chapter 1

First Principles

Chapter Objectives

Students will learn in this chapter:

- A set of basic principles for understanding the choices individuals make in the face of scarce resources. These principles are: (1) Resources are scarce. (2) The real cost of something is what you must give up to get it. (3) "How much?" is a decision at the margin. (4) People usually exploit opportunities to make themselves better off.
- A set of principles for understanding how individual choices interact. These principles are: (1) There are gains from trade. (2) Markets move toward equilibrium. (3) Resources should be used as efficiently as possible to achieve society's goals. (4) Markets usually lead to efficiency. (5) When markets don't achieve efficiency, government intervention can improve society's welfare.
- A set of principles for understanding economy-wide interactions. These principles are: (1) one person's spending is another person's income. (2) Overall spending sometimes gets out of line with the economy's productive capacity. (3) Government policies can change spending.

Chapter Outline

Opening Example: All economists use a set of common principles that apply to many different issues.

I. There are Twelve Basic Principles of Economics

II. Individual Choice: The Core of Economics

A. *Definition:* **Individual choice** is the decision by an individual of what to do, which necessarily involves a decision of what not to do.

B. Resources are scarce.

1. *Definition:* A **resource** is anything that can be used to produce something else.
2. *Definition:* Resources are **scarce**—the quantity available is not large enough to satisfy all productive uses.
3. Resources include land, labor, capital, and human capital.
4. Limited resources means society must make choices.

C. The real cost of something is what you must give up to get it.

1. *Definition:* The real cost of an item is its **opportunity cost:** what you must give up in order to get it.
2. Opportunity cost is not only monetary cost.

D. "How much?" is a decision at the margin.

1. Most decisions of interest to economists involve decisions at the margin. An example is, Should I spend one more hour studying economics or one more hour studying chemistry?
2. *Definition:* You make a **trade-off** when you compare the costs with the benefits of doing something.
3. *Definition:* Decisions about whether to do a bit more or a bit less of an activity are **marginal decisions.** The study of such decisions is known as **marginal analysis.**

E. People usually exploit opportunities to make themselves better off.

1. People will exploit opportunities until the opportunities are fully exhausted.
2. People respond to incentives. For example, if the salaries of MBAs rise, more students will go to business school.
3. *Definition:* An **incentive** is anything that offers a reward to people who change their behavior.
4. Economists are skeptical of attempts to change people's behavior that do not change their incentives.

III. Interaction: How Economies Work

A. *Definition:* **Interaction** of choices—my choice affects your choices, and vice versa—is a feature of most economic situations. The results of this interaction are often quite different from what the individuals intend.

B. There are gains from trade.

1. *Definition:* In a market economy, individuals engage in **trade**—they provide goods and services to others and receive goods and services in return.
2. *Definition:* There are **gains from trade**—people can get more of what they want through trade than they could if they tried to be self-sufficient. This increase in output is due to **specialization**—each person specializes in the task that he or she is good at performing.
   a. In *The Wealth of Nations,* Adam Smith wrote about the benefits of specialization.

C. Markets move toward equilibrium.

1. *Definition:* An economic situation is in **equilibrium** when no individual would be better off taking a different action.
2. The fact that markets move to equilibrium is why we can depend on markets to work in a predictable way.

D. Resources should be used as efficiently as possible to achieve society's goals.

1. *Definition:* An economy is **efficient** if it takes all opportunities to make some people better off without making others worse off.
2. When an economy is efficient, it is producing the maximum gains from trade possible, given the resources available.
3. There are trade-offs between using resources efficiently and attaining equity in the distribution of goods.
   a. *Definition:* **Equity** means that everyone gets his or her fair share. Because people can disagree about what's "fair," equity isn't as well-defined a concept as efficiency.

E. Markets usually lead to efficiency.
   1. The incentives built into a market economy ensure that resources are usually put to good use, that all opportunities to make everyone better off have been exploited.
   2. The economy as a whole benefits if each individual specializes in a task and trades with others.

F. When markets do not achieve efficiency, government intervention can improve society's welfare.
   1. Markets fail to achieve efficiency for three principal reasons.
      a. Individual actions have side effects (externalities) that are not properly taken into account.
      b. One party attempts to capture a greater share of resources for itself.
      c. Some goods by their very nature are unsuited for efficient management by markets.

IV. Economy-Wide Interactions

A. The economy as a whole has ups and downs.
   1. Economies experience recessions when business becomes depressed.
   2. To understand recessions, we need to understand economy-wide interactions.

B. One person's spending is another person's income.

C. Overall spending sometimes gets out of line with the economy's productive capacity.

D. Government policies can affect the macroeconomy.
   1. The government can change its own spending.
   2. The government can vary how much it collects from the public in taxes.
   3. The government can control the quantity of money in circulation.

Teaching Tips

Individual Choice: The Core of Economics

Creating Student Interest

Ask students to consider their choice to attend class today. Ask them, "What are the benefits of attending class?" (Answers will include learning, doing well in the course, improving their grade, socializing with classmates.) Then ask them, "What are the costs of attending class today?" (Answers will include tuition and other direct costs, and should also get into opportunity costs.)

Have students share their opportunity cost of attending class. The first answer will probably be sleep! Other common answers will include working (here you can illustrate how opportunity cost can have a dollar value). Make sure they also consider that they gave up taking another course scheduled at the same time.

Use the discussion of opportunity cost to discuss the opportunity cost of missing class. Use this discussion to emphasize the course syllabus. That is, point out what they gain from attending class (for example, are students graded based on attendance or in-class quizzes or activities? Do they receive homework assignments or other information in class? Will they receive information crucial to performing well on exams?). Highlight the opportunity cost of skipping class (for example, lost attendance or in-class activities points, missed information, missed assignments, poor performance on exams). Point out that you make sure that class attendance is valuable and therefore the opportunity cost of skipping class is high. You are applying economics in your course procedures! Note that they need to apply economics to their attendance decision. A class should be missed only in cases where missing class has a high opportunity cost (that is, when the benefits of missing class are high).

Presenting the Material

Emphasize that economics is the study of choices. The choices studied by economists include choices made by individuals, choices made in markets, and economy-wide choices. While money and supply and demand are a part of what economists study (these two topics are often what students who haven't studied economics associate with the discipline), economics deals more broadly with decision making (choices). Most people's first economics lesson comes the first time they are in a store and are told No when they tell their parents they want something. That's when they first learn that you can't have everything you want (resources are scarce). It can be a difficult lesson (as you can tell if you have ever witnessed a toddler's reaction in this situation!).

Economics is a *social* science. Ask the students to name other social sciences. You might have a building on campus or a curriculum requirement that can help them identify the social science disciplines. Ask students what social sciences have in common (answer: people). Discuss how economics is similar to the other social science disciplines and how it is different. Here you can bring up what economics has in common with the sciences and prepare students for the use of math (graphs) and models in the course.

Finally, be certain that students understand that economics is an approach to decision making, and not a list of items to be memorized. A quote from John Maynard Keynes can be helpful:

> The Theory of Economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking which helps its possessor to draw correct conclusions. (*From The General Theory of Employment, Interest, and Money*)

Interaction: How Economies Work

Creating Student Interest

Ask students when they think people began to trade and why. Use the discussion to highlight the concept of specialization. The discussion can be expanded to also address why countries trade.

Present the famous quote from *The Wealth of Nations* by Adam Smith: "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages."

Ask students to write down what they believe to be the meaning of the Adam Smith statement. You might want to collect what they write and use their more correct interpretations of the meaning to discuss the ideas of specialization and mutual gains from trade. You can also do this without collecting the writings. Discuss how markets can coordinate the activities of millions of individuals for their common benefit.

Presenting the Material

The five principles of market interaction will be explored more thoroughly in future chapters, but they can be introduced briefly at this point. The motivation for trade is that trade is mutually beneficial. Use yourself as an example: You teach economics; one of your students can fix computers. You each specialize and then trade: you teach economics to your student and the student fixes your computer. As a result, more economics is taught and more computers are fixed. The trade would not take place if both sides did not benefit.

Markets moving toward equilibrium is a rather abstract idea for students but give a concrete example: If a T-shirt vendor at a tourist attraction prices her shirts above the equilibrium, she will be left with unsold shirts. She will have to lower the price to sell off the excess inventory; hence, markets move to an equilibrium price.

The idea that resources "should" be used efficiently follows from the economic fact of scarcity. Because wants are unlimited and resources are scarce, it makes sense to use those resources efficiently. Efficiency is defined as making the most of the gains from trade given the limited resources society has. If everyone is made better off from a choice and no one is made worse off, then the trade is deemed efficient.

That markets usually lead to efficiency follows from built-in profit incentives—competitive markets pressure firms to use resources efficiently. For example, FedEx, under competitive pressure from UPS, invested $150 million to outfit drivers with handheld packaging devices. The result is they can cut 10 seconds from every delivery. This efficiency saves FedEx $20 million per year in total cost. (Source: "Behind Productivity: Service Sector Delivers" *Wall Street Journal,* November 7, 2003.)

Ask students to think of possible "market failures" and often they will mention monopoly and environmental damage. Additionally, you can add cases of asymmetric information.

Economy-Wide Interactions

Creating Student Interest

Ask students how they think the U.S. economy is doing right now. Identify on what they base their perceptions that the economy is doing well or poorly. They may base their opinions on the opinions of experts, what is reported by the media, economic data (for example, unemployment rates, inflation rates, economic growth, gas prices), or their own gut instincts.

Presenting the Material

Discuss the business cycle, and that the economy goes through ups and downs (expansions and recessions) and what some of the signs of these ups and downs are. You can include recent economic data (for example, unemployment rates) from the websites listed below. Note that these data will be studied in detail as the core of a macroeconomics course. Present some current information (unemployment rate, inflation rate, GDP growth rate) and discuss what it indicates about the current state of the economy. Discuss the importance of consumer spending in determining the level of economic activity. Also discuss the fact that government policies (fiscal policy) can change spending.

Common Student Pitfalls

- **Understanding what the economics discipline is about.** Student often think that economics is about money and that an economics course will teach them how to make money. Point out that economics is about choices, and while some choices involve money and monetary values, many choices (like whether to attend class or sleep in) do not.

- **Accepting that resources are scarce and/or that wants are unlimited.** Some students have trouble with the ideas that resources are scarce (especially given the affluence of the U.S. economy) and that wants are unlimited. For both of these ideas, use *time* as an example. Time is always limited and while a person may not want more goods, they would certainly like to have more time (for instance, to spend with friends and family or devote to a favorite cause).
- **Thinking on the margin.** Marginal analysis can be difficult for students. Give concrete examples of making decisions at the margin. For example, present the example of a group of students ordering pizza. Introduce the idea (though not by name) of diminishing returns by asking them what happens to the enjoyment they receive from each successive slice of pizza. Then explain that one large pizza is $15 and the pizza parlor is running a buy one, get the second one half price special. Three or more pizzas are $10 each. Use this information to determine the marginal cost of the first and second pizzas and explain how they could use a table to organize the information and determine how many pizzas to buy.
- **The meaning of efficiency.** Efficiency is an important and recurring concept in economics. It is important that students have a solid understanding of efficiency, both because it is a central economic concept and because it is used in slightly different ways in different economic models they will encounter. Prepare students for the fact that, though they will see *efficiency* used in slightly different ways, the general concept is always the same. Efficiency, in general, is the idea of "no waste." Efficiency is achieved when opportunities to make anyone better off have been fully exploited. No one can be made better off without making someone worse off. For example, a box of donuts is distributed efficiently if each of the donuts is eaten. However, if 11 donuts are eaten and one is left in the box, then the donuts were not distributed efficiently—one was wasted. Someone could have been made better off (by getting to eat a donut) without taking a donut away from anyone else.
- **Equilibrium in economics.** The concept of equilibrium is similar to efficiency in that students will see it used in different ways in different models. Make sure that they learn the concept of equilibrium in general, and know that it will be applied in different models throughout the course. Equilibrium is not a strictly economic concept. Have students remember different equilibriums they have come across in other disciplines—or simply ask them what it means to lose your equilibrium. Equilibrium means balance, opposing forces are equal, or there is no tendency for change.

Case Studies in the Text

Economics in Action

A Woman's Work—This EIA discusses the increased use of home appliances in the first half of the twentieth century and how it affected women's opportunity costs and the choice to work inside or outside the home.

Ask students the following questions:

1. How has women's participation in the labor force changed in the twentieth century? (33.9% were in the labor force in 1950 and 60.2% were in the labor force in 2000. Source: *The Economics of Women, Men and Work,* by Francine Blau, Marianne Ferber, and Anne Winkler. Saddle Brook, NJ: Prentice Hall, 2002)

2. What economic concept helps to explain the change in women's labor force participation? (opportunity cost)

Restoring Equilibrium on the Freeways—This EIA explains how bridge collapses in the aftermath of a California earthquake affected individuals' commuting decisions (and the interdependence of commuters' decisions).

Ask students the following questions:

1. Why did predicted traffic jams not occur in the immediate aftermath of the earthquake, and why did it then get steadily worse? (Initially, people heeded warnings that traffic would be bad and used alternative transportation. Then, when traffic was not so bad because of the use of alternative transportation, they began to drive again, making traffic steadily worse.)
2. How did the traffic situation reach a new equilibrium? (After several weeks, drivers were able to evaluate their individual choices and make their best decision given what other people were choosing.)

Adventures in Babysitting—This EIA explains the creation of a babysitting co-op, where parents exchange babysitting tickets for babysitting services. Babysitting tickets are earned by babysitting someone else's children. The EIA explains that the example babysitting co-op experienced a recession when parents became reluctant to spend their tickets.

Ask students the following questions:

1. How does a babysitting co-operative benefit parents? (They are able to make themselves better off by gaining access to babysitting services by providing babysitting services.)
2. What situation in the babysitting co-op was analogous to a recession and why did it occur? (Too few babysitting tickets were available because parents kept babysitting tickets in reserve—they hesitated to spend them.)

For Inquiring Minds

Got a Penny—this FIM evaluates the costs and benefits of using pennies and presents the possibility that the costs of using pennies outweigh the benefits.

Pay for Grades?—this FIM discusses the use of cash payments as an incentive for Florida students to do well on state exams.

Choosing Sides—this FIM looks at the laws and conventions in a country regarding which side of the road/sidewalk people drive/walk on. The "rules of the road" are discussed in terms of creating an equilibrium that makes everyone better off.

Activities

A Woman's Work (5–10 minutes)

Pair students and ask them which of the principles of individual economic choice are illustrated in the following:

- The improvement of home production technology (washers, dryers, microwave ovens, etc.) (The opportunity cost of working was reduced because it took less time to complete household chores.)
- Women's wages rose over this period. (Women took advantage of the opportunity to earn more at paid work.)

- The prices of homes rose more rapidly than wages, making it more difficult for a single earner family to purchase a home. (The opportunity cost for women to be out of the labor force rose, and so people face trade-offs.)

Book tip: Ann Crittenden's *The Price of Motherhood* (New York: Metropolitan Books, 2001) has a good description of the opportunity costs and benefits of deciding to stay home and raise a child rather than working for pay.

Making Choices (5–10 minutes)

Ask students to identify which of the first four principles of individual economic choice is illustrated in each statement below.

- Because of the higher gasoline prices in Europe, people drive smaller cars there than in the United States. (People take advantages of opportunities to make themselves better off.)
- You are weighing the advantage of working more hours this month. (You make decisions at the margin, because resources are scarce.)
- Mothers of young children must weigh returning to paid work or remaining home to be with their child. (People face trade-offs.)
- You decide that four classes are enough for this semester and decide against the fifth class. (You make a decision at the margin.)

Difficult Choices (10–20 minutes)

Form students into pairs or teams, then present one of the following **scarcity scenarios.**

- A society that has 500 children is threatened by a disease that strikes only children. A pharmaceutical company (owned by stockholders) has manufactured a pill that reduces the chances of getting the disease from 90% to only 10%. The company is only able to produce 500 pills at the present time. If parents can get more than one pill it reduces the chance of their child dying. How do you allocate the pills? How do we as a society preserve incentives for the pharmaceutical firm to take risks and come up with more and/or a better medicine? This illustrates the issue of scarcity and the tension between equity (making sure that all children get the antidote) and efficiency (encouraging profit-oriented pharmaceutical firms to innovate).
- Many issues in medicine illustrate scarcity and economic choices. For example, a liver transplant costs $200,000. Should everyone who has liver disease get the transplant regardless of his or her ability to pay? If everyone cannot get one, should a very old patient or a young patient get the transplant? As a second example, we now have the technology to save premature babies who are below 1,000 grams in weight—despite a high probability that these children will be handicapped. Should we use society's scarce medical resources to save them? These issues illustrate tough economic choices involving health care.
- One of the most immediate economic choices for many college students is how many hours per week to work for pay and how many hours to spend studying and attending classes. Pair students and ask them what factors influence their choices. How do the ideas of opportunity cost and making decisions at the margin influence their choices?

Web Resources

The following websites provide data related to the current state of the economy.

Data for unemployment rates in local areas can be found on the Bureau of Labor Statistics (BLS) website. http://www.bls.gov/lau/

The BLS Consumer Price Index web page provides data for inflation rates.
http://www.bls.gov/cpi/

The Bureau of Economic Analysis provides data for GDP growth rates.
http://www.bea.gov/index.htm

The following BLS website contains labor force participation data for men and women from 1975–2008. http://www.bls.gov/opub/working/page3b.htm