

to mow the lawn, the same economic forces are at work. The principle of comparative advantage shows that trade can make everyone better off.

Having seen why interdependence is desirable, you might naturally ask how it is possible. How do free societies coordinate the diverse activities of all the people involved in their economies? What ensures that goods and services will get from those who should be producing them to those who should be consuming them? In a world with only two people, such as the rancher and the farmer, the answer is simple: These two people can bargain and allocate resources between themselves. In the real world with billions of people, the answer is less obvious. We take up this issue in the next chapter, where we see that free societies allocate resources through the market forces of supply and demand.

SUMMARY

- Each person consumes goods and services produced by many other people both in the United States and around the world. Interdependence and trade are desirable because they allow everyone to enjoy a greater quantity and variety of goods and services.
- There are two ways to compare the ability of two people in producing a good. The person who can produce the good with the smaller quantity of inputs is said to have an *absolute advantage* in producing the good. The person who has the smaller opportunity cost of producing the good is said to have a *comparative advantage*. The gains from trade are based on comparative advantage, not absolute advantage.
- Trade makes everyone better off because it allows people to specialize in those activities in which they have a comparative advantage.
- The principle of comparative advantage applies to countries as well as to people. Economists use the principle of comparative advantage to advocate free trade among countries.

KEY CONCEPTS

absolute advantage, p. 54
opportunity cost, p. 54

comparative advantage, p. 55
imports, p. 58

exports, p. 58

QUESTIONS FOR REVIEW

1. Under what conditions is the production possibilities frontier linear rather than bowed out?
2. Explain how absolute advantage and comparative advantage differ.
3. Give an example in which one person has an absolute advantage in doing something but another person has a comparative advantage.
4. Is absolute advantage or comparative advantage more important for trade? Explain your reasoning using the example in your answer to Question 3.
5. If two parties trade based on comparative advantage and both gain, in what range must the price of the trade lie?
6. Will a nation tend to export or import goods for which it has a comparative advantage? Explain.
7. Will a nation tend to export or import goods for which it has an absolute advantage? Explain.
8. Why do economists oppose policies that restrict trade among nations?

PROBLEMS AND APPLICATIONS

- Maria can read 20 pages of economics in an hour. She can also read 50 pages of sociology in an hour. She spends 5 hours per day studying.
 - Draw Maria's production possibilities frontier for reading economics and sociology.
 - What is Maria's opportunity cost of reading 100 pages of sociology?
- American and Japanese workers can each produce 4 cars a year. An American worker can produce 10 tons of grain a year, whereas a Japanese worker can produce 5 tons of grain a year. To keep things simple, assume that each country has 100 million workers.
 - For this situation, construct a table analogous to the table in Figure 1.
 - Graph the production possibilities frontier of the American and Japanese economies.
 - For the United States, what is the opportunity cost of a car? Of grain? For Japan, what is the opportunity cost of a car? Of grain? Put this information in a table analogous to Table 1.
 - Which country has an absolute advantage in producing cars? In producing grain?
 - Which country has a comparative advantage in producing cars? In producing grain?
 - Without trade, half of each country's workers produce cars and half produce grain. What quantities of cars and grain does each country produce?
 - Starting from a position without trade, give an example in which trade makes each country better off.
- Pat and Kris are roommates. They spend most of their time studying (of course), but they leave some time for their favorite activities: making pizza and brewing root beer. Pat takes 4 hours to brew a gallon of root beer and 2 hours to make a pizza. Kris takes 6 hours to brew a gallon of root beer and 4 hours to make a pizza.
 - What is each roommate's opportunity cost of making a pizza? Who has the absolute advantage in making pizza? Who has the comparative advantage in making pizza?
 - If Pat and Kris trade foods with each other, who will trade away pizza in exchange for root beer?
 - The price of pizza can be expressed in terms of gallons of root beer. What is the highest price at which pizza can be traded that would make both roommates better off? What is the lowest price? Explain.
- Suppose that there are 10 million workers in Canada and that each of these workers can produce either 2 cars or 30 bushels of wheat in a year.
 - What is the opportunity cost of producing a car in Canada? What is the opportunity cost of producing a bushel of wheat in Canada? Explain the relationship between the opportunity costs of the two goods.
 - Draw Canada's production possibilities frontier. If Canada chooses to consume 10 million cars, how much wheat can it consume without trade? Label this point on the production possibilities frontier.
 - Now suppose that the United States offers to buy 10 million cars from Canada in exchange for 20 bushels of wheat per car. If Canada continues to consume 10 million cars, how much wheat does this deal allow Canada to consume? Label this point on your diagram. Should Canada accept the deal?
- England and Scotland both produce scones and sweaters. Suppose that an English worker can produce 50 scones per hour or 1 sweater per hour. Suppose that a Scottish worker can produce 40 scones per hour or 2 sweaters per hour.
 - Which country has the absolute advantage in the production of each good? Which country has the comparative advantage?
 - If England and Scotland decide to trade, which commodity will Scotland trade to England? Explain.
 - If a Scottish worker could produce only 1 sweater per hour, would Scotland still gain from trade? Would England still gain from trade? Explain.
- The following table describes the production possibilities of two cities in the country of Baseballia:

| | Pairs of Red Socks per Worker per Hour | Pairs of White Socks per Worker per Hour |
|---------|---|---|
| Boston | 4 | 2 |
| Chicago | 2 | 1 |

 - Without trade, what is the price of white socks (in terms of red socks) in Boston? What is the price in Chicago?
 - Which city has an absolute advantage in the production of each color sock? Which city has a comparative advantage in the production of each color sock?
 - Will these cities trade socks with one another? Explain.