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CHAPTER 2
ECONOMIC TOOLS AND ECONOMIC SYSTEMS

INTRODUCTION

This chapter emphasizes key ideas in economic analysis, such as opportunity cost, the production possibilities frontier, absolute and comparative advantage, the division of labor and the gains from specialization, and how economic systems answer the three economic questions of what, how, and for whom. All these ideas address the economic problem of how to allocate scarce resources among unlimited wants. The use of graphs was introduced in the Appendix to Chapter 1. In this chapter, graphs are integrated into the discussion.

CHAPTER OUTLINE

I. Choice and Opportunity Cost

A. **Opportunity Cost**: The value of the best alternative forgone when an item or activity is chosen. Because of scarcity, whenever people make a choice, another opportunity is forgone.

***Case Study**: The Opportunity Cost of College*

B. **Opportunity Cost Is Subjective**: Only the individual making the choice can identify the most attractive alternative.

1. Calculating opportunity cost requires time and information: learning about alternatives is costly and time consuming; some choices are based on limited or even wrong information.

2. Time is the ultimate constraint: even the richest person in the world suffers from scarcity of time; each activity involves an opportunity cost.

3. Opportunity cost varies with circumstances: opportunity cost depends on your alternatives.

C. **Sunk Cost and Choice**

- *Sunk cost***:** A cost that has already been incurred and cannot be recovered; is irrelevant for future and present economic decisions.
- *Economic decision makers* should ignore sunk costs and consider only those costs that are affected by the choice.

II. Comparative Advantage, Specialization, and Exchange

A. **The Law of Comparative Advantage**

- The individual, firm, region or country with the *lower opportunity cost* of producing a particular output should specialize in producing that output.

B. **Absolute Advantage Versus Comparative Advantage**

- *Absolute advantage*: The ability to produce a product with fewer resources than other producers require.

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- *Comparative advantage*: The ability to produce a product at a lower opportunity cost than other producers face. Resources are allocated most efficiently when production and trade conform to the law of comparative advantage.
- *Absolute advantage focuses on who uses the fewest resources and Comparative advantage focuses on what else those resources could produce*.

C. Specialization and Exchange

- *Barter*: A system of exchange in which products are traded directly for other products.
- *Money*: A medium of exchange in economies with extensive specialization

D. Division of Labor and Gains from Specialization

- Division of labor
- Specialization of labor
- Takes advantage of individual preferences and natural abilities
- Allows workers to develop more experience at a task
- Reduces the need to shift between tasks
- Permits the introduction of labor-saving machinery
- May be tedious and injury prone due to repetitive motion

III. The Economy's Production Possibilities

A. Efficiency and the Production Possibilities Frontier, or PPF

1. The *production possibilities frontier* (*PPF*) is a simple model designed to depict the production capabilities of an economy given current resources. The PPF assumes the following:
   - Output is limited to two broad classes of products: consumer goods and capital goods.
   - Production takes place over a given time period.
   - The economy's resources are fixed in quantity and quality over this period.
   - The available technology does not change during the period.
   - The "rules of the game" are also assumed fixed.

B. Inefficient and Unattainable Production

The *PPF* identifies possible combinations of the two types of goods that can be produced when all available resources are employed efficiently. Resources are employed efficiently when there is no change that could increase the production of one good without decreasing the production of the other good.

- *Efficient production*: getting the most from available resources, indicated by points *along* the production possibilities frontier. (See *Exhibit 2*)
- *Inefficient production*: points *inside* the PPF (See *Exhibit 2*)
- *Unattainable production*: points *outside* the PPF (See *Exhibit 2*)

C. The Shape of the PPF

- The PPF derives its *bowed-out* (concave) shape from the law of increasing opportunity cost.

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- Opportunity cost *increases* as the economy produces more of one good and less of the other because resources in the economy are not all perfectly adaptable to the production of both types of goods.
- If all resources were perfectly adaptable to alternative uses, the PPF would be a straight line, reflecting a constant opportunity cost along the PPF.

D. What Can Shift the PPF?

Economic Growth: is reflected by an outward shift of the PPF.

1. **Changes in resource availability:** people working longer hours, war
2. **Increases in the capital stock:** more capital goods produced during this period shifts the PPF outward the next period
3. **Technological change and more know-how:** discoveries that employ resources more efficiently
4. **Improvements in the rules of the game:** improvements in the formal and informal institutions that support the economy shift the PPF outward.

E. What We Learn from the PPF

- It illustrates the concepts of efficiency, scarcity, opportunity cost, economic growth, and the need for choice.
- It does not tell us which combination to choose. How society goes about choosing depends on the nature of the economic system.

IV. Economic Systems

A. Three Questions Every Economic System Must Answer

1. *What* goods and services are to be produced?
2. *How* are goods and services to be produced?
3. *For whom* are goods and services to be produced?

B. Pure Capitalism

Individual decision making through markets includes:

- Private ownership of all resources.
- Market prices generated in free markets guide resources to their most productive use.
- Goods and services are channeled to consumers who value them the most.
  - Adam Smith and the "invisible hand"
- *Flaws of a pure market system:*
  - No central authority protects property rights, enforces contracts, or ensures that rules of the game are followed.
  - People with no resources to sell could starve.
  - Some producers may try to monopolize markets by eliminating the competition.
  - Production or consumption of some goods involves damaging byproducts (i.e., pollution).
  - Private firms have no incentive to produce public goods.
  - Market economies experience economic fluctuations.
- Because of these limitations, *government* has been given some role in most market economies.

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C. Pure Command System

Resources are directed and production is coordinated not by market forces but by the "command" or central plan, of government.

- In theory, property is owned communally; central plans spell out answers to what, for whom, and how much; and individual choices are incorporated into central plans (communism).
- *Flaws of a pure command system*:
  - Running an economy is so complicated that some resources are used inefficiently.
  - Because no one person in particular owns resources, each person has less incentive to employ them in their highest-valued use, so some resources are wasted.
  - Central plans may reflect more the preferences of central planners than those of society.
  - Because government is responsible for all production, the variety of products tends to be more limited than in a capitalist economy.
  - Each individual has less personal freedom in making economic choices.
  - Because profit has no place in a command economy, people have less incentive to invent new and better products or find more efficient ways to make existing products.

D. Mixed and Transitional Economies

- No country exemplifies either type of economic system in its pure form.
- The United States represents a mixed system, with government directly accounting for about one third of all economic activity. In addition, government regulates the private sector in a variety of ways (e.g., antitrust, workplace safety, environmental quality, and zoning activities).

E. Economies Based on Custom or Religion

Molded largely by custom or religion—for example, the caste system in India or charging interest under Islamic law.

V. Conclusion

Although economies can answer the three economic questions in a variety of ways, we focus primarily on the mixed market system, such as exists in the United States. This type of economy blends private choice, guided by the price system in competitive markets, with public choice, guided by democracy in political markets. The study of mixed market systems grows more relevant as former command economies try to develop markets.

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CHAPTER SUMMARY

Resources are scarce, but human wants are unlimited. Because you cannot satisfy all your wants, you must choose, and whenever you choose, you must forgo some option. Choice involves an opportunity cost. The opportunity cost of the selected option is the value of the best alternative forgone.

The law of comparative advantage says that the individual, firm, region, or country with the lowest opportunity cost of producing a particular good should specialize in that good. Specialization according to the law of comparative advantage promotes the most efficient use of resources.

The specialization of labor increases efficiency *by (a) taking advantage of individual preferences and natural abilities, (b) allowing each worker to develop expertise and experience at a particular task, (c) reducing the need to shift between different tasks, and (d) allowing for the introduction of more specialized machines and large-scale production techniques.*

The production possibilities frontier, or PPF, shows the productive capabilities of an economy when all resources are used efficiently. The frontier's bowed-out shape reflects the law of increasing opportunity cost, which arises because some resources are not perfectly adaptable to the production of different goods. Over time, the frontier can shift in or out as a result of changes in the availability of resources, in technology, or in the rules of the game. The frontier demonstrates several economic concepts, including efficiency, scarcity, opportunity cost, the law of increasing opportunity cost, economic growth, and the need for choice.

All economic systems, regardless of their decision-making processes, must answer three basic questions: *What is to be produced? How is it to be produced? And for whom is it to be produced?* Economies answer the questions differently, depending on who owns the resources and how economic activity is coordinated. Economies can be directed by market forces, by the central plans of government, or, in most cases, by a mix of the two.

TEACHING POINTS

1. This chapter contains several fundamental concepts that should be fully discussed because they are used throughout the text to discuss economic choice in a variety of settings. When discussing opportunity cost and choice, be sure to distinguish between those costs that are associated with marginal decision making and those that are not (i.e., sunk costs). Also, many students will not immediately recognize that non-monetary costs are components of opportunity costs so it helps to emphasize this point.

2. Comparative advantage is a second important concept emphasized in this chapter. For additional examples of comparative advantage, consider the classic example in which an attorney can type and file faster and more accurately than a secretary. Because of comparative advantage, it will usually pay the lawyer to hire a secretary rather than to do the typing and filing because the opportunity cost is lower. Another example would be for Hawaii to specialize in pineapple growing and then trade with Idaho for potatoes. This chapter makes the point that opportunity cost is a relative concept, based on relative rather than absolute resource requirements in the production of goods. Because comparative advantage implies the specialization of resource use, trade becomes important in allocating goods to consumers. Students often note that self-reliance is an admirable concept. The discussion of comparative advantage shows that specialization and exchange lead to a more efficient allocation of resources.

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3. When drawing the production possibilities frontier, partition the horizontal axis into equal segments, and then show the ever-increasing amounts of the alternative good that must be sacrificed to obtain more of the good in question. You thereby illustrate the law of increasing opportunity costs. Students often confuse increasing total and increasing marginal opportunity costs. You should emphasize, through your construction, that it is incremental costs that are increasing. Draw your curve large with plenty of bow in it. Numerical examples are helpful to some students.

4. Sometimes people claim that the PPF is bowed out because of the law of diminishing returns. Diminishing returns, of course, assumes an increase in one type of resource, holding other resources constant. This is not the case along the PPF, because all resources tend to be reallocated between goods with movement along the PPF. You could incorporate the law of diminishing returns into your discussion by fixing capital between the sectors and then shifting only labor resources. The text's approach, however, is to assume that resources are not homogeneous; some are specific to the production of a particular good. The result is increasing opportunity costs and a bowed-out PPF.

5. Once the PPF is understood in terms of its construction and shape, it is important to emphasize the concepts that it illustrates. Scarcity is reflected by the fact that some output combinations are not feasible. The infinite number of output combinations that are feasible illustrates choice. Efficiency is illustrated when production occurs along the PPF, and the shape of the PPF illustrates the law of increasing opportunity costs. Furthermore, if resources are different, then the required specialization of resource usage implies that some form of trading occurs in order for each resource owner to consume all (both) goods.

6. A discussion of shifts in the production possibilities frontier leads naturally to a consideration of the sources of economic growth. Technological advance shifts the PPF. Such advances take time and require society to save, just as with the accumulation of physical capital. Emphasize that the PPF need not always shift out in a balanced way. Technological advance is often specific to an industry. Improvements in the rules of the game and in the education and health of the population may also lead to an outward shift in the PPF.

7. This chapter closes by considering how different economic systems answer the three economic questions. You may wish to discuss how numerous political systems have shifted toward more market-based economies over the past century to emphasize the capitalist approach. The chapter contains a fairly short reference to Adam Smith and his notion of the "invisible hand." You may want to discuss this important concept in more detail.

ANSWERS TO QUESTIONS FOR REVIEW

1. (*Opportunity Costs*) Discuss the ways in which the following conditions might affect the opportunity cost of going to a movie tonight:
   a. You have a final exam tomorrow.
   b. School will be out for one month starting tomorrow.
   c. The same movie will be on TV next week.
   d. The Superbowl is on TV tonight.

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a. This greatly increases the opportunity cost. Your opportunity cost includes the ticket price plus the value of the loss of study time and loss of sleep that may have a negative effect on your final exam grade tomorrow.
b. This significantly lowers the opportunity cost. Your opportunity cost includes the ticket price plus the value of any other activity you might have engaged in tonight instead, such as, staying home and watching TV.
c. This leaves the opportunity cost unchanged, but the movie becomes a less attractive alternative.
d. This may increase or decrease the opportunity cost, depending on whether or not you are a football fan.

2. (*Opportunity Costs*) Determine whether each of the following statements is true or false, or uncertain. Explain your answers:
   a. The opportunity cost of an activity is the total value of all the alternatives passed up.
   b. Opportunity cost is an objective measure of cost.
   c. When making choices, people carefully gather all available information about the costs and benefits of alternative choices.
   d. A decision maker seldom knows the actual value of a forgone alternative and therefore must make decisions based on expected values.

   a. FALSE. The opportunity cost is the value of only the single best alternative forgone.
   b. FALSE. Opportunity cost is a subjective measure of cost. Only the individual can estimate the expected benefits and costs to himself or herself.
   c. FALSE. Information is gathered only as long as the expected benefits from information gathering exceed the expected costs. Acquiring information about alternatives is costly and time consuming. Individuals usually make their choices based on limited and incorrect information because that was what was available given their time and cost constraints.
   d. TRUE. For example, you can guess that you will enjoy a movie and then find it too violent for your tastes.

3. (*Comparative Advantage*) "You should never buy precooked frozen foods because the price you pay includes the labor costs of preparing the food." Is this conclusion always valid, or can it be invalidated by the law of comparative advantage?

   This statement conflicts with the idea of comparative advantage. If your opportunity cost of preparing food is higher than the cost of buying prepared food, the law of comparative advantage would direct you to buy the product with the lowest opportunity cost*. There will be some people with very high time costs (e.g., surgeons), who will make the decision not to cook. The fact that prepared foods have become popular indicates that they are fulfilling a need. This need arises from the increasing opportunity cost of preparing one's own food. The increasing opportunity cost is caused by the fact that the value of time to the professional person is rising faster than the cost of precooked frozen food.*

4. (*Specialization and Exchange*) Explain how the specialization of labor can lead to increased productivity.

   People are assigned various tasks according to their individual skills, that is, their comparative advantages. Also, people become better at a task the more they practice it; no time is lost in moving from one task to another. Specialization allows a more efficient organization of the production process and the introduction of more efficient production methods. With specialization, it is possible for a group of people to produce much more than the group could if each person produced the entire product herself or himself.

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5. (*Production Possibilities*) Under what conditions is it possible to increase production of one good without decreasing production of another good*?*

An economy can produce more of one good without sacrificing production of another good if it is operating inside its PPF. The economy is inside the PPF when some resources are idle or when they are allocated inefficiently. Therefore, production can increase by using more of the idle resources or by allocating resources more efficiently.

6. (*Production Possibilities*) Under what conditions would an economy be operating inside its PPF? On its PPF? Outside its PPF?

The economy is inside its PPF if some resources are idle (unemployed) or if resources are allocated inefficiently. An economy is producing on its PPF if all resources are employed efficiently. An economy cannot operate outside of its PPF. Points outside the PPF represent unattainable combinations, given the resources, rules of the game, and the technology available.

7. (*Shifting Production Possibilities*) In response to an influx of undocumented workers, Congress made it a federal offense to hire them. How do you think this measure affected the U.S. production possibilities frontier? Do you think all industries were affected equally*?*

Such a law should cause the PPF to shift inward, because fewer resources would be available to the United States economy. The more labor-intensive industries, such as agriculture and services, would be hurt the most, especially those requiring unskilled labor.

8. (*Production Possibilities*) "If society decides to use its resources efficiently (that is, to produce *on* its production possibilities frontier), then future generations will be worse off because they will not be able to use these resources." If this assertion is true, full employment of resources may not be a good thing. Comment on the validity of this assertion.

The answer to this question depends on how the resources are used. If resources are used to produce consumer non-durables and if little capital is produced, then future generations will be worse off. If society's resources are used to produce capital goods and research, then economic growth in the future will be faster, making future generations better off. The key to this question is the realization that most of society's productive resources are reproducible and that full employment can promote growth.

9. *(Economic Questions)* What basic economic questions must be answered in a barter economy? In a primitive economy? In a capitalist economy? In a command economy?

All of the listed types of economies face the same three basic questions: what goods and services to produce, how to produce those goods and services, and for whom the goods and services should be produced.

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10. (*Economic Systems*) What are the major differences between a pure capitalist system and a pure command system? Is the United States closer to a pure capitalist system or to a pure command system?

Laws about resource ownership and the extent to which the government attempts to coordinate economic activity vary among economic systems from the most free (the capitalist system) to the most regimented (command system). A pure capitalist system is characterized by private ownership of all resources and coordination of all economic activity based on prices generated in free markets. A pure command economy is characterized as government control of both resources and production. The United States represents a mixed system with government accounting for about one third of all economic activity. In addition, government regulates the private economy in a number of ways (e.g., laws affecting antitrust, workplace safety, zoning, and illegal activities.)

ANSWERS TO PROBLEMS AND EXERCISES

11. (*CaseStudy: The Opportunity Cost of College)* During the Vietnam War period, colleges and universities were overflowing with students. Was this bumper crop of students caused by a greater expected return on a college education or by a change in the opportunity cost of attending college? Explain.

During the Vietnam War period, the armed forces were populated with male draftees. A male college student, however, received a deferment for the period during which he was a full-time student. Therefore, the opportunity cost of entering college, at least for the vast majority of young males, no longer included the civilian salary that one could have earned. For females, on the other hand, the opportunity cost may well have increased because of the labor shortage created by the draft and the increase in college attendance among males.

12. (*Sunk Cost and Choices*) Suppose you go to a restaurant and buy an expensive meal. Halfway through, despite feeling full, you decide to clean your plate. After all, you think, you paid for the meal, so you are going to eat all of it. What's wrong with this thinking*?*

This question highlights the importance of ignoring sunk costs in marginal decision making. Once you have purchased the meal, you cannot get your money back whether or not you finish the meal. There is no benefit to overeating.

13. (*Opportunity Cost*) You can either spend spring break working at home for $100 per day for five days or go to Florida for the week. If you stay home, your expenses will total about $120. If you go to Florida, the airfare, hotel, food and miscellaneous expenses will total about $1,000. What's your opportunity cost of going to Florida?

The opportunity cost is the total cost of going to Florida and includes dollar costs incurred as well as the forgone opportunity of working. Assuming you would work for five days if you stayed home, the cost of going to Florida would total $1,380: the $1,000 cost of going to Florida plus the net value of what you could have earned $380 ($500 in earnings less expenses of $120) if you stayed home.

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14. (*Absolute and Comparative Advantage*) You have the following information concerning the production of wheat and cloth in the United States and the United Kingdom:

	Labor Hours Required to Produce One Unit	
	United Kingdom	**United States**
Wheat	2	1
Cloth	6	5

a. What is the opportunity cost of producing a unit of wheat in the United Kingdom? In the United States?
b. Which country has an absolute advantage in producing wheat? In producing cloth?
c. Which country has a comparative advantage in producing wheat? In producing cloth?
d. Which country should specialize in producing wheat? In producing cloth?

a. In the United Kingdom, the opportunity cost of one unit of wheat is 1/3 unit of cloth (producing one unit of wheat uses 2 labor hours, the amount of resource that would allow you to produce only 1/3 of a unit of cloth). In the United States, the opportunity cost of one unit of wheat is 1/5 unit of cloth (producing one unit of wheat uses 1 labor hour, the amount of resource that would allow you to produce only 1/5 unit of cloth).
b. The United States has an absolute advantage in both goods; it is able to produce both products with fewer resources than the United Kingdom requires.
c. The United States has a comparative advantage in wheat because it has the lowest opportunity cost of producing (one fifth cloth versus one third cloth for the United Kingdom), while the United Kingdom has the comparative advantage in cloth. (The opportunity cost of cloth in the United States is 5 wheat. The opportunity cost of cloth in the United Kingdom is 3 wheat.)
d. The United States should specialize in wheat, and the United Kingdom should specialize in cloth. The country with the lower opportunity cost of producing a good should specialize in producing that output.

15. *(Specialization)* Provide some examples of specialized markets or retail outlets. What makes the Web so conducive to specialization*?*

Students' answers will vary according to their experiences. One specialized market is that for military weapons. The stock exchange provides a specialized market for buying and selling company shares, and there are specialized markets for selling government bonds and foreign currencies. Specialized retail outlets could include movie theaters specializing in "art" films, wine shops, cheese shops, language schools, and so forth. Media such as the Web allow firms in specialized markets to advertise their products at relatively low cost, and also permit customers to conduct interactive online searches for relatively specialized goods and services.

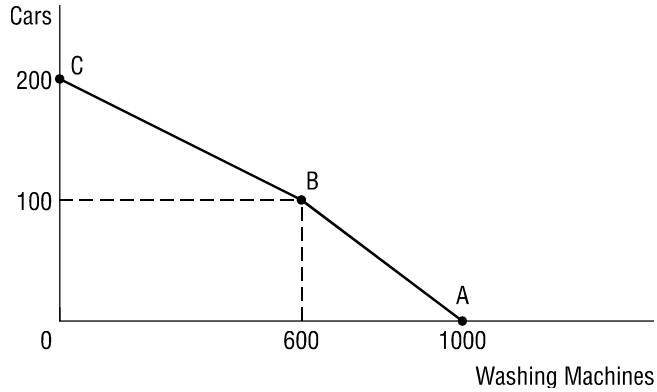
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16. (*Shape of the PPF*) Suppose a production possibilities frontier includes the following combinations:

Data Point	Cars	Washing Machines
A	0	1,000
B	100	600
C	200	0

a. Graph the PPF, assuming that it has no curved segments.
b. What is the cost of producing an additional car when 50 cars are being produced?
c. What is the cost of producing an additional car when 150 cars are being produced?
d. What is the cost of producing an additional washing machine when 50 cars are being produced? When 150 cars are being produced?
e. What do your answers tell you about opportunity costs?



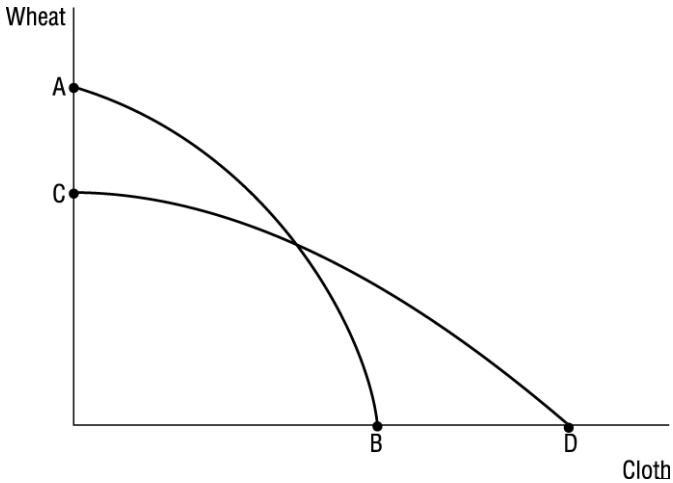
a. The PPF drawn above is composed of two straight-line segments, AB *and* BC.
b. The cost of a car when 50 cars are produced is 4 washing machines. In the segment BC*, as you move from 0 to 100 cars, you must give up 1,000 − 600 = 400 washing machines. Thus, each additional car costs 400 /100 = 4 washing machines along segment* BC *of this PPF.*
c. The cost of a car when 150 cars are produced is 6 washing machines. In the segment AB *of this PPF, as you move from 100 to 200 cars, you must forgo 600 washing machines. Thus, each additional car costs 600 /100 = 6 washing machines along segment* AB *of this PPF. The 150th car costs you 6 washing machines.*
The cost of a washing machine when 50 cars are produced is one quarter of a car. In the segment BC*, as you move from 600 to 1,000 washing machines, you must forgo 100 cars. [(100/(1,000−600))] = ¼, the slope of segment* BC *of the PPF.* Note: *The PPF would indicate that when 50 cars are produced, 800 washing machines can be produced.*
d. The cost of an additional washing machine when 150 cars are produced is one sixth of a car. In the segment AB*, as you move from 0 to 600 washing machines, you must forego 100 cars. (100/600) = 1/6, the slope of segment AB of the PPF. Note: The PPF indicates that when 150 cars are produced, only 300 washing machines are produced. Also note that the answers to this question are the inverse of the answers to questions (b) and (c).*
e. As you increase the production level of either good, its (opportunity) cost per unit eventually increases. When you go from 50 cars produced to 150 cars produced, the cost in terms of washing machines forgone rises from 4 washing machines to 6 washing machines. When you go from 300 washing machines produced to 800 washing machines produced, the opportunity cost in terms of cars forgone rises from 1/6 of a car to 1/4 of a car.

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17. (*Production Possibilities*) Suppose an economy uses two resources (labor and capital) to produce two goods (wheat and cloth). Capital is relatively more useful in producing cloth, and labor is relatively more useful in producing wheat. If the supply of capital falls by 10 percent and the supply of labor increases by 10 percent, how will the PPF for wheat and cloth change?

The PPF will shift inward along the axis measuring cloth production and outward along the axis measuring wheat production. This is represented by a shift from CD *to* AB *on the following graph:*



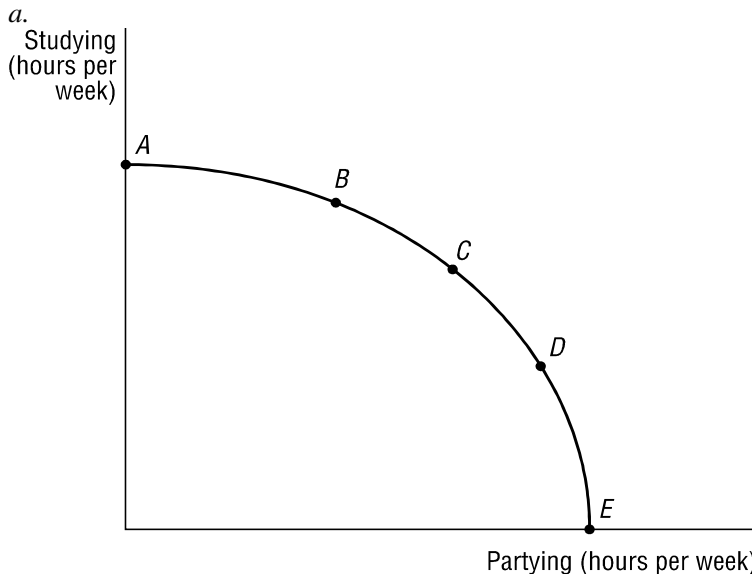
18. (*Production Possibilities*) There's no reason why a production possibilities frontier could not be used to represent the situation facing an individual. Imagine your own PPF. Right now—today—you have certain resources—your time, your skills, perhaps some capital. And you can produce various outputs. Suppose you can produce combinations of two outputs, call them studying and partying.

a. Draw your PPF for studying and partying. Be sure to label the axes of the diagram appropriately. Label the points where the PPF intersects the axes, as well as several other points along the frontier.
b. Explain what it would mean for you to move upward and to the left along your personal PPF. What kinds of adjustments would you have to make in your life to make such a movement along the frontier?
c. Under what circumstances would your personal PPF shift outward? Do you think the shift would be a "parallel" one? Why, or why not?

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a.



b. Moving upward and to the left along the PPF could be represented by a move from point C to point B. You would be giving up some partying to engage in more studying. You would have to focus your schedule so that you would frequent places where there were inducements to study rather than to party. The library, a quiet spot in the cafeteria, or a café playing classical music and offering quiet solitude would be your quest for at least a few more hours of the week.

c. The PPF drawn assumes that you have a fixed amount of time skills as well as some capital. Your time available can't change; there are only 24 hours in a day. However, your study skills could be enhanced by training or by acquiring a new computer. This increase in skills and capital in the production of studying would shift the PPF outward along the vertical axis, indicating that with the same time constraint, you are able to accomplish more studying. A parallel shift in the PPF could occur if that new computer also allowed you greater satisfaction partying on the internet. In this imagined example, the computer, the capital good, would enable you to do more of both in the same time.

19. (*Shifting Production Possibilities*) Determine whether each of the following would cause the economy's PPF to shift inward, outward, or not at all:
    a. An increase in average length of annual vacations
    b. An increase in immigration
    c. A decrease in the average retirement age
    d. The migration of skilled workers to other countries

    Items a, c, and d all decrease the amount of labor available; thus, the PPF would shift inward. Item b increases the available labor, and thus the PPF would shift outward.

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20. (*Economic Systems*) The United States is best described as having a mixed economy. What are some elements of command in the U.S. economy? What are some elements of tradition?

The government represents an element of command in the U.S. economy. Government accounts for about one third of all economic activity. In addition, government regulates the private economy in a number of areas including antitrust, workplace safety, zoning, food safety, illegal activities, and so on. Elements of tradition or custom would include our style of dress, our choice of occupation similar to that of our parents, and our fierce adherence to the English system of measurement rather than the metric system used by the rest of the world.

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CASE STUDY

PUBLIC POLICY

Rules of the Game and Economic Development

Rules of the game can affect the Production Possibilities Frontier by either nurturing or discouraging economic development. Businesses supply jobs, tax revenue, and consumer products, but owning and operating a business is risky even in the best of times. How hard is it for an entrepreneur to start a business, import products for sale, comply with tax laws, and settle business disputes? The World Bank, a nonprofit international organization, has developed a composite measure that rolls answers to all these questions into a single measure and ranks 189 countries from best to worst based on their ease of doing business. Exhibit 4 lists the best 10 and the worst 10 countries in terms of the ease of doing business. The countries with the friendliest business climate all have a high standard of living and a sophisticated economy. The United States ranks seventh. The 10 most difficult countries all have a low standard of living, a poor economy, and eight are in Africa.

Consider, for example, the complications in Eritrea, a small African country, where starting a business requires 13 procedures and takes 84 days. In contrast, to start a business in Singapore takes only 4 procedures and 2.5 days. Eritrea is one of the poorest countries on earth based on per capita income. Singapore is among the richest.

How does the burden imposed by business taxes differ across countries? In Eritrea, businesses are subject to a tax rate totalling 84 percent of profits. So, nearly all business profits are eaten up by taxes, in the process destroying the primary reason to even open a business. Meanwhile, a business in Singapore pays a tax rate amounting to only 18 percent of profit.

Of course, some level of business regulation and taxation is necessary to ensure public health and safety and to nurture market competition. Few would argue, however, that the world's most prosperous economies have allowed businesses to go wild. But why would a country impose taxes and regulations so severe as to kill business development, thereby choking off the jobs, taxes, and consumer products that go with it? One possible explanation is that many countries with the worst business climate were once under colonial rule and have not yet developed the ability to operate government efficiently. Another possibility is that governments in poor countries usually offer the most attractive jobs around. Politicians create government jobs for friends, relatives, and supporters. Overseeing bureaucratic regulations gives all these people something to do, and high tax rates are needed to pay the salaries of all these political cronies.

Perhaps the darkest explanation for the bad business climate in some countries is that business regulations and tax laws provide government bureaucrats with more opportunities for graft and corruption. For example, the more government documents needed to execute a business transaction, the more opportunities to seek bribes. In other words, obstacles are put in the way of business so government bureaucrats can demand bribes to circumvent those obstacles. Even Irish rocker Bono, a longtime supporter of aid to Africa, has called for "advances in fighting the evils of corruption in Africa." Regardless of the explanation, poor countries are poor in part because they have not yet developed the rules of the game that nurture a prosperous economy.

EXHIBIT 3 Best 10 and Worst 10 Among 189 Countries Based on Ease of Doing Business

Best 10	Worst 10
1. Singapore	180. Equatorial Guinea
2. New Zealand	181. Angola
3. Denmark	182. Haiti
4. South Korea	183. Chad
5. Hong Kong, China	184. Democratic Republic of Congo
6. United Kingdom	185. Central African Republic
7. United States	186. Venezuela
8. Sweden	187. South Sudan
9. Norway	188. Libya
10. Finland	189. Eritrea

Source: *Doing Business 2016: Measuring Regulatory Quality and Efficiency* (World Bank Publications, 2016) at http://www.doingbusiness.org/.

Source: *Doing Business 2016: Measuring Regulatory Quality and Efficiency* (World Bank Publications, 2016) at http://www.doingbusiness.org/; and Bono, "A Time for Miracles," *Time,* 2 April 2007.

Case Study Discussion Questions: Why is the standard of living higher in countries where doing business is easier? Why do governments collect any business taxes or impose any business regulations at all?