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Preface

This Instructor's Manual was written to be used with *Macroeconomics: Principles, Applications, and Tools, 7th Edition*, and *Economics: Principles, Applications, and Tools, 7th Edition*, by O'Sullivan, Sheffrin, and Perez. A fully integrated teaching and learning package is necessary for today's classroom. Our supplement package helps you provide new and interesting real-world Applications and assess student understanding of economics. The supplements are coordinated with the main text through the numbering system of the headings in each section. The major sections of the chapters are numbered (1.1, 1.2, 1.3, and so on), and that numbering system is used consistently in the supplements to make it convenient and flexible for instructors to develop assignments.

Instructor's Manual Features

Each chapter of the Study Guide contains the following features:

Chapter Summary

This overview of the main economic concepts in the chapter shows you how to make connections between the chapters and lists the questions the students should be able to answer when you have finished the chapter. These questions are based on the Applications in the chapter.

Approaching the Material

This section summarizes a general approach to use to present the concepts in the chapter.

Chapter Outline

The chapter outline contains the following features:

- **Detailed descriptions** of the economic concepts in the chapter.
- **Key term definitions** as they appear in the text, allowing you to have the same points of reference as the students.
- **Teaching tips** on how to present specific concepts in the chapter. New approaches, classroom activities, and teaching approaches are presented on a topic-by-topic basis.
- **Figure references** and tips on how to use them to explain economic concepts. The figures are all available in PowerPoint® format for download from the Instructor's Resource Center at www.pearsonhighered.com/irc and also on the Instructor's Resource CD-ROM.
- **Application summaries** that help you present one of the key features of the book—real-world applications that answer key questions presented at the start of each chapter.
- **Solutions** to end-of-chapter exercises. Several of the exercises support the Applications.

Supplements for Instructors

In addition to the Instructor's Manual, the following supplements are available:

Test Item Files

The Test Item Files help instructors easily and efficiently assess student understanding of economic concepts and analyses.

Macroeconomics Test Item File 1, by Randy Methenitis of Richland College: Test Item File 1 (TIF1) includes over 3,000 questions. All questions are objective and machine-gradable. This Test Item File is available in a computerized format using TestGen EQ test-generating software.

Macroeconomics Test Item File 2, by Brian Rosario of the University of California, Davis: This additional Test Item File (TIF 2) contains over 3,000 machine-gradable questions based on TIF1 but regenerated to provide instructors with fresh questions when using the book the second year. This is available in a computerized format using TestGen EQ test-generating software.

Test questions are annotated with the following information:

- **Difficulty:** 1 for straight recall, 2 for some analysis, 3 for complex analysis
- **Type:** multiple-choice, true/false, short-answer, essay
- **Topic:** the term or concept the question supports
- **Skill:** fact, definition, analytical, conceptual
- **AACSB** (see description that follows)
- **Applications** (correlates question to chapter Application)

The Test Item Files include questions with tables that students must analyze to solve for numerical answers. The Test Item Files also contain questions based on the graphs that appear in the book. The questions ask students to interpret the information presented in the graph.

The Association to Advance Collegiate Schools of Business (AACSB)

The authors of the Test Item Files have connected select questions to the general knowledge and skill guidelines found in the AACSB assurance of learning standards.

What Is the AACSB? AACSB is a not-for-profit corporation of educational institutions, corporations, and other organizations devoted to the promotion and improvement of higher education in business administration and accounting. A collegiate institution offering degrees in business administration or accounting may volunteer for AACSB accreditation review. The AACSB makes initial accreditation decisions and conducts periodic reviews to promote continuous quality improvement in management education. Pearson Education is a proud member of the AACSB and is pleased to provide advice to help you apply AACSB assurance of learning standards.

What Are AACSB Assurance of Learning Standards? One of the criteria for AACSB accreditation is quality of the curricula. Although no specific courses are required, the AACSB expects a curriculum to include learning experiences in areas such as the following:

1. Communication
2. Ethical Reasoning
3. Analytic Skills
4. Use of Information Technology
5. Multicultural and Diversity
6. Reflective Thinking

Questions that test skills relevant to these guidelines are appropriately tagged. For example, a question testing the moral questions associated with externalities would receive the Ethical Reasoning tag.

How Can Instructors Use the AACSB Tags? Tagged questions help you measure whether students are grasping the course content that aligns with the AACSB guidelines noted. In addition, the tagged questions may help instructors identify potential applications of these skills. This in turn may suggest enrichment activities or other educational experiences to help students achieve these skills.

TestGen

The computerized TestGen package allows instructors to customize, save, and generate classroom tests. The test program permits instructors to edit, add, or delete questions from the Test Item Files; edit existing graphics and create new graphics; analyze test results; and organize a database of tests and student results. This software allows for extensive flexibility and ease of use. It provides many options for organizing and displaying tests, along with search and sort features. The software and the Test Item Files can be downloaded from the Instructor's Resource Center at www.pearsonhighered.com/irc.

PowerPoint® Lectures

Three sets of PowerPoint® slides, prepared by Brock Williams of Metropolitan Community College, are available for instructors to use.

1. A comprehensive set of PowerPoint® slides that can be used by instructors for class presentations or by students for lecture preview or review. The presentation includes all the graphs, tables, and equations in the textbook.
2. A comprehensive set of PowerPoint® slides with Classroom Response Systems (CRS) questions built in so that instructors can incorporate CRS “clickers” into their classroom lectures. For more information on Pearson's partnership with CRS, see the description below. Instructors may download these PowerPoint presentations from the Instructor's Resource Center at www.pearsonhighered.com/irc.
3. A student version of the PowerPoints is available as PDF files. This version allows students to print the slides and bring them to class for note taking.

Instructor's Resource CD-ROM

The Instructor's Resource CD-ROM contains all the faculty and student resources that support this text. Instructors have the ability to access and edit the following supplements: Instructor's Manual, Test Item Files, and PowerPoint® presentations.

Classroom Response Systems

Classroom Response Systems (CRS) is a wireless polling technology that makes large and small classrooms even more interactive because it enables instructors to pose questions to their students, record results, and display the results instantly. Students can answer questions easily by using compact remote-control transmitters. Pearson has partnerships with leading providers of classroom response systems and can show you everything you need to know about setting up and using a CRS system. We provide the classroom hardware, text-specific PowerPoint® slides, software, and support; and we show you how your students can benefit. Learn more at www.pearsonhighered.com/crs.

Blackboard® and WebCT® Course Content

Pearson offers fully customizable course content for the Blackboard® and WebCT® Course Management Systems.



Both the text and supplement package provide ways for instructors and students to assess their knowledge and progress through the course. MyEconLab, the new standard in personalized online learning, is a key part of O'Sullivan, Sheffrin, and Perez's integrated learning package for the seventh edition.

For the Instructor

MyEconLab is an online course management, testing, and tutorial resource. Instructors can choose how much or how little time to spend setting up and using MyEconLab. Each chapter contains two Sample Tests, Study Plan Exercises, and Tutorial Resources. Student use of these materials requires no initial set-up by their instructor. The online Gradebook records each student's performance and time spent on the Tests and Study Plan and generates reports by student or by chapter. Instructors can assign tests, quizzes, and homework in MyEconLab using four resources:

1. Preloaded Sample Test questions
2. Problems similar to the end-of-chapter problems
3. Test Item File questions
4. Self-authored questions using Econ Exercise Builder

Exercises use multiple-choice, graph drawing, and free-response items, many of which are generated algorithmically so that each time a student works them, a different variation is presented. MyEconLab grades every problem, even those with graphs. When working homework exercises, students receive immediate feedback with links to additional learning tools.

Customization and Communication MyEconLab in CourseCompass™ provides additional optional customization and communication tools. Instructors who teach distance learning courses or very large lecture sections find the CourseCompass format useful because they can upload course documents and assignments, customize the order of chapters, and use communication features such as Digital Drop Box and Discussion Board.

For the Student

MyEconLab puts students in control of their learning through a collection of tests, practice, and study tools tied to the online, interactive version of the textbook, and other media resources. Within MyEconLab's structured environment, students practice what they learn, test their understanding, and pursue a personalized Study Plan generated from their performance on Sample Tests and tests set by their instructors. At the core of MyEconLab are the following features:

1. Sample Tests, two per chapter
2. Personal Study Plan
3. Tutorial Instruction
4. Graphing Tool

Sample Tests Two Sample Tests for each chapter are preloaded in MyEconLab, enabling students to practice what they have learned, test their understanding, and identify areas in which they need further work. Students can study on their own, or they can complete assignments created by their instructor.

Personal Study Plan Based on a student’s performance on tests, MyEconLab generates a personal Study Plan that shows where the student needs further study. The Study Plan consists of a series of additional practice exercises with detailed feedback and guided solutions and keyed to other tutorial resources.

Tutorial Instruction Launched from many of the exercises in the Study Plan, MyEconLab provides tutorial instruction in the form of step-by-step solutions and other media-based explanations.

Graphing Tool A graphing tool is integrated into the Tests and Study Plan exercises to enable students to make and manipulate graphs. This feature helps students understand how concepts, numbers, and graphs connect.

Additional MyEconLab Tools MyEconLab includes the following additional features:

1. **Economics in the News**—This feature provides weekly updates during the school year of news items with links to sources for further reading and discussion questions. Instructors can assign these articles with related, auto-graded questions to assess students’ understanding of what they’ve read.
2. **eText**—While students are working in the Study Plan or completing homework assignments, part of the tutorial resources available is a direct link to the relevant page of the text so that students can review the appropriate material to help them complete the exercise.
3. **Glossary**—This searchable version of the textbook glossary provides additional examples and links to related terms.
4. **Glossary Flashcards**—Every key term is available as a flashcard, allowing students to quiz themselves on vocabulary from one or more chapters at a time.
5. **Ask the Author**—Students can e-mail economics-related questions to the author.
6. **Research Navigator (CourseCompass™ version only)**—This feature offers extensive help on the research process and provides four exclusive databases of credible and reliable source material, including *The New York Times*, the *Financial Times*, and peer-reviewed journals.

Supplements for Students

To accommodate different learning styles and busy student lifestyles, we provide a variety of print and online supplements.

Study Guide

The Study Guide reinforces economic concepts and Applications from the main book and helps students assess their learning. Each chapter of the Study Guide includes the following features:

- **Chapter Summary:** Provides a summary of the chapter, key term definitions, and review of the Applications from the main book.
- **Study Tip:** Provides students with tips on understanding key concepts.
- **Key Equations:** Alerts students to equations they are likely to see throughout the class.
- **Caution!:** Alerts students about potential pitfalls and key figures or tables that deserve special attention.

- **Activity:** Encourages students to think creatively about an economic problem. An answer is provided so students can check their work.
- **Practice Quiz:** Includes approximately 25 multiple-choice and short-answer questions that help students test their knowledge. Select questions include a graph or table for students to analyze. Some of these questions support the Applications in the main book.
- **Answers to the Practice Quiz**

Teaching Tips for Macroeconomics

One of the challenges of teaching Principles of Economics is that most students bring no prior knowledge of the subject to the classroom. It has been shown that we learn by making connections between prior knowledge and new information. It is easier to make those connections when we see relationships between new information and prior knowledge. The traditional "guns or butter" and "widget factory" approaches to explaining economic principles does little to alleviate this problem. Use strategies that will enable students to make connections between what they do know—fast food, concert tickets, cutting classes—and economic principles. The “dismal science” as a description of economics did not originate with principles of economics students. Many would not disagree with that statement, however. Student descriptions of economics range from boring to impossible. One of the reasons that some students have trouble with principles of economics may be the way it is presented. By adjusting the method of delivery as well as improving parts of the lecture, Principles of Economics instructors may be able to improve outcomes.

The First Day of Class

The first class meeting sets the tone for the rest of the semester. Students leave the classroom with a perception of how the class is likely to unfold for the semester. Most students in Principles of Economics classes have not had previous exposure to the study of economics. Given this, most instructors are inclined to give a definition of the study of economics. Invariably, some variation of the following emerges: “...The study of how scarce resources are allocated to satisfy unlimited wants.” A discussion of basic human needs and allocation of natural resources follows. One can almost visualize students sinking into their chairs and the tone for the semester is set. The “dismal” science has begun for another semester. Students without previous exposure to economic principles have nothing to grab onto.

Consider this alternative. The instructor begins the first day of class with the following question. “How many of you ate breakfast this morning?” A direct, simple question designed to engage all of the students. The question is effective in a classroom of 20 or 200. Assuming a normal distribution of students, there will be both affirmative and negative answers. Begin by asking those who said no, why not. Invariably, some one will answer, “I didn’t have time.” Now the economics lesson begins. Ask the student if he or she has only 24-hour days. Explain that all of us have the same number of hours in the day, and we have to decide how to use them. Those who did not eat breakfast decided to use the time differently—to sleep, to study, to take a morning jog. The students have made a fundamental economic insight. They have made a decision to allocate a scarce resource—time—to satisfy unlimited needs. The discussion can continue to illustrate other economic concepts. What did they have for breakfast—tastes and preferences? Do they make different decisions on the weekends than during the week? Do Saturday and Sunday have more than 24 hours? Or, is it a different allocation decision?

The students have learned about resource allocation. They have used their own experiences to illustrate an economic concept. The students have used something they are very familiar with—the decision to have breakfast or not—to learn a basic economic theory. No mention of guns and butter or widgets. The students may leave the classroom with the idea that maybe economics is not so dismal after all.

Keep Them Coming to Class

One of the challenges that all instructors face is how to encourage students to do things that you believe will enhance their learning—from class attendance to homework to practice exams. Economics instructors know the answer. People respond to incentives. You must reward whatever behaviors you want from your students. Class attendance is one behavior you want to reward. Here are some strategies to think about:

- **Mandatory attendance:** Take attendance everyday. Students are allowed one or two absences. After that, points are taken off final grade.
- **Attendance as part of the grade:** Slight variation as above, same concept. A certain percentage (10%, for example) of the final grade is based on attendance. Establish a scale (1 or 2 classes missed equals A...).
- **Class participation:** Attendance plus. Students need to be there and participate.
- **Random unannounced quizzes.** Give an occasional quiz without prior notice. Those who are not there earn a zero—no makeup.
- **Most important:** Make the classes interesting and important. “Interesting” speaks for itself. “Important” means that what goes on in the class appears in the exam. Students will quickly figure out (after the first exam) whether or not the test is straight from the book and class attendance is not necessary.

The same strategies apply to any other behavior you want from students. If you want students to do homework, you have to keep track of it and make it part of their grade. The same with practice tests, online visits, or anything else. You have to provide the student with an incentive.

What to Cover and How

You have been provided course sequencing options in the preface of the main text as well as in this Instructor’s Manual (see the grid on page xi). Remember these are suggestions. You should design the course to fit the students you are teaching. Generally, students in economics classes come in three varieties: economics majors, business majors, and students taking the class to fulfill their social science. Depending on who you’re teaching, you may structure the course differently. Most instructors end up not covering all the material they want to at the depth they would like. One way to make sure you cover the material you believe to be essential is to save the optional chapters for the end of the semester:

- Chapter 8: Why Do Economies Grow?
- Chapter 17: Macroeconomic Policy Debates
- Chapter 18: International Trade and Public Policy
- Chapter 19: The World of International Finance

These chapters are not essential for Principles of Economics students to understand at great depth, so saving them until the end allows you the flexibility to pace the class.

How long should you spend with each chapter? That will depend on the individual class. On some chapters, you should spend as long as it takes (within reason) to insure that the majority of the students have a clear understanding of the material. Understanding Chapter 3 (Exchange and Markets) and Chapter 4 (Demand, Supply, and Market Equilibrium) are essential for any student who is going to understand economics. Chapter 9 (Aggregate Demand and Aggregate Supply), Chapter 13 (Money and the Banking System) and Chapter 14 (The Federal Reserve and Monetary Policy) are essential because they form the basis for understanding other chapters. *Caution:* Do not let one or two or three students slow the class to a crawl. At some point, you will have to suggest office visits or tutoring. Encourage students to use MyEconLab (www.myeconlab.com) to take practice tests, create a study plan, and access many interactive resources. Because of the importance of these chapters, you can use quizzes or other assignments to enhance the learning.

Overall Approach

The overall approach to teaching economics is to take what students are familiar with and use these settings to explain economic principles. Use the students in class as live participants in your lectures. Economics is a social science that makes predictions about human behavior. The more the instructor can involve students in the presentation of the theory, the more effective student learning can be.

Organizing Your Macroeconomics Syllabus

The following chart helps you organize your macroeconomics syllabus based on your teaching preferences and objectives:

Chapter	Standard Course	Long-Run Focus	Short-Run Focus	Challenging Course
1. Introduction: What Is Economics?	X	X	X	X
2. The Key Principles of Economics	X	X	X	X
3. Exchange and Markets	X	X	X	X
4. Demand, Supply, and Market Equilibrium				X
5. Measuring a Nation's Production and Income	X	X	X	X
6. Unemployment and Inflation	X	X	X	X
7. The Economy at Full Employment		X		X
8. Why Do Economies Grow?	X	X	X	X
9. Aggregate Demand and Aggregate Supply	X	X	X	X
10. Fiscal Policy	X	X	X	X
11. The Income Expenditure Model	X		X	X
12. Investment and Financial Markets	X		X	
13. Money and the Banking System	X	X	X	X
14. The Federal Reserve and Monetary Policy	X	X	X	X
15. Modern Macroeconomics: From the Short Run to the Long Run	X	X	X	X
16. The Dynamics of Inflation and Unemployment		X		X
17. Macroeconomic Policy Debates				X
18. International Trade and Public Policy				X
19. The World of International Finance	X	X	X	X

Organizing Your Economics Syllabus

The following chart helps you organize your syllabus based on your teaching preferences and objectives:

Chapter	Core	Policy	Optional
1. Introduction: What Is Economics? Appendix: Using Graphs and Percentages	X		X
2. The Key Principles of Economics	X		
3. Exchange and Markets			X
4. Demand, Supply, and Market Equilibrium	X		
5. Measuring a Nation's Production and Income	X		
6. Unemployment and Inflation	X		
7. The Economy at Full Employment			X
8. Why Do Economies Grow? Appendix: Model of Capital Deepening	X		X
9. Aggregate Demand and Aggregate Supply	X		
10. Fiscal Policy	X		
11. The Income Expenditure Model Appendix: Formulas for Equilibrium Income and the Multiplier			X X
12. Investment and Financial Markets	X		
13. Money and the Banking System Appendix: Formula for Deposit Creation	X		X
14. The Federal Reserve and Monetary Policy	X		
15. Modern Macroeconomics: From the Short Run to the Long Run	X		
16. The Dynamics of Inflation and Unemployment			X
17. Macroeconomic Policy Debates		X	
18. International Trade and Public Policy		X	
19. The World of International Finance	X		
20. Elasticity: A Measure of Responsiveness	X		
21. Market Efficiency and Government Intervention	X		
22. Consumer Choice with Utility Theory Appendix: Consumer Choice with Indifference Curves	X		X X
23. Production Technology and Cost	X		
24. Perfect Competition: Short Run and Long Run	X		
25. Monopoly and Price Discrimination	X		
26. Market Entry and Monopolistic Competition	X		
27. Oligopoly and Strategic Behavior	X		
28. Controlling Market Power: Antitrust and Regulation		X	
29. Imperfect Information: Adverse Selection and Moral Hazard		X	
30. Public Goods and Public Choice		X	
31. External Costs and Environmental Policy		X	
32. The Labor Market, Income, and Poverty	X		
33. Unions, Monopsony, and Imperfect Information			X

I hope this Instructor's Manual and the rest of the supplements will help you prepare and enjoy your class.

Jeff Phillips
Colby Sawyer College

1

Introduction: What Is Economics?

Chapter Summary

Chapter 1 provides a basic illustration of what economics is and why it is useful. Economics is the study of the choices people, firms, and governments make when resources are scarce. Economic analysis helps us understand the consequences of these choices. Here are the main points of the chapter:

- Most of modern economics is based on positive analysis, which answers the question “What *is*?” or “What *will be*?”
- Economies must answer three questions: What products do we produce? How do we produce the products? Who consumes the products?
- Normative analysis answers the question “What *ought to be*?”
- To think like an economist, we (a) use assumptions, (b) use the notion of *ceteris paribus*, (c) think in marginal terms, and (d) assume that rational people respond to incentives.
- Macroeconomics helps us understand why economies grow and understand economic fluctuations. Microeconomics helps us understand how markets work.

Here are the key questions that students should be able to answer by the end of the chapter. These questions appear in the chapter opener of the main text and again near the two Applications within the chapter:

1. Do people respond to incentives?
2. What is the role of prices in allocating resources?

Approaching the Material

The first classes are very important in determining your students’ attitudes towards economics. You have to find out their attitude and use real-world examples that help them understand that economics relates to their lives. Stating to the class that economics is “The study of how scarce resources are allocated to satisfy unlimited wants” is accurate but is also one of the reasons why some people still refer to economics as “the dismal science.” Try the following definition of economics instead: “Economics is the study of how you, your friends, the stores where you shop, and your mayor make choices.” Every student in front of you makes choices everyday—what to wear, what to have for breakfast, or whether to sleep in, whether to study or play video games. Students allocate resources all day long. Time is the one resource that everyone can relate to and everyone has the same amount of. Use what students know to teach them what you want them to know.

Chapter Outline

1.1 What Is Economics?

- A. **Scarcity:** the resources we use to produce goods and services are limited. **Economics** is the study of choices when there is scarcity.

Teaching Tip

Students have scarce resources they have to allocate. Ask the class who had breakfast this morning. You should have a room full of both breakfasters and those who did not eat. Ask those who did not eat breakfast why not. Someone is sure to say they did not have the time. Explain that we all have the same amount of time (a scarce resource) but we choose to allocate it differently. (i.e., sleep in, workout, study, eat breakfast).

- B. Factors of Production

Factors of production: the resources used to produce goods and services, also known as production inputs.

Natural resources: the resources provided by nature and used to produce goods and services.

Labor: the physical and mental effort people use to produce goods and services.

Physical capital: the stock of equipment, machines, structures, and infrastructure that is used to produce goods and services.

Human capital: the knowledge and skills acquired by a worker through education and experience.

Entrepreneurship: the effort used to coordinate the factors of production—natural resources, labor, physical capital, and human capital—to produce and sell products.

- C. Positive Versus Normative Analysis

1. **Positive analysis** answers the questions “what is?” or “what will be?”

- a. For example: What is the effect on poverty of a living wage ordinance? Or, What is the effect on a city’s costs of a living wage ordinance?

2. **Normative analysis** answers questions of “What ought to be?”

- a. For example: Should a city implement a living wage ordinance?

Teaching Tip

Tell the students that Mr. Alumni Bigbucks has donated 50 million dollars to the university. The following question is an example of positive analysis: Should the donation be used to build a new stadium or a state-of-the art library/technology center? The following question is an example of normative analysis: What do they think should be built and why?

- D. The Three Key Economic Questions

The choices made by individuals, firms, or governments answer three fundamental questions:

1. **What** goods and services do we produce?
2. **How** do we produce these goods and services?
3. **Who** consumes the goods and services that are produced?

 Teaching Tip

Now is a good time to introduce the concept of markets indirectly. Consumers decide what is produced and for whom; businesses decide how the products are produced.

E. Economic Models

An **economic model** is a simplified representation of an economic environment, often employing a graph. For example, economists use the model of a market to analyze the effects of public policy on economic outcomes.

1.2 Economic Analysis and Modern Problems

Economic analysis can provide insights into real-world problems such as:

- A. Traffic Congestion: problem is solved by paying tolls.
- B. Poverty in Africa: economic growth helps the poor (see Figure 1.1 on page 12).
- C. Economic View of the Current World Recession: policymakers can draw on many years of experience in economic policy to guide the economy during the current times.

1.3 The Economic Way of Thinking

A. Use of Assumptions to Simplify and Facilitate Learning

B. Exploring Relationships between Variables and the *Ceteris Paribus* Assumption

A **variable** is a measure of something that can take on different values. The *ceteris paribus* is a Latin expression meaning other variables being held fixed. The assumption is that when we consider changes in one variable, we hold all other variables constant.

 Teaching Tip

Ask the students to recall doing experiments in high school science (chemistry) classes. Remind them that in order to obtain reliable results, they had to change only one element while holding other elements constant.

C. Thinking at the Margin

Economists consider small, incremental changes to determine whether or not it is desirable to change the level of economic activity. A small, one-unit change in value is known as a **marginal change**. For example, should you eat the fourth piece of pizza if you aren't hungry?

D. Rational People Respond to Incentives

 Teaching Tip

Self-interest is not the same as selfishness. Ask the students to think about all of the things their parents have done for them over the years. Not selfish, but certainly in the parent's self-interest.

E. Example: London Addresses Its Congestion Problem

The City of London imposed an \$8 per day tax to drive in the city between 7:00 AM and 6:30 PM. The tax reduced the congestion significantly, cutting travel times in half. The city's economy thrived.

Teaching Tip

Ask the students what other pricing schemes London could have used to reduce congestion—free public transportation, alternative work hours, higher parking rates.

Teaching Tip

Almost every college campus in America lacks enough spaces for those who want to park. Discuss the current parking policy at your university. Ask the students to use economic analysis to come up with alternative policies to solve the parking problem (small groups should work well here). The possible solutions should include raising parking fees, restricting parking by types of parkers (no freshman, faculty/staff only), remote parking with free shuttles, altering class schedules, rewards for car pooling, and expanding parking spaces.

Review the key questions from the chapter opener and their related Applications:

Question 1: Do people respond to incentives?

APPLICATION 1: RESPONDING TO PRODUCTION REWARDS

Research has found that people do respond to incentives. One study found that the guarantee of earning bonuses increased productivity in workers by 7%. When told that if they hit a target they would earn a bonus automatically, workers were more productive than workers who were told that they would tentatively receive a bonus. In this instance, the fear of loss was greater than the prospect of a gain. The results of this experiment revealed the power and the subtleties of incentives.

Question 2: What is the role of prices in allocating resources?

APPLICATION 2: THE ECONOMIC SOLUTION TO SPAM

The economic solution to spam would involve introducing prices to the email system. There are two possible approaches. One would be to charge a small price for commercial emails. This would reduce the profitability of spamming. Another approach would be to charge a penalty to the sender for each refused email. Both approaches would reduce the amount of spam.

1.4 Preview of Coming Attractions: Macroeconomics

Macroeconomics is the study of the nation's economy as a whole; it focuses on the issues of inflation, unemployment, and economic growth.

A. Why Study Macroeconomics?

1. To understand why economies grow
2. To understand economic fluctuations
3. To make informed business decisions

1.5 Preview of Coming Attractions: Microeconomics

Microeconomics is the study of the choices made by households, firms, and the government, and how these choices affect the markets for goods and services.

- A. Why study microeconomics?
1. To understand markets and predict changes
 2. To make personal or managerial decisions
 3. To evaluate public policies

Additional Applications to Use in Class

Question: Does a real estate agent have an incentive to get you the highest price?

ADDITIONAL APPLICATION: FREAKONOMICS

Source: Motley Fool audio interview with economist Steven Levitt

Interviewed by David Gardner

“Freakonomics”

Summary: Key Points in the Article

This audio clip features an interview with one of the authors of the best-selling book “Freakonomics.” Economist Steven Levitt answers a host of questions typically not tackled by most economists. One of the questions is related to realtors and agency relationships. In other words, do realtors really work for real estate sellers?

According to Levitt, it is in the best interest of the realtor to convince sellers to take an offer lower than they would receive if the property remained on the market. Since the percentage of the sales price that real estate salespersons receive from selling a house is a very small fraction, a \$10,000 increase in sales price might net a real estate professional another \$150 commission for a tremendous amount of additional work. Therefore, it is in the real estate salesperson’s best interest to convince the seller to make the quick sale and take the first reasonable offer. Levitt points toward evidence that real estate professionals tend to leave their own properties on the market longer and receive 2-3% more in sales price.

Levitt addresses many other issues including market efficiency, horse racing, and drug dealing in this interview. Listen to the clip for Levitt’s economic explanation of numerous topics.

Analyzing the News

Levitt’s primary contribution is his application of economic thought to a number of topics typically not addressed by economics. As you will hear, economics is truly a social science that can be used to explain quite a bit of human behavior.

Thinking Critically Questions

1. What is “freakonomics”?
2. Why would the illustration of “realtors” and not maximizing sales price for sellers be an economic topic?
3. Are the stock markets efficient according to Levitt?

 **Teaching Tip**

This is a great example of how people's incentives are often not the same. Although the real estate agent works for the seller, their interests regarding holding out for a higher price are not the same.

Question: How does a tightening of discretionary income affect luxury industries?

ADDITIONAL APPLICATION: SPORTSBIZ: GOLF INDUSTRY GETS HIT HARD

Sweet, David

“SportsBiz: Golf Industry Gets Hit Hard”

Posted 12/3/2008 on MSNBC.com

Summary: Key Points in the Article

Golf courses are not only on hold in the United States, but also many are being converted to other uses. The 1990s saw tremendous expansion in the sport, which is now being reversed as many people forego the game due to tight budgets. More courses are closing this year than are opening and openings are the lowest in 20 years.

In addition, many new courses are tied to housing projects that are currently mothballed due to the flagging housing market. Equipment sales are down as well as rounds played. The one bright spot appears to be China. One course designer formerly in high demand in the U.S. is now focusing on China's growing appetite for the game.

Analyzing the News

Golf is a game that consumes discretionary income. As more people look for ways to reduce spending either due to job loss or conservation of cash, golf may be one of the first luxuries to go. It appears that the recession may be impacting all levels of income. You may begin to see a reduction in price as shown in the graph as golf courses attempt to draw customers back to the green. Of course, if the number of golf courses in the U.S. falls even further, you would see a leftward shift in supply that might help the surviving courses.

Thinking Critically Questions

1. What is causing the leftward shift in demand for golf?
2. How do expectations cause demand shifts?
3. Why is China experiencing a golf boom?

Question: Should people invest in low-cost health insurance?

ADDITIONAL APPLICATION: IS LOW-COST HEALTH INSURANCE WORTH IT?

McCormack, Karyn

“Is Low-Cost Health Insurance Worth It?”

Posted 8/04/2008 on MSNBC.com

BusinessWeek

Summary: Key Points in the Article

Some of the low cost health insurance plans currently being pitched on television may not be worth the price. A couple of options limit coverage so that any surgery or hospitalization is capped at less than \$1,200. The primary coverage is minor medical instead of major medical.

Critics maintain that policies of this nature do little for the insured since any major medical event would result in thousands of dollars of expenses not paid by the plans. However, representatives at one of the companies said that company representatives will negotiate large bills on behalf of their clients. The company, iCan, maintains that their network pricing clout and negotiation will reduce a typical \$50,000 bill to around \$10,000 to \$12,000.

There are currently 47 million uninsured Americans that may opt for these low cost mini-medical plans. However, even at the low end price of \$160 a month for individuals and \$260 a month for families these plans may stress a lot of budgets.

Analyzing the News

Access to medical care is a critical issue in the U.S. Does everyone have access to treatment? Probably not equally and many people are forced into bankruptcy every year due to high medical bills. Expect to see continued debate over this issue after the presidential election.

Thinking Critically Questions

1. Why is this issue important?
2. What are some options for the government to debate?
3. What forms of nationalized health care currently exist?

Appendix A

Using Graphs and Percentages

1A.1 Using Graphs

A. Graphing Single Variables

1. Pie charts
2. Bar graphs
3. Line graphs

See Figures 1A.1A, 1A.1B, and 1A.2. Students who are not familiar with graphs will need lots of time here. Give them simple data and let them create their own pie charts and bar graphs.

B. Graphing Two Variables (See Figures 1A.3 and 1A.4)

1. Two variable graphs use both the horizontal and vertical axis.
2. Play “connect the dots” to determine points on the line.

 **Teaching Tip**

Have the students create graphs without numbers. Using concepts they are familiar with (Hours of study, G.P.A.) have them draw the line that shows the general shape of the relationship.

Positive relationship: a relationship in which two variables move in the same direction.

Negative relationship: a relationship in which two variables move in opposite directions.

C. Computing the Slope

Slope of the curve is the vertical difference between two points (*the rise*) divided by the horizontal difference (*the run*).

 **Teaching Tip**

Most students should be familiar with the concept of slope, but it is worth your time to go step by step for at least a few problems.

D. Moving Along the Curve Versus Shifting the Curve

1. Variables in the graph versus variables not in the graph
2. Changing variables in the graph - movement along the curve
3. Changing variables not in the graph - movement of the curve

See Figure 1A.5. Emphasize that the Y-intercept represents variables not in the graph.

E. Graphing Negative Relationships

Use Figure 1A.6 to illustrate the negative relationship between downloads and CDs purchased. Most students should not have a problem with the concept of a negative relationship.

 **Teaching Tip**

Ask students to come up with three pairs of variables that have a negative relationship.

F. Graphing Nonlinear Relationships

Use Figure 1A.7 to show students what a non-linear relationship looks like. Unless you have an unusual class, you should avoid using calculus to explain non-linear relationships. An explanation of how there may not be a constant relationship between variables would be useful.

1A.2 Computing Percentage Changes and Using Equations

A. Computing Percentage Changes

Use the formulas to show students how to compute percentage change. Several examples may be necessary.

 Teaching Tip

Most students are shoppers. Use concepts like “20% off” sales to help them understand this concept.

Question 3: How do we compute percentage changes?

APPLICATION 3: THE PERILS OF PERCENTAGES

This Application explains how in the 1970s the government of Mexico City repainted highway lines to make a 4-lane highway into a 6-lane highway and then turned it back into a 4-lane highway. When reporting on the results of those changes in lanes on the highway, the government incorrectly reported the percentage changes of the effects of re-doing the highway because they used the simple approach to computing percentage changes. This shows that percentage calculations can be inaccurate, if you’re not careful. It’s important to remember that the midpoint formula accurately records percentage changes.

1A.3 Using Equations to Compute Missing Values

Follow the formulas in the book. As this is basic algebra, students should be well-versed, but a few in-class problems should be helpful.

Solutions to End-of-Chapter Exercises

Chapter 1

SECTION 1.1: WHAT IS ECONOMICS?

- 1.1 what, how, who
- 1.2 natural resources, labor, physical capital, human capital, entrepreneurship
- 1.3 statement “a.” is TRUE
- 1.4
 - a. normative
 - b. positive
 - c. normative
 - d. normative
 - e. positive

SECTION 1.2: ECONOMIC ANALYSIS AND MODERN PROBLEMS

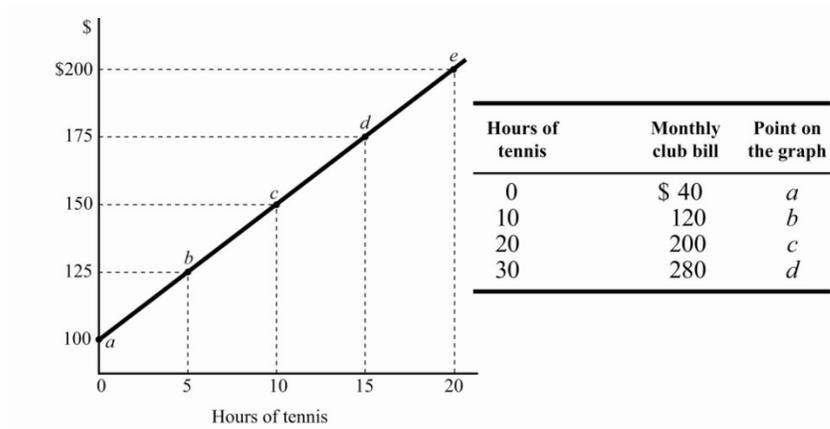
- 2.1 b.
- 2.2 legal system, regulatory environment

SECTION 1.3: THE ECONOMIC WAY OF THINKING

- 3.1 the earth is flat, the roads are flat
- 3.2 assumptions, use of *ceteris paribus* to isolate variables, margin, incentives
- 3.3 b.
- 3.4 greater
- 3.5 snail mail, price
- 3.6 false

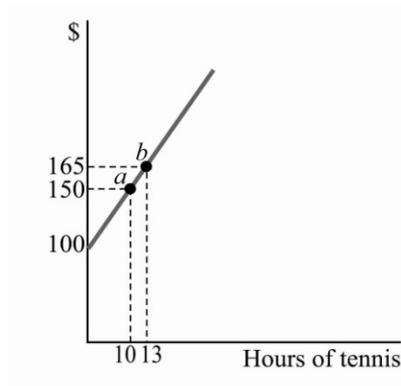
Chapter 1 Appendix

1. a.

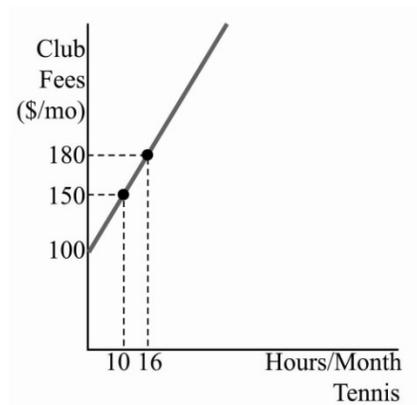


b. \$5.00, hours/month

c. \$15.00

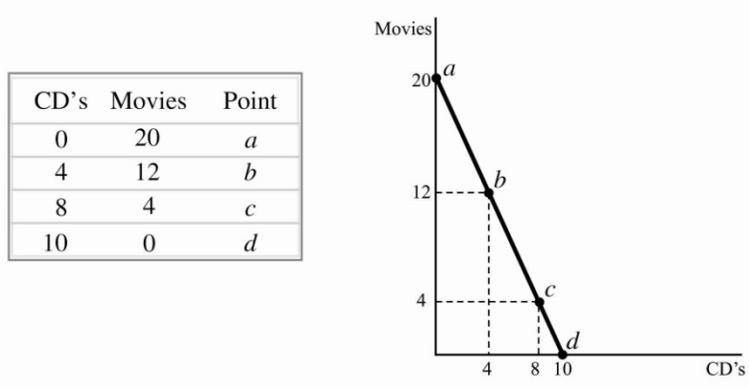


d. 6 additional hours



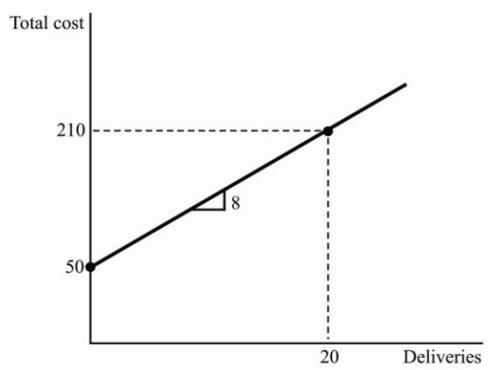
2. \$20, \$4.00, 10, \$60, \$80

3. a.



b. -2.0 movies, CD

4. a.



Number of Deliveries	Total Costs
0	50
5	90
10	130
15	170
20	210

- b. \$8.00, delivery
- c. Drivers' wages and the rental cost of the truck. In addition, the other costs of delivery, such as the price of fuel, insurance, and taxes.
- d. deliveries
- e. drivers' wages, the rental cost of the truck, or the price of fuel

5. along, shifts

6. 10.0%, -2.0%, 6.0%

7. 112, 54, 23

8. 40% = 20/50, 33% = 20/60

2

The Key Principles of Economics

Chapter Summary

Chapter 2 introduces the key principles that are central to all economic theory:

- The *principle of opportunity cost* states that the opportunity cost of something is what you sacrifice to get it. Opportunity costs in production are generally increasing, and thus, the production possibilities curve is bowed outward.
- The *marginal principle* states that any activity should be increased as long as the marginal benefits of the additional activity exceed the marginal costs.
- The *principle of voluntary exchange* states that a voluntary exchange between two people makes both people better off.
- The *principle of diminishing returns* states that, in the short run, if use of one input is increased while all others are held constant, production will eventually increase at a decreasing rate.
- The *real-nominal principle* states that what matters to people is the real value or purchasing power of money or income, not its face or nominal value.

Here are the key questions that students should be able to answer by the end of the chapter. These questions appear in the chapter opener of the main text and again near the Applications within the chapter:

1. What is the opportunity cost of running a business?
2. How do people think at the margin?
3. What is the rationale for specialization and exchange?
4. Do farmers experience diminishing returns?
5. How does inflation affect the real minimum wage?
6. How does inflation affect lenders and borrowers?

Approaching the Material

Continue the approach you developed in the first chapter, reaching students where they are. The decision to go to college is a great illustration of opportunity costs because students forgo earnings that they would have received from a full-time job. Apply the concept of diminishing returns to hours studying: if a student studies for five hours, will studying one additional hour really benefit him or her? Most of the students will have had jobs, so use the price of a gallon of gas or a burger per hour worked to explain real wages. Most students will have trouble with the marginal principle; so have plenty of examples ready. A seat on a bus or train that is not full works well. An extra passenger in a car for a road trip or another person watching a movie will also work.

Chapter Outline

2.1 The Principle of Opportunity Cost

A. Definition

1. The **opportunity cost** of something is what you sacrifice to get it.
2. What you sacrifice is the *next best* alternative.
3. For example, if you choose to buy a cup of coffee, you are giving up the money it costs to buy it. What else would you have used the \$2.00 for? The opportunity cost of the coffee is the one thing (or next best alternative) that you would buy if not the coffee.

Teaching Tip

Ask the students what they would be doing if they weren't in class. Answers will range from sleeping, working, watching TV, studying, etc. You can make the point that the alternatives are infinite and computing the cost of them all is impossible. However, since they could only be doing one thing (not all of them) if they were not in class, determining the opportunity cost requires only knowing the one thing they would be doing.

B. The Cost of College

1. The classic example of opportunity cost is the costs of going to college. Be sure to illustrate the implicit opportunity cost of foregone income as well as tuition, books, etc.

Teaching Tip

It's also helpful to have a discussion about whether room and board should be considered a cost of college. If the person has to pay the same amount for room and board whether he/she goes to college or works, it should not be considered a cost of college.

C. The Cost of Military Spending

D. Opportunity Cost and the Production Possibilities Curve

1. The **production possibilities curve**: A curve that shows the possible combinations of products that an economy can produce, given that its productive resources are fully employed and efficiently used. (See Figure 2.1 and show how an increase in the production of one good requires a decrease in the production of the other.)
2. Discussion of relevant points on the production possibilities graph
 - a. Points on the curve are efficient and indicate an economy is utilizing all resources.
 - b. Points inside the curve are inefficient and indicate an economy is not utilizing all resources or resources are not used in the least-cost manner.
 - c. Points outside the curve are not feasible given current technologies and resources.
3. Shifts in the Production Possibilities Curve (See Figure 2.2 and show how points outside the PPC are feasible in the future if it shifts out due to increases in resources or technological innovation. It is also useful to discuss what might make the PPC shift in: a natural disaster, the Y2K bug, etc.)
 - a. Increased resources
 - b. Technological innovation

Teaching Tip

Use something students are familiar with to construct their first production possibilities curve. Pick two classes, such as Economics and Marketing. Tell them they are going to allocate study time to produce grades in the classes. The choice involves how much study time to allocate for each class. You can start with an all-or-nothing scenario producing an A|F outcome and make adjustments from there. Once they are comfortable, remind them that everything else was held constant. Ask them what would happen to the curve if the professors were better teachers, if students had better study skills, smaller classes, better textbooks, upgraded computers, more time to study.

Review the key question from the chapter opener and its related Application:

Question 1: What is the opportunity cost of running a business?

APPLICATION 1: DON'T FORGET THE COSTS OF TIME AND INVESTED FUNDS

This Application gives an example of a business to explain how we can use the principle of opportunity cost to compute a business's costs. In a business, the total costs are affected by the costs of raw materials, the opportunity costs of funds invested and the opportunity costs of time. This Application shows that we must include not just the costs of materials but also the opportunity cost of funds invested, as well as the opportunity costs of time in computing the true cost of running a business.

2.2 The Marginal Principle

- A. Definition
 1. **Marginal benefit** is the additional benefit resulting from a small increase in some activity.
 2. **Marginal cost** is the additional cost resulting from a small increase in some activity.
 3. Choose a level of the activity such that marginal benefit of the last unit equals the marginal cost of the last unit.
- B. Using the Marginal Principle: Movie Sequels (See Figure 2.3), Renting College Facilities, Automobile Emissions Standards

Teaching Tip

There are several easy-to-understand examples of the Marginal Principle in the world of college students. An easy way to start is with examples where the marginal cost is zero: The amount of food consumed at a particular meal in the cafeteria; Internet minutes in the computer lab; cell phone weekend minutes with some plans. Given the marginal costs are zero, the student's decision to consume is based on positive marginal benefits. You can then introduce situations where there are positive marginal costs, such as fast food that needs to be paid for.

Review the key question from the chapter opener and its related Application:

Question 2: How do people think at the margin?

APPLICATION 2: WHY NOT WALK UP AN ESCALATOR?

This Application explains the factors that go into our decision whether or not to walk up an escalator. We can use the marginal principle to see that whether we walk up the escalator or stand still on the escalator depends on the marginal benefit of what we will get out of walking up the escalator as opposed to standing still, compared to the cost of walking up the escalator. If the marginal benefit is greater than the marginal cost, we will stand still instead of walking up the escalator.

C. Driving Speed and Safety

2.3 The Principle of Voluntary Exchange

- A. The assumption is that people act in their own self-interest. A voluntary exchange between two people makes both better off. Markets work because they are based on the principle of voluntary exchange.

Teaching Tip

College students easily understand the principle of voluntary exchange because they are constantly engaged in voluntary exchanges. Work and consumption are two examples from their world. If they are employed, they voluntarily exchange their time and effort for the money they earn. Nobody kidnaps them and forces them to work. Their employer pays them voluntarily as well. Both the student and employer are better off. Any time individuals purchase anything, they exchange money for a product or a service, making both the buyer and the seller better off. Ask students what they purchased yesterday or today: Coffee or soda? Candy? Newspaper? Why did they purchase it?

B. Exchange and Markets

1. A market is an institution or arrangement that allows buyers and sellers to exchange goods and services.

Teaching Tip

Create a market in the classroom. Do the experiment described in the book or in MyEconLab.

C. Online Games and Market Exchange

1. Online games such as EverQuest illustrate how markets and exchange develop on their own because of the desire to trade.

Review the key question from the chapter opener and its related Application:

Question 3: What is the rationale for specialization and exchange?

APPLICATION 3: JASPER JOHNS AND HOUSEPAINTING

This Application illustrates how we can use the principle of voluntary exchange to explain why Mr. Johns, a very productive art painter, should hire the less productive house painter to paint his house. The opportunity cost of Mr. Johns painting the house himself would be the income lost by spending time painting the house rather than painting art and earning money for it. Mr. Johns could hire the house painter to paint the house for less money than he would lose by painting the house himself and not earn money by painting art during that time.

2.4 The Principle of Diminishing Returns

- A. **Principle of Diminishing Returns:** Suppose that output is produced with two or more inputs, and we increase one input while holding the others constant. Eventually, output will begin to increase at a decreasing rate.

Teaching Tip

Have the students picture the front end of a fast food franchise, such as McDonald's, Burger King, Wendy's, or another franchise near you. Ask them what would happen if you kept on adding more and more workers at McDonald's. All the equipment is fixed. The number of workers is the variable input. Ask students what would happen to the number of hamburgers served as you increased the number of workers from 1 to 3 to 5 to 50. Eventually the restaurant would be so crowded that none of the workers would be able to move or serve any hamburgers. (Make sure to point out that this is well beyond the point of diminishing returns.)

- B. Diminishing Returns from Sharing a Production Facility
1. A good example of diminishing returns is when a company tries to add workers to an existing production facility. Eventually, the facility will become overcrowded and the additional output resulting from additional workers will fall.

Review the key question from the chapter opener and its related Application:

Question 4: Do farmers experience diminishing returns?

APPLICATION 4: FERTILIZER AND CROP YIELDS

This Application illustrates how the notion of diminishing returns applies to all inputs to the production process. For a farmer, continuously increasing the amount of fertilizer applied to a fixed amount of land eventually reduces the increases in output. The farmer will experience diminishing return because while even though the amount of fertilizer was not fixed, the other inputs to the production process are fixed.

 Teaching Tip

A classroom full of urban or suburban students might not relate very well to this example. You can use watering the lawn instead. An excessive amount of water will not help the lawn grow faster.

2.5 The Real-Nominal Principle

A. Definition

1. What matters to people is the real value or purchasing power of money or income, not its face value.
2. The **nominal value** of an amount of money is its face value. The **real value** is the value of an amount of money in terms of what it can buy.

When the government publishes statistics about the economy, it takes into account the real-nominal Principle. For example, the value of “real wages” shows what has happened to the purchasing power of workers over time. The nominal wage shows what has happened to the sum on the worker’s paycheck, but it cannot show what has happened to purchasing power.

Review the key questions from the chapter opener and their related Applications:

Question 5: How does inflation affect the real minimum wage?

APPLICATION 5: THE DECLINING REAL MINIMUM WAGE

This Application uses the basket-of-goods approach to illustrate what has happened to the real minimum wage. Please describe the basket-of-goods approach. A worker earning the minimum wage in 2007 has lost more than a third of his purchasing power over the last 30 years.

 Teaching Tip

Ask the students how many of them would be happy to earn \$500,000 per year. Most will say yes. Then tell them that a case of soda pop costs \$100, a CD costs \$250, and a new car costs \$500,000. Are they still happy? You can now proceed to explain the difference between nominal and real variables.

Question 6: How does inflation affect lenders and borrowers?

APPLICATION 6: REPAYING STUDENT LOANS

This Application shows how inflation can impact the value of money paid back over time. Using changes in annual salaries, the Application demonstrates the work time it takes someone to pay back the loan under various inflation assumptions.

Teaching Tip

Another way to illustrate this concept is to ask students if they know their parents' monthly mortgage payments and when they purchased their homes. Inflation in home prices affects the amount that people will have to borrow. An older home usually will have a smaller nominal mortgage payment. However, your students' parents' salaries have presumably risen partly due to inflation. Therefore, inflation has helped those that have been debtors.

Additional Applications to Use in Class

Question: Has fish production reached the point of diminishing returns?

ADDITIONAL APPLICATION: SO LONG SEAFOOD? EXPERTS WARN OF DISASTER

MSNBC Staff and News Service Reports

“So Long Seafood? Experts Warn of Disaster”

Posted on MSNBC.com

Financial Times

<http://www.msnbc.msn.com/id/15532333/>

Posted 11/03/2006

Summary: Key Points in the Article

According to some experts, overfishing and pollution will virtually wipe out all the world's fisheries by the year 2050. A team of economists and ecologists arrived at that conclusion by extrapolating current trends. The team warned that unless fisheries management practices radically change, we were in the “last century of wild seafood.”

The team spent four years using controlled experiments and existing data to arrive at their conclusions. However, industry professionals do not appear to share the concerns. The National Fisheries Institute issued a statement that said, “Fish stocks naturally fluctuate in population,” and “By developing new technologies that capture target species more efficiently and result in less impact on other species or the environment, we are helping to ensure our industry does not adversely affect surrounding ecosystems or damage native species.”

Seafood consumption is up in the U.S., with the average American eating 16.6 pounds of seafood in 2004 versus 15.2 pounds in 2002. Fishing accounts for over \$80 billion in revenue worldwide.

Analyzing the News

Note that the National Fisheries Institute did not deny declining fish stocks. Instead the organization indicated the decline was part of a natural cycle. Could it be that the increasing global demand for seafood has pushed fishing to the point of diminishing returns?

Thinking Critically Questions

1. It appears that fish harvests are increasing but overall fish stocks may be declining. What economic principle is exhibited?
2. How can we increase production?
3. At what point would we cease to add fishing boats?

Question: How can people invest in themselves?

ADDITIONAL APPLICATION: “SHORT ON CASH, SOME PUT A PRICE ON THEMSELVES”

Aleccia, JoNel

Posted 12/5/2008 on MSNBC.com

Summary: Key Points in the Article

The shrinking economy has had an impact on people’s willingness to donate plasma, sperm, and fertile eggs. Hair sales are up as well. While the practice of selling most body products is illegal in the U.S., there are instances where people are considered “compensated donors.” For example, many plasma centers will pay \$20 for donor time and travel. The sudden spike in donor applications begs the question of whether the motives are altruistic or financial.

Donating fertile eggs can be lucrative. One nursing student reported being able to graduate from college debt free due to the \$28,000 she received for 4 cycles of fertile eggs donated since February. Viable sperm donors can earn \$600 a month for a cycle of ten donations.

While the practice can earn some cash only a small fraction of donors make it through the rigorous medical and life history screens for fertile eggs and sperm. In any case, applications to be donors are up 20 to 30 percent at most clinics with plasma donations up as much as 50 percent in some areas. The uptick appears to be consistent with the recession.

Analyzing the News

Since “price” appears fixed for these items you simply see an increase in overall quantity. However, this article begs the question of whether body parts and products should be available for sale instead of merely compensation for time and travel. What do you think?

Thinking Critically Questions

1. What is driving the increase on “donations” for certain body products?
2. How do clinics compensate donors, since it is illegal to buy plasma?
3. Should this practice be outlawed?

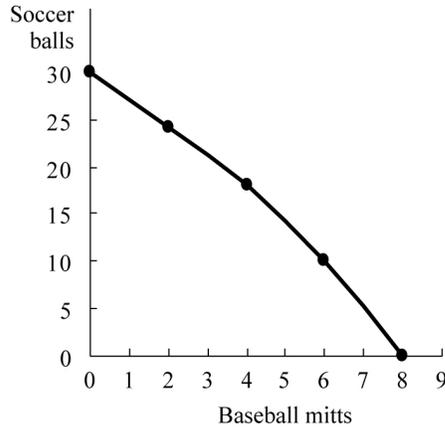
Solutions to End-of-Chapter Exercises

Chapter 2

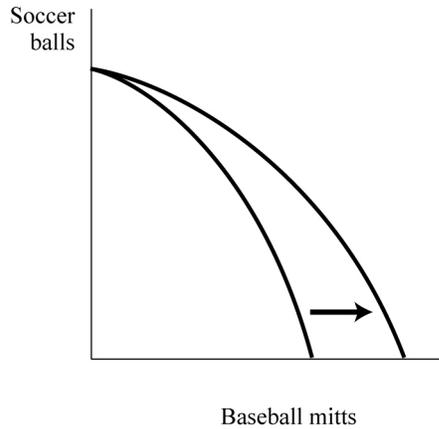
SECTION 2.1: THE PRINCIPLE OF OPPORTUNITY COST

- 1.1 10, 180
- 1.2 arrow up
- 1.3 arrow up
- 1.4 \$22,000
- 1.5 safe drinking water for 5 million people
- 1.6 outbidding, \$1/hectare
- 1.7 \$86,000 per year

- 1.8 Scientists and engineers will be used to execute the mission, so part of the opportunity cost might be measured in science and engineering education (or any other non-mission-related scientific productivity) foregone.
- 1.9 The cost of holding wealth in non-interest-bearing form is higher where the interest rate is higher.
- 1.10
 - a. The loan cost me the interest I could have earned by investing the \$100.
 - b. The opportunity cost is the current market price, not the historical price.
 - c. The cost of the stadium is \$50 million plus the foregone earnings from renting the land or the interest that could be earned on the proceeds from sale of the land (whichever is higher).
 - d. The cost would also include the time difference between alternative methods of commuting
- 1.11
 - a.



b.



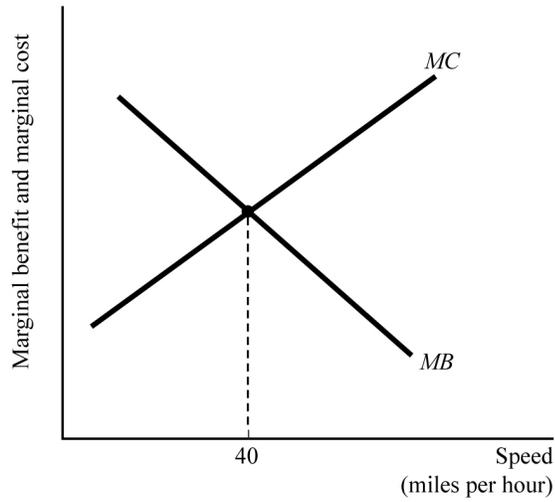
c. 6, 10

- 1.12 current value of the furniture, current rate of return on alternative investment(s)

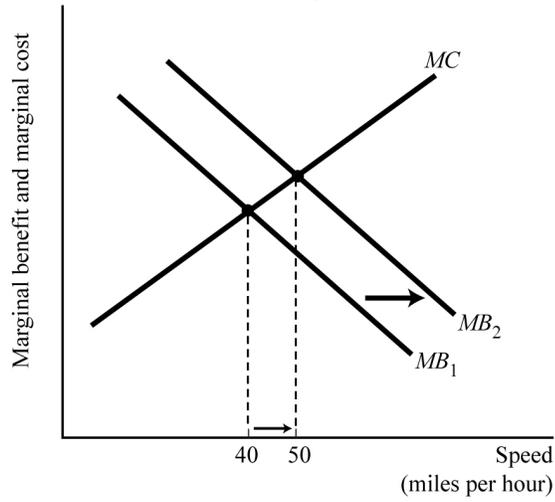
SECTION 2.2: THE MARGINAL PRINCIPLE

- 2.1 Yes, the marginal benefit (\$300) is less than the marginal cost (\$200).
- 2.2 Yes, the marginal benefit (\$135) exceeds the marginal cost (\$125).
- 2.3 Yes, the marginal benefit (\$50 million) exceeds the marginal cost (\$30 million).
- 2.4 marginal, marginal

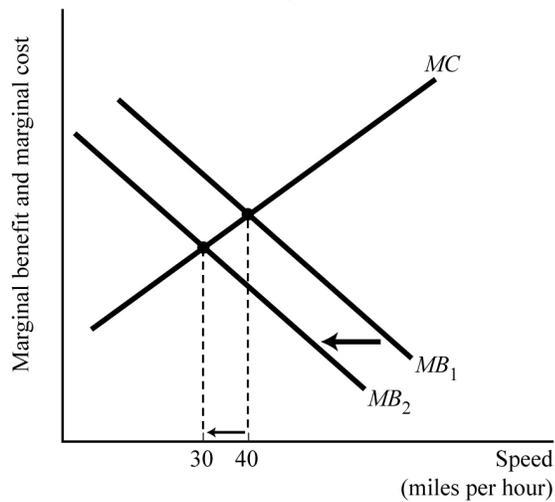
2.5 a. Draw MB and MC curves crossing at 40 mph



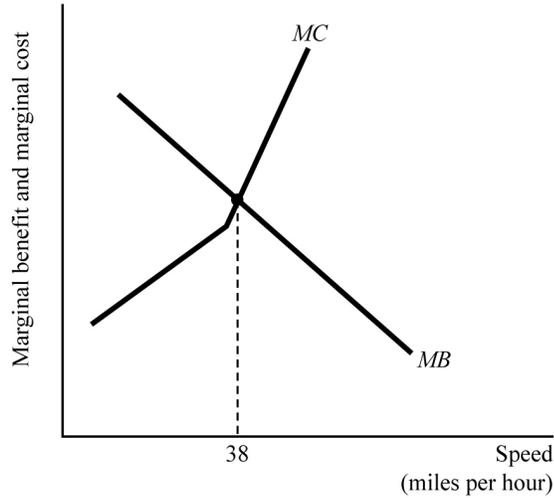
b. Shift MB to the right and show an increase in speed



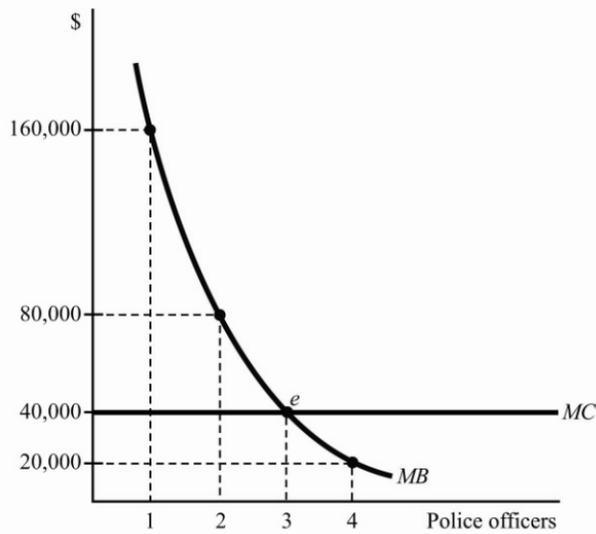
c. Shift MB to the left and show a decrease in speed



- d. The MC curve should have a kink making it steeper to the right of 35mph. This lowers the speed that he drives.

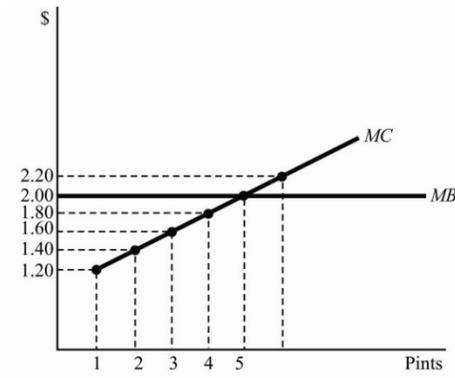


- 2.6 a. It made sense if the marginal revenue of \$3,100 was greater than the marginal costs
 b. cost, less, 3,100
- 2.7 a. yes, marginal revenue 2500 > marginal cost 2000
 b. no, marginal revenue 1500 < marginal cost 2000
- 2.8 Three officers should be hired, since the marginal benefit of the third officer (\$40,000) equals the constant marginal cost of \$40,000, but the marginal benefit of the fourth officer would fall below the constant marginal cost.

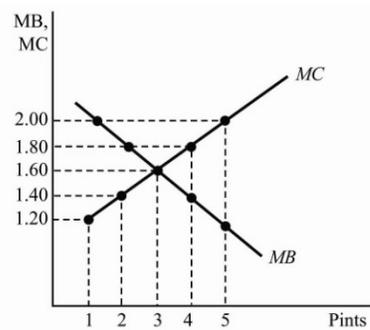


- 2.9 a. 26
 b. yes

2.10 a. Pick 5 pints.



b. Pick 3 pints.



SECTION 2.3: THE PRINCIPLE OF VOLUNTARY EXCHANGE

- 3.1 False
- 3.2 \$15, \$15
- 3.3 Up arrow
- 3.4 softer
- 3.5 a. No, the cost of foregone surgeries exceeds the benefit of clean drains.
b. \$1,150 per hour (= (\$20 per minute x 60 minutes/hour) - \$50 per hour)
- 3.6 a. 50 fish
b. Assign the tribe's least productive fishermen to build the boat. The cost of the boat decreases to 20 fish.
- 3.7 The tree-cutter paid the neighbor to compensate for lost shade

SECTION 2.4: THE PRINCIPLE OF DIMINISHING RETURNS

- 4.1 300
- 4.2 False. Diminishing returns means that output increases at a decreasing rate.
- 4.3 less than, at least
- 4.4 inflexible, flexible
- 4.5 arrow up, arrow down
- 4.6 This is true, so long as there are no limitations on availability of resources other than soil.
- 4.7 a. Yes, because employment of some resources is inflexible within a week.
b. Possibly not, because employment of all resources used in production of memory chips is likely to be flexible over a period of two years.

- 4.8 a. No, because of the principle of diminishing returns
b. Yes
- 4.9 2, 154, 48, 11
3, 172, 36, 11
4, 184, 24, 11
5, 190, 12, 11
6, 193, 6, 11
Ted should work 5 hours, since $MB < MC$ for the sixth hour of work.

SECTION 2.5: THE REAL-NOMINAL PRINCIPLE

- 5.1 \$1 in purchasing power
- 5.2 negative \$20 in purchasing power
- 5.3 down arrow, 3%
- 5.4 \$65,000
- 5.5 No
- 5.6 Inflation, since it lowers the real cost of the debt repayment.
- 5.7 Number of baskets per week: 4.10, 3.05
So the real value of welfare payments decreased
- 5.8 a. 130.488%, 117.287%, 136.497%, 122.469%, 120.753%
b. Wage increases lagged consumer price increase in three of four groups.
c. Real wages fell in every sector except professional services.
- 5.9 a. ----, 5 months
\$5,000, 4 months
\$2,000, 10 months
b. Inflation
- 5.10 a. 55 tunes, \$55, 10%
b. 55 tunes, 66 dollars, 32%

3

Exchange and Markets

Chapter Summary

The concept of comparative advantage and dividing production to minimize opportunity costs shows why individuals gain through specialization and exchange. Here are the main points of the chapter:

- Specialization and exchange form the basis for the existence of markets.
- Specialization increases productivity through the division of labor.
- A system of international specialization and trade is sensible because nations have different opportunity costs of producing goods. These differences give rise to comparative advantages.
- Markets emerge because self-interested people, guided by prices, make decisions about what products to produce, how to produce them, and whom they are produced for.
- The government's roles in a market economy include establishing the rules for exchange, reducing economic uncertainty, and responding to market failures.

Here are the key questions that students should be able to answer by the end of the chapter. These questions appear in the chapter opener of the main text and again near the Applications within the chapter:

1. Does the protection of one domestic industry harm another?
2. What is the role of opportunity cost in the development of markets?
3. Why do markets develop?

Approaching the Material

Continue the approach developed in the first two chapters. Begin the discussion of specialization and exchange on a personal level and then build up to regions and countries. One approach is to ask the students what their lives would be like if they had to do everything themselves—grow food, make clothes, and build their own houses. Teaching is another example of specialization students should be familiar with. As they moved from grammar school to high school to college, the teachers became more specialized and (hopefully) more productive.

Chapter Outline

3.1 Comparative Advantage and Exchange

- A. Specialization and the Gains from Trade

1. Numerical Example: 2 individuals (Fred, Kate), 2 goods (fish per day, coconuts per day). Fred can gather 6 fish per day or 2 coconuts per day; Kate can gather 1 fish per day or 1 coconut per day.

Remind students of the following key principle:



KEY PRINCIPLE: THE PRINCIPLE OF OPPORTUNITY COST

The opportunity cost of something is what you sacrifice to get it.

2. We can calculate the **opportunity cost** of each person's production: the principle of opportunity cost states that the opportunity cost of something is what you sacrifice to get it.
 - a. Fred's opportunity cost of producing 1 fish is 3 coconuts; his opportunity cost of producing 1 coconut is 1/3 of a fish.
 - b. Kate's opportunity cost of producing 1 fish is 1 coconut; her opportunity cost of producing 1 coconut is 1 fish.
3. A **comparative advantage** is the ability of one person or nation to produce a good at a lower opportunity cost than another person or nation. Fred has a comparative advantage in gathering coconuts because he gives up fewer fish ($1/3 < 1$) per coconut gathered; Kate has a comparative advantage in gathering fish because she gives up fewer coconuts per fish gathered ($1 < 3$). (See Table 3.1.)
4. Specialization is beneficial if there are differences in opportunity costs because it increases the production of the group or society. (See Figure 3.1: Most students benefit from "pictures." Remember, you are teaching the "video" generation.)

Teaching Tip

Ask the class what their parents do for a living. In a normal classroom, several students will have parents with very specialized occupations, such as neonatal nurse, police officer, professor, etc. Discuss the different training and skills needed for each type of occupation. Ask students what would happen if a police officer and teacher switched jobs for a day, or an accountant and a bartender.

Another approach would be to examine the medical profession over time. Point out to the students how doctors have become more and more specialized, leading to increased productivity and better overall health. In the 1950s, a person was likely to see the same doctor for a broken arm and a suspicious lump in his or her leg. Today, there are orthopedic specialists as well as oncology specialists.

5. Production and Consumption Possibilities Curves: The production possibilities curve represents the combinations of goods a country can produce using its own resources. If, however, the country specializes in the good or goods it can produce most cheaply (with the lowest opportunity cost), it can trade that good on the world market more cheaply than producing it itself. The consumption possibilities curve is a curve showing the combinations of two goods that can be consumed when a nation specializes in the production of one good and trades with another nation.