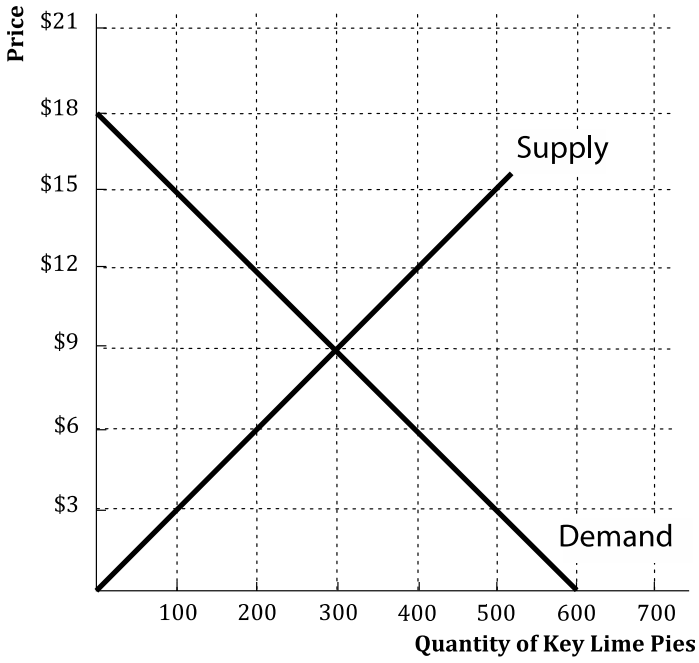
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Name:_____ Student ID:_____ Section:_____

PRICE CONTROLS AND TAXES
WORKSHEET 2

Below, you are provided with the demand and supply curves for key lime pies. You will use this information to analyze the effect of a price ceiling set below the equilibrium price of a key lime pie. You will identify the equilibrium price and quantity of pies before the price ceiling is imposed, and the market price and quantity of pies after the price ceiling is imposed. You will also examine the changes in consumer surplus, producer surplus, and total surplus before and after the price ceiling is imposed.



Part 1: Identify the equilibrium price of a key lime pie and the equilibrium quantity of key lime pies that are bought and sold at that price.

The equilibrium price is $9 per pie, and the equilibrium quantity is 300 pies.

Part 2: Calculate the amount of consumer surplus that is generated by this market.

$1,350

Part 3: Calculate the amount of producer surplus that is generated by this market.

$1,350

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Name:_____ Student ID:_____ Section:_____

Part 4: Calculate the amount of total surplus that is generated by this market.

$2,700

Part 5: Suppose that the government imposes a price ceiling of $6 per key lime pie. Identify the resulting market price of a key lime pie and the quantity of key lime pies that are bought and sold at this price.

The market price is $6 per pie, and the quantity is 200 pies.

Part 6: Suppose that the government imposes a price ceiling of $6 per key lime pie. Calculate the amount of consumer surplus that is generated by this market after the imposition of this price ceiling.

$1,800

Part 7: Suppose that the government imposes a price ceiling of $6 per key lime pie. Calculate the amount of producer surplus that is generated by this market after the imposition of this price ceiling.

$600

Part 8: Suppose that the government imposes a price ceiling of $6 per key lime pie. Calculate the amount of total surplus that is generated by this market after the imposition of this price ceiling.

$2,400

Part 9: Suppose that the government imposes a price ceiling of $6 per key lime pie. Calculate the amount of deadweight loss associated with this price ceiling.

$300

Part 10: Complete the statement below.

*The deadweight loss associated with a price ceiling that is set below the equilibrium price of a good or service is the amount by which _____ (consumer, producer, **total**) surplus falls in response to the imposition of the price ceiling.*

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1

The Scope and Method of Economics

by Tony Lima, California State University, East Bay, Hayward, CA

CHAPTER OUTLINE AND LEARNING OBJECTIVES

Why Study Economics? ***p. 2***
Identify three key reasons to study economics. Think of an example from your life in which understanding opportunity costs or the principle of efficient markets could make a difference in your decision making.

The Scope of Economics ***p. 5***
Describe microeconomics, macroeconomics, and the diverse fields of economics.

The Method of Economics ***p. 8***
Think about an example of bad causal inference leading to erroneous decision making. Identify the four main goals of economic policy.

An Invitation ***p. 12***
Begin to get a sense of the many ways economics touches one's life.

Economic Skills and Economics as a Career ***p. 12***
Describe economics as a career and the key skills you can learn from studying economics.

Appendix: How to Read and Understand Graphs ***p. 15***
Understand how data can be graphically represented.

Visit **MyLab Economics** for current examples, news articles, and teaching tips.

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DETAILED CHAPTER OUTLINE

I. Introduction, page 1

The authors show students how economics relates to their everyday lives. Case, Fair, and Oster discuss the interactions between the United States and other countries, while also comparing the United States to other countries. Along the way macroeconomics is introduced with the notions of employment, production, and GDP (although the authors don't use that term). Foreign trade is also mentioned at the level of U.S. exports and imports. The section concludes with a definition of economics that emphasizes the two fundamental economic problems: scarcity and choice. *Economics* is the study of how individuals and societies choose to use the scarce resources that nature and previous generations have provided.

TEACHING TIP: The opening sentence, "The study of economics should begin with a sense of wonder," is very true. Mention to your class that some people actually make a living teaching economics. Developed economies are truly highly specialized.

Unique *Economics in Practice*

Use the opening example on pages 1 and 2 to introduce the subject of globalization. Ask your students what "made in the United States" means. Many will respond that the good has to be manufactured in the United States. Raise the issue of where the parts were made. Quite a few goods that carry the "made in the United States" label are actually assembled in the United States with the components manufactured in other countries. Then move on to a discussion of what it would mean for the United States or any developed economy to consume only what we make. The general answer is higher prices and less choice for consumers, but try to get the students to focus on specific goods (bananas and BMWs are two that are easy to understand). If you're ambitious, you can introduce value added as a percentage of market value to measure the extent of local contribution to a final product.

Question: Apple's iPhones are assembled by Foxconn Industries in China. But the various parts come from many different countries. Should the iPhone be labeled "Made in China?" Shouldn't those other countries get some of the credit?

Suggested answer: This is stamped or printed on every iPhone: "Designed by Apple in California. Assembled in China." That's about as clear as you can get. You might mention to your class that complicated "rules of origin" are part of international trade agreements. These rules specify the conditions under which a product can be labeled "Made in the United States" (for example). One common rule is a minimum percentage of value added must be in the country in which origin is claimed.



TEACHING TIP: Each chapter of the book includes a feature entitled *Economics in Practice* that helps students apply the concepts of the chapter to a real-world observation or news story. Each chapter of this Instructor's Manual may include one or more Unique *Economics in Practice* to use in class.

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TEACHING TIP: To help break first-day tensions, try getting your students involved from the start. Ask them why they are taking the course. Be persuasive—this is a good chance to show the class that you're really a nice person. You will get a variety of answers, from the serious—"To understand the world," "To help me get a good job when I graduate," "I'm thinking about becoming an economics major"—to the humorous—"My father made me," "Intro Politics was full." Some of these answers can prompt further questions: Why might learning economics help you get a job? Why do you think your father wanted you to take this course? The answers can help acquaint the rest of the class with the breadth and practicality of economics.

TEACHING TIP: Try to get the class thinking in terms of substitutes. Ask them to think about substitutes for water. Most will say there are no substitutes for water. A few will say beer or wine, but point out that these start as water so they don't count. Things that can be used in place of water include plastic bottles of water placed in a toilet tank (reduces volume per flush); shorter showers; and brown lawns. Then point out that if there are substitutes for something as basic as water there almost certainly are substitutes for just about every other economic good. Wants exceed quantity available for any economic good. You might want to mention the 2012–2016 California drought in this context. Californians managed to reduce water consumption by 27 percent. But water deliveries to farmers have been cut. What impact will that have on, say, the price of lettuce?

II. Why Study Economics? pages 2–5

Learning Objective: Identify three key reasons to study economics. Think of an example from your life in which understanding opportunity costs or the principle of efficient markets could make a difference in your decision making.

There are three main reasons to study economics:

A. To Learn a Way of Thinking. Also described as a way to make decisions, the economic way of thinking involves understanding three fundamental concepts.

TEACHING TIP: Point out to students that economists use common everyday words to describe very specific ideas. The word *cost* is one example. How is the word used in everyday usage? One example is the common conflation of cost and price. Economists use the word to mean opportunity cost, the cost of choosing one alternative over another. Another example is efficiency. People generally use efficiency to describe any process that's accomplished with skill and dexterity. Economists mean producing the most output possible from given quantities of resources (*productive efficiency*). A related concept, *allocative efficiency* is probably too advanced for the first day (or week) of your class.

1. *Opportunity Cost* is the best alternative that we forgo, or give up, when we make a choice or a decision. Every decision means giving up something.

    a. Economists are fond of trade-offs as a way of thinking about decision making. Taking one action usually means giving up something else. As the text states, "The full 'cost' of making a specific choice includes [the value of] what we give up by not making the best alternative choice."

    b. Opportunity costs arise because resources are scarce. Scarce means limited. Resources are scarce because human wants exceed what we can produce from our current resources.

TEACHING TIP: This example will be familiar to many faculty. Suppose your professional organization is holding the annual meeting in Honolulu. You are fortunate enough to be selected to attend. After considering alternatives, you decide to take a week's vacation on Maui after the conference. You did this because you realized the marginal cost of travelling to Maui from Honolulu is relatively small. People often use marginal analysis without realizing what they are doing!

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Economics in Practice: Rainfall and Schooling in India

Rural India remains an agricultural society. Children join their parents working in the fields. Irrigation is common. And total output depends critically on annual rainfall. When there is a large quantity of rain, the harvest is large. The opportunity cost of a child attending school (and not working in the field) is also large. The opposite is true when there is a drought. Sure enough, the data shows that children tend to miss more days in class during years with larger rainfalls. As the opportunity cost of schooling rises, there is lower class attendance.

TEACHING TIP: Use the following exercise to quickly get across several points concerning opportunity costs. Ask students to think about what they would be doing if they were not in class. (Don't let them think about this too long or you may find yourself facing an empty classroom!) Make a list of the many suggestions you will receive: Go back to sleep, sunbathe, read a book. Answers will vary because tastes vary. Then ask each student to think about the value of that alternative. That value is the opportunity cost of attending class. (Clearly the benefits of attending your class always outweigh the cost!) Point out that measuring opportunity cost is subjective and depends on the perspective of the person making the choice. Conclude by noting that each student cannot have the whole list. Opportunity cost is not the value of *all* the alternatives forgone. It is the value of the single second best alternative.

Economics in Practice: Majoring in Economics Makes You Less Vulnerable to a Recession!

Getting a college degree increases lifetime income on average by about 70 percent. Two fields with high wage premia are engineering and economics. Recent work concludes that a degree in economics also protects graduates from the effects of graduating during a recession. During a recession, unemployment is high and wages are low. Getting a job under those circumstances places individuals on a lower rung of the job ladder and can keep them from advancing to the levels expected if they graduated when the economy was at full employment. The exceptions include those who hold degrees in economics. You might add that the unemployment rate among those with degrees in economics is usually very low.

TOPIC FOR CLASS DISCUSSION:

Have students discuss the costs of attending college. Most will usually name the explicit costs of tuition, fees, books, and room and board. Some may note the implicit cost of not working full time. Explore the idea that cost is not always an explicit payment but also a loss. Have students consider what full-time jobs they might have if they were not in college. Make sure the students understand that opportunity costs are real costs. If they had not chosen to attend college, the opportunity cost would have been their net economic gain or loss. You may want to add a comment that this analysis only looks at the 4 years of college. Over a lifetime, the benefits of college are far greater than the costs.

2. Marginalism: *Marginalism* is the process of analyzing the additional or incremental costs or benefits arising from a choice or decision. Marginal means a small change. The text uses *marginal cost*, the cost of increasing production by one unit. This can be illustrated by putting added miles on a car; the change in the odometer reading is the marginal mileage.

TOPIC FOR CLASS DISCUSSION:

Hotel managers use marginal cost all the time. As the training manager for Hilton once noted, "We are selling a very perishable product." A hotel room not rented tonight cannot be rented twice tomorrow night.

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Pose this question to the class: You are the night manager at the EZ-Sleep hotel. You are approached at 10:00 PM by a traveler looking for a room. The traveler says, "I can only spend $50." The standard rate for your cheapest room is $150. You know the hotel currently has half a dozen empty rooms. Should you rent the room for $50?

Many students will say no. They are not thinking marginally. Ask them what the marginal cost of one more occupied room will be. Answers should include electricity, water, amenities, and housekeeping services. Warn them to be careful: only the cost of the time to make up one room should be included in housekeeping services. It's difficult to raise the marginal cost to $50. ■

TEACHING TIP: To drive home the importance of marginal analysis, one example can come from the testing requirements you've outlined on your syllabus. Ask students to look into the future and imagine they've taken three exams and their average is a 78, say two points from a B. Given that their goal is to earn a B, the relevant grade is their grade on the final (fourth) exam; that is, the relevant grade is the marginal grade. At the end of semester, they have no control over what they earned on the first three exams (a sunk cost at this juncture), but they do have some control over their final exam grade.

3. Efficient Markets—No Free Lunch: An *efficient market* is a market in which profit opportunities are eliminated almost instantaneously. In efficient markets, profit opportunities are eliminated rapidly by the actions of those seeking the profits. Use the text's example of checkout lines at a grocery store to make the point that it is the people seeking the shortest line (express lines not included!) whose actions result in all the lines being of about the same length.

TEACHING TIP: The text repeats an old joke about a $20 bill lying on the sidewalk. Believers in perfectly efficient markets will argue that the $20 can't be there because, if it was, someone would have picked it up already. If you decide to repeat this joke in class, make it a $100 bill to drive the point home. The point, of course, is that no market is *perfectly* efficient.

TEACHING TIP: This is a good point to introduce the economics of information. One of the main factors that causes profit opportunities to persist is slow dissemination of information. Use the stockbroker example from the text to illustrate the other extreme. If a stockbroker calls with a hot tip, what should you do? The answer in the text—do nothing—is correct. Expand on this answer to point out that a phone call from your stockbroker is way, way too late. By the time you get the phone call, the information has already been disseminated via the Internet and other electronic trading networks. The current price of the stock will already reflect the information, eliminating any chance you might have to earn a profit.

B. To Understand Society

1. Economic decisions shape the physical environment and influence the character of society. The text cites the examples of the Industrial Revolution of the late 18th and early 19th centuries and the e-revolution of the late 1990s. The *Industrial Revolution* was the period in England during the late 18th and early 19th centuries in which new manufacturing technologies and improved transportation gave rise to the modern factory system and a massive movement of the population from the countryside to the cities.

2. The authors point to the market-driven miracle of millions of workers, each pursuing his or her own self-interest, producing output efficiently while also earning a living. These decisions have an enormous influence on the direction in which societies evolve. The text's example of the shrinking agricultural labor force is even more extreme today. At the same time, employment in technology-related industries has been booming. The text mentions Internet companies. Biotech firms are also important. In each case, the main thrust of the change has been the desire of entrepreneurs to build new businesses and earn a profit.

TOPIC FOR CLASS DISCUSSION:

Near the top of the "dot-com" stock market bubble, Milton Friedman said he was absolutely sure some dot-com companies would be successful and worth their current valuations, but he was also quite certain he didn't

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know which. Ask the class to discuss the impact of the stock market bubble on consumer spending and consumer behavior generally. This is a good time to introduce the differences between income and wealth. You might also point out that the fraction of income spent on consumption is much, much larger than the fraction of wealth spent on consumption. ■

TEACHING TIP: Using a news website, point out that the future of society depends on informed voters. The website merely reports what has happened. An understanding of economics is vital for understanding why things happen and can enable us to make better decisions in solving important social problems. List some of those problems and indicate where they may be covered in more detail later in your course (or other courses).

TEACHING TIP: Demonstrate to students that economics is relevant. Go to the front page of a news website (not the business page), and show it to the class. Briefly state how economics can shed light on each of six stories.

This will be easy to do for stories about national health policy, budget deficits, and inflation. But with a little imagination (and good class participation!), you can show how economics relates to virtually any news story. A cocaine bust? Economics explains why cocaine costs so much and why selling it can be such a lucrative activity for lawbreakers. A war in a faraway region of the world? Economics can help us understand the origins of the conflict, as well as the true cost—the opportunity cost—of a possible U.S. military intervention.

TEACHING TIP: Ask the students what percentage of the U.S. labor force is employed in agriculture. Few will guess the correct answer (less than two percent).

C. To Be an Informed Citizen: Many political issues citizens vote for deal with economic issues. The authors mention government payments for public schools and roads, the Obama health care plan, and ticket scalping as three examples. Without a basic understanding of economics, citizens are likely to vote for policies that are not in their best interests.

III. The Scope of Economics, pages 5–7

Learning Objective: Describe microeconomics, macroeconomics, and the diverse fields of economics.

A. Microeconomics versus Macroeconomics

1. *Microeconomics* is the branch of economics that examines the functioning of individual industries and the behavior of individual decision-making units—that is, firms and households.

2. *Macroeconomics* is the branch of economics that examines the economic behavior of aggregates—income, employment, output, and so on—on a national scale.

TEACHING TIP: Table 1.1 on page 7 in the text is an excellent summary of the differences between macroeconomics and microeconomics.

Economics in Practice: Barbie and the iPhone in the World

Even though iPhones are assembled in China and parts are produced everywhere, a high percentage of the retail price is captured in the United States. Components are produced in Germany, Korea, India, Japan, and a host of other nations that each add value to the end product. But the largest fraction of the iPhone's price is the value added paid to Apple, various U.S. distributors, and domestic component makers. The true value of the iPhone is its design and conception, not the parts that go into it.

Similarly, Mattell's Barbie doll was designed in the United States. The plastic used in the doll was made in Taiwan, the hair was made in Japan, and the clothes are made in China. The final doll assembly is also done in China. But of the $10 retail price, $8 is captured by the United States as Mattell's gross margin on each doll.

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B. The Diverse Fields of Economics: Table 1.2 on page 7 of the text lists some fields of specialty in economics (analogous to specialties in medicine).

TEACHING TIP: Students often think of economics as a rather narrow field. Stress its applicability to the analysis of a wide range of interests and its usefulness in preparing for a variety of graduate degrees. Try discussing the "economic approach" to the pollution problem. Many students and scientists believe pollution control is strictly an issue of regulation and have never thought of the economics that cause pollution in the first place. Drawing on the analogy to medicine, explain why in the current context of managed health care even a premed student would find an economics course helpful!

Students who still find the list of topics in the text uninteresting may be intrigued by sports economics (refer them to the *Journal of Sports Economics*) and studies of the wine industry (the *Journal of Wine Economics*).

Web Resources

Most fields of economic research have at least one website. The American Association of Wine Economists is at http://www.wine-economics.org/. The *Journal of Sports Economics* *https://journals.sagepub.com/home/jse* is published in association with the North American Association of Sports Economists https://naaseweb.org/

IV. The Method of Economics, pages 8–12

Learning Objective: Think about an example of bad causal inference leading to erroneous decision making. Identify the four main goals of economic policy.

A. Positive and Normative Economics

1. *Positive economics* is an approach to economics that seeks to understand behavior and the operation of systems without making judgments. It describes what exists and how it works.

2. *Normative economics* is an approach to economics that analyzes outcomes of economic behavior, evaluates them as good or bad, and may prescribe courses of action. Also called *policy economics*. When economists disagree, the points they argue about are often normative points (differences of opinion and values).

TEACHING TIP: One of the main contributions of economics to public debate is a clear distinction between positive and normative differences. This separation is often obscured in the media and some other social sciences.

Using a news website, find an economic issue on which government leaders disagree (e.g., the cause of the government budget deficit). Ask students: What sort of positive disagreement might be responsible for the dispute? There is disagreement over the appropriate size of the budget and the related size of government. This is a good chance to explore the concept of forecasts and the role of assumptions in making them. Next, make an arbitrary positive assumption. Say, about the future course of the economy. Could a normative difference still explain the policy dispute? One side believes that government is needed to provide more services, the other believes that people should spend their own money not have it spent for them by the government.

B. Theories and Models:

TEACHING TIP: This is a good place to describe the scientific method in economics. Economists develop mathematical models of some aspect of the world. They use those models to make predictions (called *hypotheses*). These predictions are then tested using real-world data. Models whose predictions have passed many such empirical tests become accepted as *theories*. Emphasize that economic theory is based on real-world data, not just mathematics. And warn them against saying, "Well, that's OK in theory, but …"

1. A *model* is a formal statement of a theory, usually a mathematical statement of a presumed relationship between two or more variables.

2. A *variable*: a measure that can change from time to time or from observation to observation.

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3. *Ockham's Razor* is the principle that irrelevant detail should be cut away. Of course, be sure it's irrelevant! Formally, Ockham's Razor says that when there are two equally good explanations of a phenomenon, the simpler of the two should be used.

4. *All Else Equal*: *Ceteris Paribus* is a device used to analyze the relationship between two variables while the values of other variables are held unchanged. (*Ceteris paribus* is often abbreviated *cet.par.*)

5. Expressing Models in Words, Graphs, Equations: Economists use graphs and mathematics to make it more difficult to overlook some effects. One obvious example is income and substitution effects in consumer theory.

TEACHING TIP: Relate models to how a coach or choreographer might diagram a play or dance routine on a chalkboard to illustrate how the play or routine should work on the field or on stage.

TOPIC FOR CLASS DISCUSSION:

The text uses the example of what determines total miles driven during a time period. The factors listed there are the number of drivers (driving age, population growth, changes in state laws); the price of gasoline (a complement); household income; number and ages of children; commute distance; location of shopping areas; and availability and quality of public transportation. Make this more specific by using months as the measure of time. Then ask the class for some other factors that might affect average miles driven per month by a household. Two obvious factors are airfares (the price of a substitute) and special events such as September 11, 2001. ■

TEACHING TIP: The text mentions obesity and soda consumption. Former New York City Mayor Michael Bloomberg has tried to ban sodas larger than 16 ounces, believing that will cure obesity. But all we have is correlation. It is far more likely that both obesity and high soda consumption are caused by a third factor.

TEACHING TIP: Here's an interesting exercise to try. Announce a new soft drink, Mocha-Cola, that you intend to market. Which variables do students think will be important in determining the amount of Mocha-Cola that people will want to buy? You will quickly compile a long, but not exhaustive, list. This gives you an excellent excuse to introduce abbreviations.

Ask in which way each variable will impact on the consumption of Mocha-Cola. Observe that a specific cause-and-effect pattern is being postulated in each case. If you choose, introduce functional notation at this point, distinguishing between dependent and independent variables, and labeling each independent variable with a positive or negative sign, according to the direction of its effect. (You can introduce the use of graphs here. See the note below under the Appendix to this chapter.)

Students have now unknowingly constructed a model of consumer behavior. Use this opportunity to underline the point that not all variables have been included in the model and that an all-inclusive list would be cumbersome and distract from the major elements of the model.

The values of the variables that you have compiled in your list will be continually changing. Bring out the point that to isolate the effect of any one on the consumption of Mocha-Cola, the *ceteris paribus* assumption can be invoked. You might suggest the analogy to experiments in the natural sciences, where tightly controlled environments actually make the *ceteris paribus* assumption a reality.

TEACHING TIP: Use the Mocha-Cola example above to introduce graphs. You can draw a separate graph of the number of bottles purchased versus two or three of the independent variables that influence consumption. Be sure to select at least one independent variable with a positive relationship to quantity and one with a negative relationship, saving price for last. Explain what it means to move along each of these curves, and what *ceteris paribus* means in each case.

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6. Cautions and Pitfalls: *What Is Really Causal?*

   a. Just because event A happened before event B does not mean A caused B. Examples of this sort of thinking are everywhere. Confusing correlation with causation has become a cottage industry for much of the media.

   b. *Post hoc, ergo propter hoc* means literally "after this (in time), therefore because of this." A common error made in thinking about causation: If Event A happens before Event B, it is not necessarily true that A caused B. The *post hoc fallacy* is the incorrect belief that because event B occurs after event A then A caused B. This is closely related to correlation and causation. *Correlation* refers to things happening together. Just because two variables move closely together doesn't mean one *causes* the other.

   c. Testing Theories and Models: *Empirical economics* is the collection and use of data to test economic theories. Researchers look at data collected over time and across different categories or conditions (e.g., age groups, locations) and try to draw conclusions. Controlled experiments are difficult in economics (and other social sciences), but are not impossible.

TEACHING TIP: A few years ago, I taught 8:00 AM classes five days a week. I got out of bed at 5:30 AM. Every morning when I got up, the sun would be rising. Obviously the act of getting out of bed caused the sun to come up. This example shows two things. First, just because two actions happen together does not mean one caused the other. A theory must be developed that explains why one might cause the other. Second, make sure you have gathered enough data. All I needed to do was include some weekend mornings to refute my hypothesis.

Economics in Practice: Does Your Roommate Matter for Your Grades?

Two studies seem to indicate that peer effects are real and significant. The lesson for students: you will become who you hang out with.

TEACHING TIP: Can students find examples of these pitfalls in the model of consumer behavior they constructed for Mocha-Cola? For example, do consumers in the aggregate behave as one individual consumer might? One individual consumer may purchase on impulse, but that is not true in the aggregate. This is a good opportunity to explain what it means to aggregate.

TEACHING TIP: The text mentions Ph.D. economists employed by firms working with "big data." Perhaps the best-known example is Hal Varian, formerly of U.C. Berkeley, now at Google. Recently Peter Coles (Ph.D., Stanford, 2005, formerly at the Harvard Business School) accepted a job at eBay as their Director of Global Strategy in charge of designing new marketplaces for them.

Web Resources

Go to a website for data about the economy. The text mentions the Bureau of Labor Statistics, for example. Other good sources are the Bureau of the Census, the Federal Reserve, the Bureau of Economic Analysis and (more exotically) the CIA's World Factbook available at https://www.cia.gov/the-world-factbook/

TEACHING TIP: Mention that the statistical techniques used by economists often implicitly assume each independent variable changes while the others are held constant. These statistical techniques can be used to overcome some of the problems caused by our inability to construct controlled experiments.

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C. Economic Policy: Without objectives it's impossible to come up with policies. Economists have looked at four different criteria for judging outcomes: efficiency, equity, growth, and stability. Using these criteria to evaluate a policy often leads to conflicting recommendations. This is especially true for the first two (efficiency and equity).

1. *Efficiency* is the condition in which the economy is producing what people want at the least possible cost. As the text notes, this is allocative efficiency.

TEACHING TIP: The text discusses voluntary exchange as an activity that increases efficiency. It's impossible to stress this idea too much. Voluntary exchange makes both parties to the transaction better off. If one party would be made worse off they will walk away from the transaction. This is also a key reason why international trade improves economic welfare.

2. *Equity* means fairness. This is impossible to define universally. An allocation that seems fair to one person will be viewed by another as highly skewed.

TEACHING TIP: Mention the "law of unintended consequences." Rent control is a good example. This is a good spot to point out that rent control often hurts the very people it was intended to help.

TOPIC FOR CLASS DISCUSSION:

Fairness is in the eye of the beholder. My favorite exercise to provoke a discussion of fairness is to suggest a grading system for the course in which students with A's, B+'s, and B's at the end of the course will have points taken away from them and redistributed to those with C's, D's, and F's. In the end everyone receives a C+. (There is always at least one student who says, "I'll take it!") Outline the issues involved. Compare this to the issues involved in income redistribution. ■

TOPIC FOR CLASS DISCUSSION:

Ongoing congressional debates over tax policy provide a good platform to discuss equity. Is it fair that those with high incomes receive most of the dollars of a tax cut? Point out that these people also pay most of the taxes. (If you have the time, a brief discussion of the earned income tax credit and the concept of negative income taxes will often be persuasive.) ■

3. *Economic growth* is an increase in total output of an economy. Growth occurs when a society acquires new resources or when it learns to produce more using existing resources.

   a. Economists often define growth as an increase in output per capita.

   b. Government policies can encourage or discourage growth.

4. *Stability* is a condition in which national output is growing steadily, with low inflation and full employment of resources. The causes of instability and the various techniques governments have used to try to improve stability are the core of macroeconomics.

TOPIC FOR CLASS DISCUSSION:

The text refers to an increase in output per capita as if it automatically becomes an improvement in the standard of living. Ask the class whether they can think of circumstances in which higher output per capita would cause their standard of living to fall. They should come up with higher pollution levels, increased crowding and higher crime rates as items that reduce the standard of living but are not measured in output per capita. ■

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Unique *Economics in Practice*

Voluntary exchange makes both parties better off. But what if the exchange is not entirely voluntary? Consider the minimum wage. Under minimum wage laws, employers must pay each employee a minimum amount per hour. That means employees working for the minimum wage are not engaged in voluntary exchange because the employer is coerced into paying a certain amount. Since this exchange is not entirely voluntary, it is possible that the parties are not made better off. Employers will hire fewer workers than they might hire if the wage was lower. Some workers will find themselves unemployed as a result. Economists call the cost of this inefficiency the *deadweight loss* caused by the transaction.

Question: Ask for a show of hands. Who supports raising the minimum wage to $15/hour?

Answer: This is your first chance to introduce students to the unpleasant realities economists face every day. Use it wisely.

V. An Invitation, page 12:

Learning Objective: Begin to get a sense of the many ways economics touches one's life.

Remember what you've learned in previous chapters. You'll use this material in future chapters.

VI. Economic Skills and Economics as a Career, page 12

Learning Objective: Describe economics as a career and the key skills you can learn from studying economics.

A. During this course you'll learn economic principles that will help you understand the economy and business. These tools will also help you make life decisions such as what career to pursue.

B. Business managers use economic principles to make pricing and investment decisions.

C. Government policymakers use economic principles to allocate research funds and make decisions about environmental issues.

Web Resources
Economic data is widely available on the web. I always try to download the data in spreadsheet format. For U.S. data students should visit http://www.bea.gov, http://www.bls.gov, and http://www.census.gov. Global data is available from http://www.oecd.org, http://www.worldbank.org/, http://www.imf.org/, and http://www.un.org/en/databases/#stats. Real statistics aficionados will want to try their hand at Eurostat (http://epp.eurostat.ec.europa.eu/). U.S. monetary statistics are at http://www.federalreserve.gov while Eurozone statistics are at http://www.ecb.eu.

APPENDIX: HOW TO READ AND UNDERSTAND GRAPHS, PAGES 15–20

Learning Objective: Understand how data can be graphically represented.

TEACHING TIP: You must face the unpleasant choice of either boring those who know this material or skipping the material and losing those who have forgotten it. If possible, try to hold a special half-hour section of class and invite those who feel "rusty" with graphs to come for a short review. Passing out an assignment that requires basic graphing skills will encourage those who need the review to attend.

Whatever you decide, it's usually better to include at least a brief review of graphs somewhere in the course.

TEACHING TIP: Emphasize that the "45˚ line" is simply a graph of $y = x$. This is especially important in macroeconomics.

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