



## Getting Started

# Chapter 1

### CHAPTER OUTLINE

**1. Define economics and explain the kinds of questions that economists try to answer.**

- A. Scarcity
- B. Economics Defined
  - 1. Microeconomics
  - 2. Macroeconomics
- C. What, How, and For Whom?
  - 1. What?
  - 2. How?
  - 3. For Whom?
- D. Can the Pursuit of Self-Interest Be in the Social Interest?
  - 1. Self-Interest and the Social Interest
  - 2. Globalization
  - 3. The “Information Age”
  - 4. Climate Change
  - 5. Government Budget Deficit and Debt

**2. Explain the ideas that define the economic way of thinking.**

- A. Economic Ideas
- B. A Choice Is a Tradeoff
- C. Cost: What You *Must* Give Up
- C. Benefit: What You Gain
- D. Rational Choice
- E. How Much? Choosing at the Margin
  - 1. Marginal Cost
  - 2. Marginal Benefit
  - 3. Making a Rational Choice
- F. Choices Respond to Incentives
- G. Economics as Social Science
  - 1. Economic Models
  - 2. Check Models Against Facts
  - 3. Disagreement: Normative versus Positive
- I. Economics as Policy Tool

1. Personal Economic Policy
2. Business Economic Policy
3. Government Economic Policy

## CHAPTER ROADMAP

### ■ What's New in this Edition?

The chapter has been slightly revised from the previous edition. “Can the Pursuit of Self-Interest Be in the Social Interest?” has been renamed and now includes an introduction to Adam Smith and the invisible hand. “Government Budget Deficits and Debt” is a renamed subheading. The six Economic Ideas have been reorganized and the section on Rational Choice has been significantly rewritten. Several other sections have been slightly rewritten and updated, but there are no major content changes.

### ■ Where We Are

In Chapter 1, we review definitions and address questions that economics helps answer. We also discuss how people make rational choices and preview the fact that these are the choices that individuals and firms make everyday.

### ■ Where We're Going

After laying out the basic ideas of economics in this chapter, and some basic facts about the economy in the next, in Chapter 3 we'll start building tools and models that help us understand how the economy works. These tools and models, such as the production possibilities frontier and the demand and supply framework, provide valuable insight into how the economy that we operate in each day works.

## IN THE CLASSROOM

### ■ Class Time Needed

You can complete this chapter in one session. As simple as the ideas might seem to you, covering the definitions and questions are important to your students, especially in the context of current events and topics. Thus do not shortchange this chapter.

An estimate of the time per checkpoint is:

- 1.1 Definitions and Questions—15 to 20 minutes
- 1.2 The Economic Way of Thinking—25 to 30 minutes

**Classroom Activity:** For the first week, have the students bring to class newspaper headlines that deal with stories about what goods and services are produced, how goods and services are produced, and for whom the goods and services are produced. When they bring their headlines to class, use the headlines to grab the students' attention and raise a sense of excitement about learning this subject. Point out to them they will gain real insights into topics such as those in the headlines when they've completed their course.

**Classroom Activity:** Help the students to appreciate the power of models as tools for understanding reality. The analogy of a model as a map is easy and convincing. Jim Peach, a fine economics teacher at the University of New Mexico, gets his students to make paper airplanes on the first day of class. After flying their paper planes around the classroom (and picking up the debris!) he gets them to talk about what they can learn about real airplanes from experimenting with paper (and other model) planes.

**Classroom Activity:** You also can help your students appreciate that no matter how appealing or "realistic looking" a model appears to be, it is useless if it fails to predict. And the converse, no matter how abstract or far removed from reality a model appears to be, if it predicts well, it is valuable. Milton Friedman's pool hall example illustrates the point nicely: Imagine a physicist's model that predicts where a carefully placed shot of a pool shark would go as he tries to sink the eight ball into the corner pocket. The model would be a complex, trigonometric equation involving tangents, cosines and a plethora of Greek symbols that no ordinary person would even recognize as representing a pool shot. It wouldn't depict what we see—a pool stick striking a pool cue on a rectangular patch of green felt. It wouldn't even reflect the thought processes of the pool shark, who relies on years of experience and the right "touch." But constructed correctly, this mathematical model would predict exactly where the cue ball would strike the eight ball, hit opposite the bank, and fall into the corner pocket. (You can invent analogous examples from any sport.)

## CHAPTER LECTURE

### ■ 1.1 Definition and Questions

#### Scarcity

- Economic questions arise because we always want more than we can get, so we face **scarcity**, the inability to satisfy all our wants. Everyone faces scarcity because no one can satisfy *all* of his or her wants.

*Forbes* lists Bill Gates and Warren Buffet as the two wealthiest Americans. Do these two men face scarcity? According to *The Wall Street Journal*, both men are ardent bridge players, yet they have never won one of the many national bridge tournaments they have entered as a team. These two men can easily afford the best bridge coaches in the world, but other duties keep them from practicing as much as they would need to in order to win. So even the wealthiest two Americans face scarcity (of time) and must choose how to spend their time.

#### Economics Defined

- **Economics** is the social science that studies the choices that individuals, businesses, governments and entire societies make when they cope with scarcity, the incentives that influence those choices, and the arrangements that coordinate them.
  - **Microeconomics** is the study of the choices that individuals and businesses make and the way these choices interact and are influenced by governments.
  - **Macroeconomics** is the study of the aggregate (total) effects on the national economy and the global economy of the choices that individuals, businesses, and governments make.

**Lecture Launcher:** Students might not fully appreciate that economics is truly a science. They believe that economists are often incorrect in their predictions and assessments of the economy. Here is an opportunity for you to demonstrate humility and also show them (albeit charitably) the error in their conclusion. First, it is important to state honestly that many economists who have made forecasts have not only been wrong but sometimes spectacularly wrong. However, point out that being wrong doesn't make their work unscientific. Remind the students that all science is constantly evolving. For instance, it was only five centuries ago that scientists believed the earth to be flat! No one claimed that these scientists were engaged in unscientific methods. Instead, when theories no longer fit the facts, they must either be reformulated or discarded in favor of new ones.

**Lecture Launcher:** Maggy Shannon, who teaches at Gordon College in Georgia, tells her class a story from when she was an undergraduate: She telephoned her mother and in the course of her conversation, mentioned that "Dr. Thomas" had said she might have mono. Her mother was horrified, and didn't calm down until she had managed to explain that Dr. Thomas was an anthropologist. The point is that some opinions carry more weight than others. And, what the students are preparing to learn is the "opinions" of economists—positive models—about how the economy works.

**Lecture Launcher:** To help students identify that economists often don't make one definitive prediction about the future, but instead offer likely possible scenarios based upon the best available data, I always find it useful to quote President Harry S. Truman. Truman was actually quite fond of using economic advisors to help formulate policy, though he quickly recognized how economists liked to hedge their bets by offering a prediction and then the disclaimer, "but, on the other hand..." to account for other possible outcomes. An exasperated Truman famously proclaimed "Give me a one-armed economist!". It is important to point out that economic forecasting is remarkably similar to weather forecasting – it is a scientific process based upon the best available data and models, but will always be subject to a margin of error.

### What, How, and For Whom?

- **Goods and services** are the objects (goods) and actions (services) that people value and produce to satisfy human wants.
- Societies must answer three very basic questions:
  - *What?*: What determines the quantities of the goods and services produced?
  - *How?*: How are goods and services produced?
  - *For Whom?*: For whom are goods and services produced?

### Can the Pursuit of Self-Interest Be in the Social Interest?

- People make choices they think are best for them, that is, choices in their **self-interest**.
- Choices that are the best for society as a whole are said to be in the **social interest**.
- A major question economists explore is "Could it be possible that when each of us makes choices in our self-interest, these choices are in the social interest?"

Students (and others!) often take the answers to the what, how, and for whom questions for granted. For instance, most of the time we do not bother to wonder "How does our economy determine how many light bulbs, automobiles, and pizzas to produce?" (*what*), or "Why does harvesting wheat from a plot of land in India occur with hundreds of laborers toiling with oxen pulling threshing machines, while in the United States, a single farmer listening to George Strait on an iPod and sitting in an air-conditioned cab of a \$500,000 machine harvests the same quantity of wheat from the same sized plot of land?" (*how*), or "Why is the annual income of an inspiring and effective grade school teacher much less than that of a below-average major-league baseball player?" (*for whom*). Explaining the answers to these types of questions and determining whether the answers are in the social interest is a major part of microeconomics.

- We can examine whether the self-interested choices serve the social interest for a variety of topics:
  - *Globalization*: The acceleration of economic growth in the last two decades has made economic decision-making more complex as multinational concerns must be taken into account. Rational business decisions which bring a wider variety of lower-price choice to consumers may have negative side-effects on some producers.
  - *The "information age"*: The Information Revolution, an economic restructuring comparable to the Agricultural Revolution and the Industrial Revolution, has brought about

new questions of social interest. Was the development of computers and of the Windows operating system by Microsoft in the social interest?

- *Climate change*: Climatologists agree that global warming is at least in part the result of economic activity. The warming may lead to large economic costs. How can individuals and nations satisfy their self-interested desire for goods and services while also protecting the social-interest of the environment?
- *Government Budget Deficit and Debt*: The U.S. government has been running a budget deficit every year since 2001. In approximately 2020 the deficit will come under increasing pressure because in that year payments for retirement and health-care entitlements will exceed tax revenue for those programs. Do our self-interested choices as voters conflict with the social interest? Do choices made by politicians and bureaucrats promote the social interest or only their self-interests?

## ■ 1.2 The Economic Way of Thinking

### Economic Ideas

- Six core ideas describe the economic way of thinking:
  - A choice is a *tradeoff*.
  - Cost is what *must be given up* to get something.
  - *Benefit* is what you gain from something.
  - People make *rational choices* by comparing costs and benefits.
  - Most choices are “*how much*” choices made at the *margin*.
  - Choices respond to *incentives*.

### A Choice Is a Tradeoff

- Because we face scarcity, we must make choices and select from the available alternatives. A **tradeoff** is an exchange – giving up one thing to get something else.

### Cost: What You Must Give Up

- The **opportunity cost** of something is the best thing you must give up to get it.
- Choices have an opportunity costs; for example, the opportunity cost of attending college include goods and services forgone from paying for tuition and textbooks, and the goods and services forgone because the student does not have the income from a full-time job.

### Benefit: What You Gain

- The **benefit** of something is the gain or pleasure it brings and is determined by personal *preferences* – by what a person likes and dislikes and the intensity of those feelings. Economists measure the benefit of something by what a person is willing to give up to get it.

### Rational Choice

- A **rational choice** is one that uses the available resources to most effectively satisfy the wants of the person making the choice. Rational choices compare costs and benefits in order to maximize net benefit. Choices are made on the margin and respond to incentives. Some choices are *all-or-nothing* choices between two things, while most choices involve *how much* of an activity to do.

To ensure that people do not die of any serious side effects, the Food and Drug Administration (FDA) requires all drug companies to thoroughly test newly developed medicines before allowing them to be sold in the United States. However, it takes many years to perform these tests, and many people suffering from the terminal diseases these new medicines are designed to cure will die before good new medicines are eventually approved for use. Yet, if the FDA were to abandon this testing process, many others would die from the serious side effects of bad medicines that made it to market. People's lives will be at risk under either policy alternative. This stark example of a tradeoff reveals the idea that choices have opportunity costs.

### How Much? Choosing at the Margin

- Making choices at the **margin** means comparing all the relevant alternatives systematically and incrementally.
- People make choices at the margin by comparing the benefit from a one-unit change in an activity (which is the **marginal benefit**) to the cost of making a one-unit change in an activity (which is the **marginal cost**).
- If the marginal benefit of an action exceeds the marginal cost of the action, then the **rational** choice is to take the action.

Should Jim give up watching the Super Bowl game to take out his girlfriend Amy on her birthday? Jim will make his choice at the margin. Jim's marginal benefit is that his relationship with Amy strengthens as they share a romantic birthday celebration together. His marginal cost is that he will miss watching the NFL championship game. If the marginal benefit of the dinner exceeds the marginal cost, then Jim will choose to take his girlfriend out on her birthday. If the marginal benefit is less than the marginal cost, then Jim will watch the Super Bowl (and might quickly find himself single!).

### Choices Respond to Incentives

- An **incentive** is a reward that encourages an action or a penalty that discourages an action.
- Changes in marginal benefits and marginal costs alter the incentives that we face when making choices. When incentives change, people's decisions change. For example, if homework assignments are weighed more heavily in a class's final grade, the marginal benefit of completing homework assignments has increased and more students will do the homework.

### Economics as Social Science

- Economists try to understand and predict the effects of economic forces by using the *scientific method* – a commonsense way of systematically checking what works and what doesn't work.
  - An economist begins with a question or a puzzle about cause and effect arising from some observed facts.

- An economist's second step is to build an **economic model**, a description of some feature of the economic world that includes only those features assumed necessary to explain the observed facts.
- The third step is to check the economic model against the facts by using:
  - A natural experiment: a situation that arises in the ordinary course of economic life in which the one factor of interest is different and other things are equal (or similar).
  - A statistical investigation: looking for a **correlation** – a tendency for the values of two variables to move together in a predictable and related way.
  - An economic experiment: puts people in a decision-making situation and varies the influence of one factor at a time to discover how they respond.
- Economists sometimes disagree about assumptions, models, and policies. Disagreements that can't be settled by facts are *normative statements*, statements about "what ought to be," which are opinions and so are inherently not testable. Disagreements that can be settled by facts are *positive statements*, statements about "what is" and are testable. A positive statement is "Raising the tax on a gallon of gasoline will raise the price of gasoline and lead more people to buy smaller cars" while a normative statement is "The tax on gasoline should be raised."

❑ **Land Mine:** Students sometimes have difficulty sorting out economic facts from economic opinions. One way to cure this problem is to have them cut out articles from a newspaper (possibly U.S.A. Today, The Wall Street Journal, or the New York Times) or copy sections of articles from reliable sources from the Internet. Ask the students to label the headlines as either positive or normative economic statements. Make sure to tell them that one way of distinguishing the headlines is by asking themselves whether the statements represent testable propositions. If the headlines do not, then they are normative statements (that is, value judgments). Explain that some of the common buzzwords that are tip-offs to a normative statement are: should, must, or ought.

Another problem that students have is with positive statements that are incorrect. Explain that the veracity of an economic statement is not the litmus test of whether an assertion is a positive statement or not. The litmus test is the testability! Of course, if the statement is incorrect, likely the person making the statement ought to change it! Indeed, one of the biggest problems recently is untangling opinions from prejudices. Opinions are founded in information, and can change as new information is acquired. Thus, after learning the information in Chapter One, a student's answers to the Critical Thinking exercises should demonstrate that the student has learned Chapter One and incorporates this new information into his or her analysis of the questions posed. All too frequently, however, students seem to think that all opinions are created equal, that is, that no opinion can be



counted wrong. Point out that while it is not possible to prove that a normative statement is wrong, nonetheless they should be based on positive results.

❑ **Land Mine: Correlation** is a tendency for the values of two variables to move together (either in the same direction or in opposite directions) in a predictable and related way. Correlation versus causation is an issue of logic that can represent a real challenge to students' intuition. There is a natural human tendency to conclude that when two variables move together, or against one another, that there is causation. Point out that there is a difference between correlation and causation. Suppose economists found that there is a positive correlation between the level of education and worker health. We might conclude that the increase in education is the cause of the better health. But perhaps the higher income that workers enjoy as the result of their higher education allows them to purchase more health care. Or it could be that there are other intervening variables at work. Perhaps education and health move together because of characteristics that the two have in common. That is, it might be possible that talent, motivation, and work ethic, which help many people enjoy good health, are the same characteristics that help the same people earn a higher income.

### **Economics As Policy Tool**

- Economics is a tool which helps us make an endless array of decisions.
- Personal Economic Policy involves decisions about an individual's need for shelter, transportation, and time management.
- Business Economic Policy involves decisions made at the margin to accomplish a business's goals such as increasing sales, opening a new branch, or gaining market share.
- Government Economic Policy is perhaps the most controversial of the three types of economic policy. How should goals such as better education, military preparedness, and safe food be balanced against limited tax revenue and the desire of individual members of government to be reelected?

## USING EYE ON THE PAST

### ■ Adam Smith and the Birth of Economics as a Social Science

Adam Smith used the example of pin making in his opus, *The Wealth of Nations*, to explain an elementary but profound point. It was an example to which people of his time could easily relate. Before introducing Smith's work, you might want to consider asking students how productive one worker could be if he or she were the only one on duty at a local McDonald's restaurant at noon time. The likely response is not very productive. The person would have to cook the burgers, fry the French fries, prepare the drinks, ring up the orders, and clean the dining area. Students will not find it difficult to accept that few customers will be served at this restaurant under these conditions! Next, ask how productivity would change if a second worker were asked to help out at this same restaurant and at the same time. Students will answer that the restaurant will be able to serve more customers. You can point out the gains from division of labor and specialization that are likely to be enjoyed by hiring the second worker. Explain that we owe this simple logic to the founding father of modern day economics, Adam Smith.

## USING EYE ON THE BENEFIT AND COST OF SCHOOL

### ■ Did You Make the Right Decision?

In order to help students get settled into the classroom, learn a few names, get engaged in the material, and reevaluate the purpose of taking the course, it can be useful to get into a small group activity that goes through this "Eye On" on the first day. While the explicit opportunity costs (tuition, fees, books, materials, etc) might be easier for students to quantify, you can help students quantify the implicit opportunity costs as well (foregone earnings or the value of their leisure time). If the students wouldn't be working, then assigning a dollar value for the implicit cost is a bit more challenging, but not impossible...after all, leisure time is not "priceless" as many people will initially assume. Ask them what hourly wage they would require to get them to give up an hour of their leisure time – that is the value of an hour's worth of leisure to them. Depending on the institution at which you teach, the implicit cost associated with your students' higher education may far exceed the explicit cost. As for the benefits outlined in the "Eye On," you may also want to suggest they estimate the value to them of a possible job with more desirable non-wage characteristics, having more knowledge, and being a more informed decision maker and voter. Hopefully your students end up with a cost-benefit comparison that tells them they are making a rational choice, or you may not see them again!

**ADDITIONAL EXERCISES FOR ASSIGNMENT****■ Questions****■ Checkpoint 1.1 Definitions and Questions**

1. Imagine a situation in which there is a device that can help improve productivity in any enterprise by as much as one thousand times. Assume that this device could be operated by anyone. Would this device eliminate scarcity?

**■ Checkpoint 1.2 The Economic Way of Thinking**

2. Assume your neighbor is a doctor. He complains bitterly about the overtime that he is putting in at the hospital each weekend. While the overtime is not required, he argues that by not taking it he would be sacrificing \$1,000 each weekend. If he were to ask for your opinion about what to do, what would you advise him?
3. Survey your classmates (or, a selected group of your classmates) regarding the opportunity cost of attending class. If you get different answers (which you will!), explain how these differences affect choices.

**■ Answers****■ Checkpoint 1.1 Definitions and Questions**

1. Scarcity is not eliminated by this device. Scarcity is the inability of the available resources to satisfy all of everyone's wants. The ability of each of us to satisfy our wants is limited by time and by the incomes we earn and the prices we pay for the things we buy. The device would expand the amount of goods and services available but it would not constrain our wants.

**■ Checkpoint 1.2 The Economic Way of Thinking**

2. You can advise your neighbor that the \$1,000 each weekend that he would give up by not working is not his only opportunity cost. When he works he also incurs opportunity costs. For instance, by working he is giving up time he could be spending with his family.
3. You will get a variety of answers. This fact shows that everyone faces different opportunity costs and, people make different choices. Students for whom the opportunity cost is too high simply were not present to participate in your survey! And, even though people have different opportunity costs, their choices remain rational.

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