**Chapter 1 – The Role and Method of Economics**

**Use the Section Summaries to preview the chapter's content.**

Section Summaries

The following section summaries appear on the Student Review Cards.

**1-1 – Economics: A Brief Introduction**

Economics is the study of the choices we make among our many wants and desires given our limited resources. Scarcity forces us to choose, and choices are costly because we must give up other opportunities that we value—this is the economic problem. Our scarce resources can be grouped into four categories: labor, land, capital, and entrepreneurship. Entrepreneurship is the process of combining labor, land, and capital to produce goods and services. Goods are tangible items that we value or desire, and services are intangible acts for which people are willing to pay. Everyone faces scarcity, and it cannot be eliminated.

**1-2 – Economic Behavior**

Economists assume that individuals act as if they are motivated by self-interest and respond in predictable ways to changing circumstances. Self-interest to an economist is not a narrow monetary self-interest. A person acting in self-interest might pursue personal gain, but that does not necessarily exclude helping others. Rational behavior merely means that people do the best they can, based on their values and information, under current and anticipated future circumstances. Because most people seek opportunities that make them better off, we can predict what will happen when incentives are changed.

**1-3 – Markets**

A market is the process of buyers and sellers exchanging goods and services. In most countries, resources are allocated through a market economy. Efficiency is achieved when the economy gets the most out of its scarce resources. Voluntary exchange and the price system guide people’s choices and help determine what goods are produced and how they’re produced. Market failure occurs when the economy fails to allocate resources efficiently on its own. We use a circular flow model to illustrate the flow of goods and services. Households and firms interact with each other in product markets (where households buy and firms sell) and factor markets (where households sell and firms buy).

**1-4 – Economic Theory**

A theory is an established explanation that accounts for known facts or phenomena. Specifically, economic theories are statements or propositions about patterns of human behavior that occur expectedly under certain circumstances. Theories use abstraction to weed out relevant from irrelevant information. A theory begins with a hypothesis, which is tested through empirical analysis. If the data collected supports the hypothesis, it can be tentatively accepted as an economic theory.

Conventionally, we distinguish two main branches of economics: microeconomics, which deals with smaller units in the economy, and macroeconomics, which deals with the aggregate or total economy.

**1-5 – Pitfalls to Avoid in Scientific Thinking**

The two major pitfalls to avoid are confusing correlation with causation and the fallacy of composition. The fact that two events usually occur together (correlation) does not necessarily mean that the one caused the other to occur (causation). The fallacy of composition tells us that if a thing is true for an individual, it is not necessarily true on a group level.

**1-6 – Positive and Normative Economics**

Positive analysis deals with factual statements trying to explain the world. Normative analysis deals with value judgments trying to improve the world. An important distinction is that positive statements can be tested but normative statements cannot.

**1-7 – Why Study Economics?**

Perhaps the best reason for studying economics is that so many of the things of concern in the world around us are at least partly economic in character. The study of economics provides a systematic, disciplined way of thinking.

**APPENDIX: Working with Graphs**

Sometimes the use of visual aids, such as graphs, greatly enhances our understanding of a theory. This textbook will use graphs throughout to enhance the understanding of important economic relationships. This appendix provides a guide on how to read and create your own graphs.

**Use the Teaching Tips to plan what key concepts you wish to emphasize.**

Teaching Tips

You can also find selected teaching tips located on your Chapter 1 Instructor Prep Card.

* It is crucial to clearly discuss the basic paradigm that underlies all that we do in economics. Show what we mean by scarcity; how scarcity implies the necessity of making choices; how choices imply the bearing of opportunity costs; and how, when combined with the assumption of self-interest, that results in the Rule of Rational Choice: whatever the choice or action, do “it” if and only if *E*(*MB*) > *E*(*MC*). This, in turn, when continued as long as that inequality holds, becomes the basic intuition leading to what economists define as equilibrium (there is no incentive to change your behavior, absent a change in incentives). When this is clear, it can become the focus for student retention (e.g., how is this technique or diagram an application of the rule of rational choice), and there is almost no end to the examples and illustrations that can be made to show students the applicability of the economic way of thinking.
* A useful way to integrate student understanding of how value is created and the crucial role of entrepreneurship in the process is to show students that all forms of creating value involve one or more of the following: Resources are being moved from less to more valuable forms (what we typically thing of as production does not create matter; it simply rearranges it); from less to more valuable locations (the value created in transportation); from less to more valuable time periods (the value created in speculation); or from lower valuing to higher valuing uses and/or users (the value created in exchange). In each case, there is a large aspect of entrepreneurship in trying to discover higher valued forms, locations, and times and higher valuing users than others have discovered. Further, this reinforces the fact that the incentives facing entrepreneurs are crucial to the value creating process.
* A good way to illustrate entrepreneurship to students is to discuss in class how each of them is an entrepreneur when it comes to discovering the best way to “produce” higher grades in the course. Different people learn better in different ways, handle pressure differently, have different attitudes toward the risk of getting a lower grade if they do less well than expected, different time constraints, etc. Further, not all courses are the same, and what works well in one course (e.g., memorization of terms) may not work well in another (e.g., one requiring application). Should you always go to class? Is it more effective to read before class, after class, or not at all? Should you use a study guide? Should you study in groups? All these questions are entrepreneurial in nature.
* A good way to get students thinking about scarcity is to ask them what is scarce when one decides to go on a diet. We usually think of food as being scarce, yet in this case, it is healthier food (with fewer calories rather than more) and self-restraint in eating that are scarce.
* You can show students that the prototypical “Ugly American,” who complains that “they don’t do it like back home” when they travel, is someone who fails to recognize that there isn’t a single right way (the way you are used to) to do something, but rather that the best way to do things changes in different circumstances due to different relative scarcities. For example, you don’t see nearly as many large cars where gasoline is far more expensive, streets are narrower, and parking is much more difficult.
* A useful illustration of self-interest is to ask what kind of nails a steelmaker would likely make if it were rewarded on the basis of the weight of nails produced (railroad spikes, because it is less costly to produce a given weight of nails that way) and contrast that result to what it would likely make if it were rewarded on the basis of the number of nails made (pins, because it is less costly to produce a given number of pins than of larger nails). Those results can then be compared to what would happen if the steelmaker were rewarded by being allowed to keep any profits. (It would make those products it thought people valued at more than the cost of production, which depends on what people value in their current circumstances.)
* Students sometimes struggle with economics’ self-interest assumption because they often consider themselves to be acting altruistically. Point out to students that the belief that they are more altruistic than they really are is consistent with self-interest (we want to think well of ourselves), and then ask them whether they think self-interest or altruism is a more reliable way to get others to coordinate behavior in a society.
* The connection between economics and other social sciences can be illustrated by behavior modification in psychology. Behavior modification can be shown to be an application of the rule of rational choice, where you raise the marginal benefit or lower the marginal cost of behavior you want to encourage (like a market subsidy) and lower the marginal benefit or raise the marginal cost of behavior you want to discourage (like a market tax).
* It is worth emphasizing that economic principles allow economists to know better what not to do than what to do. We can identify choices that would do poorly in achieving intended goals, but we don’t know what course of action will be the best possible in a complex world of uncertainty.
* You can illustrate the role of incentives by discussing with your class whether you should reward marginal exam improvement by giving higher grades to the students who improve the most from their first exam results to the final. There are conflicting incentives facing students here. There are great incentives to improve (you don’t stop studying because you think you will get a C no matter what you do on the final), but such a grading system would also give students incentives to do terribly on the first test, so that they could improve more.
* A good analogy to the importance of the price mechanism as a form of communication is travel to a foreign country where one does not speak the language of the country. Ask if any of the students have ever traveled in a country where they did not speak the language. Ask one of those who have how well they found out what they wanted to know and how well they did at achieving their objectives as a result. For most, the honest answer is “not so well.” For those who insist they did just fine, ask them how often it was because foreigners knew English, and how often it was because prices were clearly indicated in those countries.
* Because most students have heard that market systems built on private property rights are based on the selfishness of people, it is often interesting to ask students whether market systems are based on people’s selfishness or on protecting people from others’ selfishness. They will tend to answer “selfishness.” Then you can show that property rights, while they do allow you to do “selfish” things with your own property, also prevent others from selfishly using or abusing your property without your consent or without paying sufficient compensation to acquire your consent. Given that each of us is vastly outnumbered by “others,” property rights’ protections against others’ selfishness may well be its most important function.
* The circular flow model is primarily designed to remind students that in the economy as a whole, “everything depends on everything else.” As a result, if you wish, you could use a more developed circular flow model to trace the many effects of a given change in one market on others, as well as identify some of the changes in other markets that would have an impact on any particular market.
* As an example of the approach used in economic theorizing and modeling, ask students whether an airplane model needs to have wings and seats. Typically some will say both and others will say only wings are necessary. Then ask what difference it makes whether the model is intended to train stewardesses in their jobs or to investigate its aerodynamics. They will quickly see that the right sort of model will reflect its intended use; abstracting from those aspects that are unimportant to the question at hand to better focus on the important considerations you want to investigate.
* A useful illustration of how models come to be accepted in science is the replacement of the Ptolemaic geocentric model of the solar system (everything revolves around the earth) with the Copernican heliocentric model of the solar system (everything revolves around the sun). With the development of improving telescopes, more of the solar system could be seen. But as a result, it eventually became impossible to construct a geocentric model that was consistent with empirical observations, while those observations were consistent with a heliocentric model.
* The text’s emphasis on empirical testing of theories can be reinforced by getting students to see that a major part of economic research is the search to design tests that will discriminate among different hypotheses proposed to explain something. When something is consistent with multiple hypotheses, we don’t have much of an idea of what is going on, so that a test that distinguishes among hypotheses in that circumstance can be very valuable.
* I find rain dancing to be a good illustration of confusing correlation with causation. If a group of people decides that a deity that brings them rain needs its anger appeased by rain dancing at the beginning of the normal rainy season and they dance long enough, it will rain. It will not rain because they danced, but because the rainy season started. But once a belief in the necessity of rain dancing has begun, it can be very hard to change, because every time they dance (if they dance long enough), it rains.
* Weather can also be used to illustrate problems of establishing causation. Since heaters come on in the winter and air conditioners in the summer, one could conclude that heaters cause the house to be colder and air conditioners cause it to be hotter.
* Similarly, chill drafts can be blamed for catching a cold in the winter (because looking back, it’s easy to remember being exposed to some recent draft in the winter) even though the more scientific reason is that you are inside more, closely exposed to more of other people’s “bugs,” in the winter than in the summer.
* In addition to the illustrations of the fallacy of composition from the text, you could add leaving early to beat the traffic (similar to arriving early to beat the crowd) and cutting your price to take sales from rivals (which doesn’t work if all rivals lower their prices).
* The text emphasizes economics as a disciplined way of thinking, not as the source of clear-cut answers for every circumstance. It is worth emphasizing why the economic way of thinking points toward “it depends” as the first part of the answer to general questions (because the expected marginal benefits and expected marginal costs of choices depend on so many factors).

Key Terms

|  |  |  |
| --- | --- | --- |
| **aggregate** | **fallacy of composition** | **normative statement** |
| **bads** | **goods** | **positive statement** |
| **capital** | **human capital** | **product markets** |
| **causation** | **hypothesis** | **rational behavior** |
| ***ceteris paribus*** | **intangible goods** | **resources** |
| **correlation** | **labor** | **scarcity** |
| **economic goods** | **land** | **services** |
| **economics** | **macroeconomics** | **simple circular flow model** |
| **efficiency** | **market** | **tangible goods** |
| **empirical analysis** | **market failure** | **the economic problem** |
| **entrepreneurship** | **microeconomics** | **theory** |
| **factor (or input) markets** |  |  |

Appendix Key Terms

|  |  |  |
| --- | --- | --- |
| **bar graph** | **scatter diagram** | **variable** |
| **negative relationship** | **slope** | ***X*-axis** |
| **pie chart** | **time-series graph** | ***Y*-axis** |
| **positive relationship** |  |  |

Key Formulas

The Student Review Card Deck has a card devoted to the key economic formulas covered in this text. There are no key formulas in Chapter 1.

**You can use the following videos to supplement the discussion of topics discussed in this chapter. You can find them at** [**www.cengagebrain.com**](http://www.cengagebrain.com/)**. At the home page, search for the ISBN of your title (from the back cover of your book) using the search box at the top of the page. This will take you to the product page where the videos can be found.**

Videos

**BBC Videos**

1. *The Consequences of Rising Prices* – Something to think about as you watch the video: What causes the prices of gasoline and food to rise? How would you respond to the rising prices of gasoline and food described in the video?

**Ask the Instructor Videos**

1. *Why do economists talk about money? Do they really believe that people are motivated only by money?* – Economists talk a lot about money and wealth because data on these variables is readily available. Because of this, economists focus on income and wealth maximization when attempting to measure peoples' progress toward their assumed objective of maximizing well-being. But economists recognize that many things other than monetary incentives motivate people.

**Graphing Workshops**

1. *Working with Graphs* – This tutorial is about the basics of graphing. The graphs we will be using involve two quantities, or variables. One of them is measured along the horizontal axis, also called the x-axis. This axis begins at the origin, which is marked zero.

**You can use the Self-Review as a check of student learning. If students cannot answer questions for a section, plan to reteach that content.**

Chapter 1 – Self-Review: Questions and Answers

You can find the following quiz on page 21 at the end of Chapter 1. Students can find answers to this quiz online at [www.cengagebrain.com](http://www.cengagebrain.com).

**1-1–Economics: A Brief Introduction**

**1. What is the definition of economics?**

Economics is the study of the choices we make among our many wants and desires given our limited resources.

**2. Which of the following goods are scarce?**

**a. garbage**—not scarce (note that garbage is not a good, but a reduction in garbage would be a good)

**b. salt water in the ocean**—not scarce

**c. clothes**—scarce

**d. clean air in a big city**—scarce

**e. dirty air in a big city**—not scarce

**f. a public library**—scarce

**1-2–Economic Behavior**

**3. What does rational self-interest involve?**

Economists consider individuals to be acting in their rational self-interest if they are striving to do their best to achieve their goals with their limited income, time, and knowledge, and given their expectations of the likely future consequences (both benefits and costs) of their behavior.

**4. What is rational behavior?**

Rational behavior is when people do the best they can based on their values and information, under current and anticipated future consequences. Rational individuals weigh the benefits and costs of their actions and they only pursue actions if they perceive their benefits to be greater than the costs.

**1-3–Markets**

**5. What do market prices communicate to others in society?**

The prices charged by suppliers communicate the relative availability of products to consumers; the prices consumers are willing to pay communicate the relative value consumers place on products to producers. That is, market prices provide a way for both consumers and suppliers to communicate about the relative value of resources.

**6. Why does the circular flow of money move in the opposite direction from the flow of goods and services?**

The circular flow of money moves in the opposite direction from the flow of goods and services because the money flows are the payments made in exchange for the goods and services.

**1-4–Economic Theory**

**7. Why do economic predictions refer to the behavior of groups of people rather than individuals?**

Economists’ predictions usually refer to the collective behavior of large groups rather than individuals because looking at the behaviors of a large group of individuals allows economists to discern general patterns of actions and therefore make more reliable generalizations.

**8. Are the following topics ones that would be covered in microeconomics or macroeconomics?**

**a. the effects of an increase in the supply of lumber on the home-building industry**—microeconomics

**b. changes in the national unemployment rate**—macroeconomics

**c. changes in the inflation rate**—macroeconomics

**d. changes in the country’s economic growth rate**—macroeconomics

**e. the price of concert tickets**—microeconomics

**1-5–Pitfalls to Avoid in Scientific Thinking**

**9. What types of misinterpretation result from confusing correlation and causation?**

Confusing correlation between variables with causation can lead to misinterpretation in which a person “sees” causation between two variables or events where none exists or in which a third variable or event is responsible for causing both of them.

**10. Do any of the following statements involve fallacies? If so, which ones?**

**a. Because sitting in the back of the classroom is correlated with getting lower grades in the class, students should always sit closer to the front of the classroom.**—This involves confusing correlation with causation.

**b. Historically, the stock market rises in years the NFC team wins the Super Bowl and falls when the AFC wins the Super Bowl; I am rooting for the NFC team to win for the sake of my investment portfolio.**—This involves confusing correlation with causation.

**c. Gasoline prices were higher last year than in 1970, yet people purchased more gas, which contradicts the law of demand.**—This is a violation of the *ceteris paribus* conditions.

**1-6–Positive and Normative Economics**

**11. Why is the positive/normative distinction important?**

It is important to distinguish between positive and normative statements because many controversies in economics revolve around policy considerations that contain both. Deciding whether a policy is good requires both positive analysis (what will happen) and normative analysis (is what happens good or bad).

**1-7–Why Study Economics?**

**12. Why is economics worth studying?**

Perhaps the best reason to study economics is that so many of the things that concern us are at least partly economic in character. Economics helps us to intelligently evaluate our options and determine the most appropriate choices in many given situations. It helps develop a disciplined method of thinking about problems.

**You can use the following questions and exercises to work with students as part of your in-class discussion. You might also use them as an in-class quiz or give them to students as an independent homework assignment.**

Class Exercises

1. Write your own definition of economics. What are the main elements of the definition?

**Answer: The definition must recognize the central parts of the economist’s point of view: resources are scarce; scarcity forces us to make choices; and the cost of any choice is the highest valued of the lost opportunities.**

1. Identify whether each of the following transactions takes place in the factor market or the product market.

a. Billy buys a sofa from Home Time Furniture for his new home.

b. Home Time Furniture pays its manager her weekly salary.

c. The manager buys dinner at Billy’s Café.

d. After he pays all of his employees their wages and pays his other bills, the owner of Billy’s Café takes his profit.

**Answers:**

**a. Product market**

**b. Factor market**

**c. Product market**

**d. Factor market**

**Furniture is a good purchased in the product market from firms. Labor is a resource that households sell to firms in the factor market. Restaurant food is a good purchased by consumers in the product market. Finally, Billy’s entrepreneurial resource is paid a profit, which is the amount left over after all his other costs have been paid. This takes place in the factor market.**

1. The Environmental Protection Agency asks you to help it understand the causes of urban pollution. Air pollution problems are worse the higher the Air Quality Index. You develop the following two hypotheses.

*Hypothesis I*: Air pollution will be a greater problem the higher the average temperature in the urban area.

*Hypothesis II*: Air pollution will be a greater problem, the greater the population of the urban area.

Test each hypothesis with the facts given below. Which hypothesis fits the facts better? Have you developed a theory?

|  |  |  |  |
| --- | --- | --- | --- |
| Metropolitan Statistical Area | Days with Polluted Air\* | Average Maximum Temperature | Population (thousands) |
| Cincinnati, OH | 30 | 64.0 | 1,979 |
| El Paso, TX | 13 | 77.1 | 680 |
| Milwaukee, WI | 12 | 55.9 | 1,690 |
| Atlanta, GA | 24 | 72.0 | 4,112 |
| Philadelphia, PA | 33 | 63.2 | 5,101 |
| Albany, NY | 8 | 57.6 | 876 |
| San Diego, CA | 20 | 70.8 | 2,814 |
| Los Angeles, CA | 80 | 70.6 | 9,519 |

\*Air Quality Index greater than 100 (2002)

Source: U.S. Dept. of Commerce, Bureau of Census, 2002 *Statistical Abstract of the United States*, Tables Nos. 30, and 363; U.S. EPA, *Air Trends Report, 2002*, EPA.Gov/airtrends/Factbook.

**Answer: The data support the second hypothesis better than the first. The number of days with polluted air generally increases with the population. The five cities with the most days “with polluted air” are large places. The first hypothesis does not seem to be supported by the data. El Paso, Texas, was the hottest place on our list and had relatively few polluted days. The causes of air pollution are complex and many things affect the level of pollution in a city. In our limited world of seven cities, the second hypothesis is supported by the facts, and we could make a theoretical statement that air pollution will increase in general as population increases.**

1. In the 1940s, Dr. Melvin Page conducted a national campaign to stop people other than infants from drinking milk. According to Page, milk was a dangerous food and a leading cause of cancer. He pointed to the fact that more people died of cancer in Wisconsin, the nation’s leading milk producer, than any other state as proof of his claim. How would you evaluate Dr. Page’s claim?

**Answer: This is a case of mistaking correlation for causation. People in Wisconsin tended to live long lives and since cancer is a disease of middle and old age, it was a more frequent cause of death in Wisconsin than in other states. An area low in cancer deaths is likely to be an area of poor health where inhabitants die young.**

1. Are the following statements normative or positive, or do they contain both normative and positive statements?

a. A higher income-tax rate would generate increased tax revenues. Those extra revenues should be used to give more government aid to the poor.

b. The study of physics is more valuable than the study of sociology, but both should be studied by all college students.

c. An increase in the price of corn will decrease the amount of corn purchased. However, it will increase the amount of wheat purchased.

d. A decrease in the price of butter will increase the amount of butter purchased, but that would be bad because it would increase Americans’ cholesterol levels.

e. The birth rate is reduced as economies urbanize, but it also leads to a decreased average age of developing countries’ populations.

**Answers:**

**a. Both normative and positive statements.**

**b. Normative statements.**

**c. Positive statements.**

**d. Both normative and positive statements.**

**e. Positive statements.**