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The Economic Problem: Scarcity and Choice



2

CHAPTER OUTLINE

Scarcity, Choice, and Opportunity Cost

- Scarcity and Choice in a One-Person Economy
- Scarcity and Choice in an Economy of Two or More
- The Production Possibility Frontier
- The Economic Problem

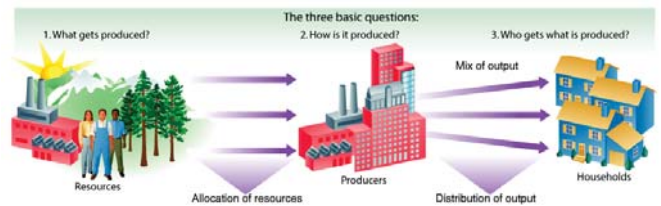
Economic Systems and the Role of Government

- Command Economies
- Laissez-Faire Economies: The Free Market
- Mixed Systems, Markets, and Governments

Looking Ahead

▼ **FIGURE 2.1** The Three Basic Questions

Every society has some system or process that transforms its scarce resources into useful goods and services. In doing so, it must decide what gets produced, how it is produced, and to whom it is distributed.



The primary resources that must be allocated are land, labor, and capital.

capital Things that are produced and then used in the production of other goods and services.

factors of production (or factors) The inputs into the process of production. Another term for resources.

production The process that transforms scarce resources into useful goods and services.

inputs or resources Anything provided by nature or previous generations that can be used directly or indirectly to satisfy human wants.

outputs Goods and services of value to households.

Scarcity, Choice, and Opportunity Cost

Scarcity and Choice in a One-Person Economy

Nearly all the same basic decisions that characterize complex economies must also be made in a simple economy.



What is the difference between a single-person economy and a more complex economy?

- Most decisions that characterize a complex economy don't have to be made by an economy with a single person.
- Most resources that are scarce in a complex economy are usually abundant in a simple economy.
- In a single-person economy, the concept of opportunity cost does not apply.
- In a single-person economy, the mechanics of decision making are simpler than those of a more complex economy.
- All of the above.

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Opportunity Cost

The concepts of *constrained choice* and *scarcity* are central to the discipline of economics.

opportunity cost The best alternative that we give up, or forgo, when we make a choice or decision.



Using a day at the beach as an example, what is the opportunity cost of leisure?

- Leisure is free. For example, you don't have to pay for the benefit of enjoying the sun or relaxing at the beach.
- Leisure has an opportunity cost only if there is a cost associated with it. For example, entering the beach may require you to pay a fee.
- The opportunity cost of leisure at the beach is the value of the things that you could have produced during the time you were at the beach. For example, you could have used the time to work and earn some money.
- According to economists, leisure activities are the only activities that do not carry an opportunity cost.

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ECONOMICS IN PRACTICE

Frozen Foods and Opportunity Costs

The growth of the frozen dinner entrée market in the last 50 years is a good example of the role of opportunity costs in our lives.

Many entrepreneurs find that the simple tools of economics—like the idea of opportunity costs—help them anticipate what products will be profitable for them to produce in the future.



THINKING PRACTICALLY

- Many people think that soda consumption leads to increased obesity, and many schools have banned the sale of soda in vending machines. Use the idea of opportunity costs to explain why some people think these bans will reduce consumption. Do you agree?

Scarcity and Choice in an Economy of Two or More

Specialization, Exchange, and Comparative Advantage

theory of comparative advantage Ricardo's theory that specialization and free trade will benefit all trading parties, even those that may be "absolutely" more efficient producers.

absolute advantage A producer has an absolute advantage over another in the production of a good or service if he or she can produce that product using fewer resources (a lower absolute cost per unit).

comparative advantage A producer has a comparative advantage over another in the production of a good or service if he or she can produce that product at a lower *opportunity cost*.

► FIGURE 2.2 Comparative Advantage and the Gains from Trade

Panel (a) shows the best Colleen and Bill can do each day, given their talents and assuming they each wish to consume an equal amount of food and wood.

Panel (b) shows what happens when both parties specialize. Notice more units are produced of each good.

a. Daily production with no specialization, assuming Colleen and Bill each want to consume an equal number of logs and food

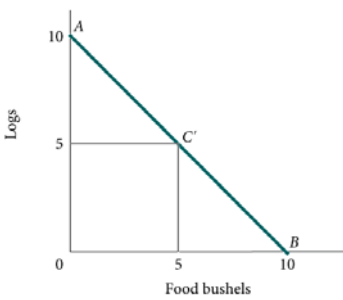
	Wood (logs)	Food (bushels)
Colleen	5	5
Bill	$2\frac{2}{3}$	$2\frac{2}{3}$
Total	$7\frac{2}{3}$	$7\frac{2}{3}$

b. Daily Production with Specialization

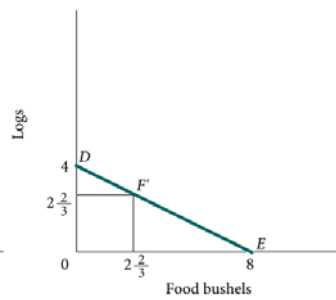
	Wood (logs)	Food (bushels)
Colleen	10	0
Bill	0	8
Total	10	8

A Graphical Presentation of the Production Possibilities and Gains from Specialization

a. Colleen's production possibilities



b. Bill's production possibilities



▲ FIGURE 2.3 Production Possibilities with and without Trade

This figure shows the combinations of food and wood that Colleen and Bill can each generate in one day of labor, working by themselves.

Colleen can achieve independently any point along line ACB, while Bill can generate any combination of food and wood along line DFE.

Specialization and trade would allow both Bill and Colleen to move to the right of their original lines, to points like C

better off than they were acting alone.

Weighing Present and Expected Future Costs and Benefits

We trade off present and future benefits in small ways all the time.

Capital Goods and Consumer Goods

consumer goods Goods produced for present consumption.

investment The process of using resources to produce new capital.

The Production Possibility Frontier

production possibility frontier (ppf) A graph that shows all the combinations of goods and services that can be produced if all of society's resources are used efficiently.

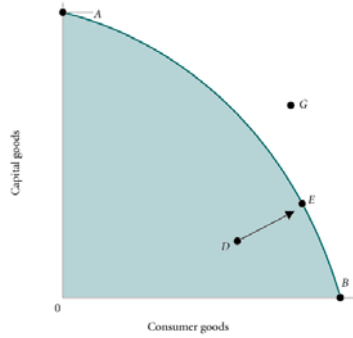
All points below and to the left of the curve (the shaded area) represent combinations of capital and consumer goods that are possible for the society given the resources available and existing technology. Points above and to the right of the curve, such as point G, represent combinations that cannot be reached.

If an economy were to end up at point A on the graph, it would be producing no consumer goods at all; all resources would be used for the production of capital.

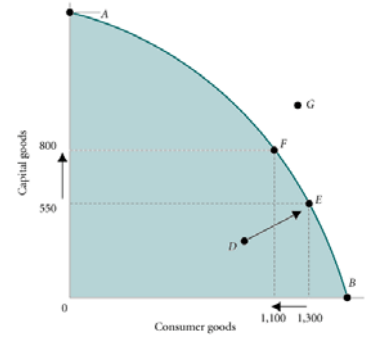
If an economy were to end up at point B, it would produce only consumer goods.



Although an economy may be operating with full employment of its land, labor, and capital resources, it may still be operating inside its ppf, at a point such as *D*. The economy could be using those resources *inefficiently*. Periods of unemployment also correspond to points inside the ppf, such as point *D*. Moving onto the frontier from a point such as *D* means achieving full employment of resources.

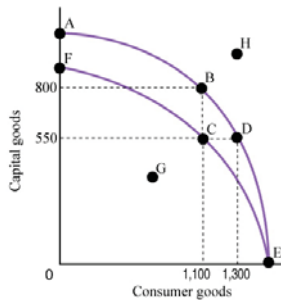


► FIGURE 2.4 Production Possibility Frontier
The ppf illustrates a number of economic concepts. One of the most important is *opportunity cost*. The opportunity cost of producing more capital goods is fewer consumer goods. Moving from *E* to *F*, the number of capital goods increases from 550 to 800, but the number of consumer goods decreases from 1,300 to 1,100.



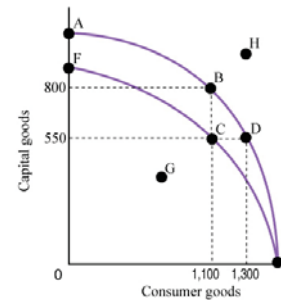
Consider the figure below. As this country moves from point *D* to point *B* along the production possibility frontier *AE*,

- the opportunity cost of building more consumer goods rises.
- the opportunity cost of building more capital goods rises.
- the opportunity cost is not affected because the curve does not shift.
- the opportunity cost of producing more of either consumer goods or capital goods rises.



Consider the figure below. As this country moves from point *D* to point *B* along the production possibility frontier *AE*,

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- the opportunity cost is not affected because the curve does not shift.
- the opportunity cost of producing more of either consumer goods or capital goods rises.



Negative Slope and Opportunity Cost

marginal rate of transformation (MRT) The slope of the production possibility frontier (ppf).

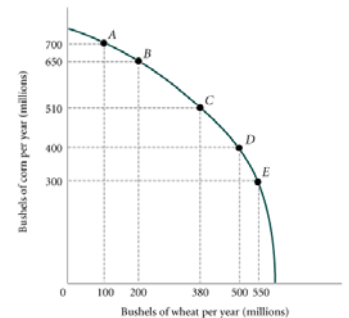
The Law of Increasing Opportunity Cost

▼ FIGURE 2.5 Corn and Wheat Production in Ohio and Kansas

The ppf illustrates that the opportunity cost of corn production increases as we shift resources from wheat production to corn production. Moving from point *E* to *D*, we get an additional 100 million bushels of corn at a cost of 50 million bushels of wheat. Moving from point *B* to *A*, we get only 50 million bushels of corn at a cost of 100 million bushels of wheat. The *cost per bushel* of corn—measured in lost wheat—has increased.

TABLE 2.1 Production Possibility Schedule for Total Corn and Wheat Production in Ohio and Kansas

Point	Total Corn Production (Millions of Bushels per Year)	Total Wheat Production (Millions of Bushels per Year)
A	700	100
B	650	200
C	510	380
D	400	500
E	300	550



Unemployment

During economic downturns or recessions, industrial plants run at less than their total capacity. When there is unemployment of labor and capital, we are not producing all that we can.

Inefficiency

Waste and mismanagement are the results of a firm operating below its potential.

Sometimes inefficiency results from mismanagement of the economy instead of mismanagement of individual private firms.

► **FIGURE 2.6 Inefficiency from Misallocation of Land in Farming**

Society can end up inside its ppf at a point such as A by using its resources inefficiently.

If, for example, Ohio's climate and soil were best-suited for corn production and those of Kansas were best suited for wheat production, a law forcing Kansas farmers to produce corn and Ohio farmers to produce wheat would result in less of both. In such a case, society might be at point A instead of point B.



The Efficient Mix of Output

To be efficient, an economy must produce what people want.

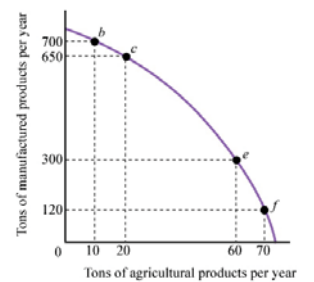
Economic Growth

economic growth An increase in the total output of an economy. Growth occurs when a society acquires new resources or when it learns to produce more using existing resources.



Refer to the figure. A 10-ton increase in the production of farm goods requires a sacrifice of manufactured goods that is:

- greater between points *b* and *c* than between points *e* and *f*.
- greater between points *e* and *f* than between points *b* and *c*.
- proportionally the same between any two points.
- less and less as you move downward along the curve.



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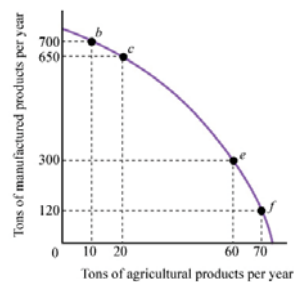


TABLE 2.2 Increasing Productivity in Corn and Wheat Production in the United States, 1935–2009

	Corn		Wheat	
	Yield per Acre (Bushels)	Labor Hours per 100 Bushels	Yield per Acre (Bushels)	Labor Hours per 100 Bushels
1935–1939	26.1	108	13.2	67
1945–1949	36.1	53	16.9	34
1955–1959	48.7	20	22.3	17
1965–1969	78.5	7	27.5	11
1975–1979	95.3	4	31.3	9
1981–1985	107.2	3	36.9	7
1985–1990	112.8	NA ^a	38.0	NA ^a
1990–1995	120.6	NA ^a	38.1	NA ^a
1998	134.4	NA ^a	43.2	NA ^a
2001	138.2	NA ^a	43.5	NA ^a
2006	145.6	NA ^a	42.3	NA ^a
2007	152.8	NA ^a	40.6	NA ^a
2008	153.9	NA ^a	44.9	NA ^a
2009	164.9	NA ^a	44.3	NA ^a

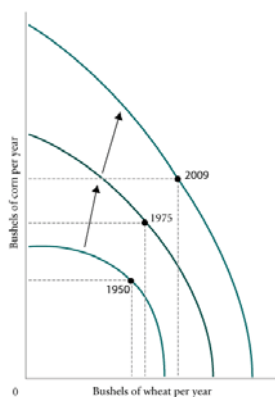
^aData not available.

► **FIGURE 2.7 Economic Growth Shifts the PPF Up and to the Right**

Productivity increases have enhanced the ability of the United States to produce both corn and wheat.

As Table 2.2 shows, productivity increases were more dramatic for corn than for wheat. Thus, the shifts in the ppf were not parallel.

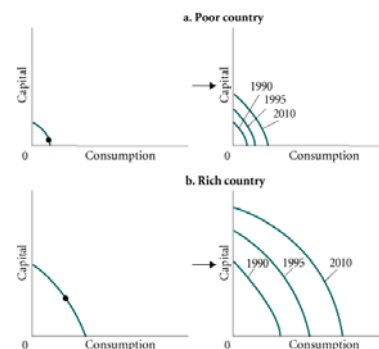
Note: The ppf also shifts if the amount of land or labor in corn and wheat production changes. Although we emphasize productivity increases here, the actual shifts between years were due in part to land and labor changes.



Sources of Growth and the Dilemma of Poor Countries

► **FIGURE 2.8 Capital Goods and Growth in Poor and Rich Countries**

Rich countries find it easier than poor countries to devote resources to the production of capital, and the more resources that flow into capital production, the faster the rate of economic growth. Thus, the gap between poor and rich countries has grown over time.



ECONOMICS IN PRACTICE

Trade-Offs among the Rich and Poor

In all societies, for all people, resources are limited relative to people's demands.

In 1990, the World Bank defined the extremely poor people of the world as those earning less than \$1 a day. Even for the poorest consumers, however, biological need is not all determining.

In societies with very few entertainment outlets, we may see more demand for festivals, indicating that even in extremely poor societies, household choice plays a role.



THINKING PRACTICALLY

1. Why might we see a greater demand for festivals in poor countries than in rich ones? How might this be affected by choices available?

The Economic Problem

Recall the three basic questions facing all economic systems:

- (1) What gets produced?
- (2) How is it produced?
- (3) Who gets it?

Given scarce resources, how do large, complex societies go about answering the three basic economic questions?

Economic Systems and the Role of Government

Command Economies

command economy An economy in which a central government either directly or indirectly sets output targets, incomes, and prices.

Laissez-Faire Economies: The Free Market

laissez-faire economy Literally from the French: "allow [them] to do." An economy in which individual people and firms pursue their own self-interest without any central direction or regulation.

market The institution through which buyers and sellers interact and engage in exchange.

Some markets are simple and others are complex, but they all involve buyers and sellers engaging in exchange. The behavior of buyers and sellers in a laissez-faire economy determines what gets produced, how it is produced, and who gets it.



A market exists primarily in what type of economic system?

- a. A *command economy*.
- b. A *laissez-faire economy*.
- c. A *democracy*.
- d. A *dictatorship*.
- e. An *economy in transition*.

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Consumer Sovereignty

consumer sovereignty The idea that consumers ultimately dictate what will be produced (or not produced) by choosing what to purchase (and what not to purchase).

Individual Production Decisions: Free Enterprise

free enterprise The freedom of individuals to start and operate private businesses in search of profits.

Distribution of Output

The amount that any one household gets depends on its income and wealth.

Income is the amount that a household earns each year. It comes in a number of forms: wages, salaries, interest, and the like.

Wealth is the amount that households have accumulated out of past income through saving or inheritance.



Which of the following problems are typical of a market system?

- a. The market system does not always produce what people want at the lowest possible cost.
- b. The market system offers rewards (income) that may be unfairly distributed, and some groups may be left out.
- c. Periods of unemployment and inflation recur with some regularity.
- d. All of the above.
- e. None of the above.

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- d. **All of the above.**
- e. None of the above.

Price Theory

In a free market system, the basic economic questions are answered without the help of a central government plan or directives. This is what the “free” in free market means—the system is left to operate on its own with no outside interference. Individuals pursuing their own self-interest will go into business and produce the products and services that people want. Other individuals will decide whether to acquire skills; whether to work; and whether to buy, sell, invest, or save the income that they earn. The basic coordinating mechanism is price.

Mixed Systems, Markets, and Governments

The differences between command economies and laissez-faire economies in their pure forms are enormous. In fact, these pure forms do not exist in the world; all real systems are in some sense “mixed.”

Looking Ahead

This chapter described the economic problem in broad terms. We outlined the questions that all economic systems must answer. We also discussed very broadly the two kinds of economic systems. In the next chapter, we analyze the way market systems work.

REVIEW TERMS AND CONCEPTS

absolute advantage	investment
capital	laissez-faire economy
command economy	marginal rate of transformation (MRT)
comparative advantage	market
consumer goods	opportunity cost
consumer sovereignty	outputs
economic growth	production
factors of production (<i>or</i> factors)	production possibility frontier (ppf)
free enterprise	theory of comparative advantage
inputs <i>or</i> resources	