody>
</table>

a. Follow the general rules for making graphs (see the appendix to Chapter 1); plot the data from the table on the graph below to obtain a production possibilities curve. Place corn on the vertical axis and cars on the horizontal axis.

b. Fill in the following table showing the opportunity cost per unit of producing the 1st through the 7th car unit in terms of units of corn.

<table>
<thead>
<tr>
<th>Cars</th>
<th>Cost of production</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td></td>
</tr>
<tr>
<td>3rd</td>
<td></td>
</tr>
<tr>
<td>4th</td>
<td></td>
</tr>
<tr>
<td>5th</td>
<td></td>
</tr>
<tr>
<td>6th</td>
<td></td>
</tr>
<tr>
<td>7th</td>
<td></td>
</tr>
</tbody>
</table>

c. What is the marginal opportunity cost of the 3rd car unit in terms of units of corn?

d. What is the total opportunity cost of producing 6 car units in terms of units of corn?

■ SHORT ANSWER AND ESSAY QUESTIONS

1. What are the three interrelated features of the economic perspective?

2. What is the economic meaning of the statement “there is no such thing as a free lunch”?

3. What are the differences and similarities among the terms hypothesis, theory, principle, law, and model?

4. Why do economists use the “other things equal” assumption?

5. Why are economic principles necessarily generalized and abstract?

6. Explain the difference between microeconomics and macroeconomics.

7. What are some current examples of positive economic statements and normative economic statements?

8. Explain what the term “economizing problem” means for an individual and for society.

9. What is a budget line for an individual? How can it be used to illustrate trade-offs and opportunity costs?

10. What are the four economic resources? How is each resource defined?

11. What four assumptions are made in drawing a production possibilities curve or schedule?

12. What is the law of increasing opportunity costs? Why do opportunity costs increase?

13. What determines the optimal product mix for society’s production possibilities?

14. How can unemployment be illustrated with the production possibilities curve?

15. What will be the effect of increasing resource supplies on production possibilities?

16. Describe how technological advances will affect the production possibilities curve.

17. Explain the trade-off between goods for the present and goods for the future and the effect of this trade-off on economic growth.

18. What qualification do international specialization and trade make for the interpretation of production possibilities?

19. Use the production possibilities curve to explain the economics of war.

20. Explain each of the five pitfalls to sound economic reasoning.