

 Cengage

Tenth Edition

Principles of
**MICRO
ECONOMICS**

N. GREGORY MANKIW





Principles of Microeconomics: a Guided Tour

Introduction

- 1 Ten Principles of Economics ————— The study of economics is guided by a few big ideas.
- 2 Thinking Like an Economist ————— Economists view the world as both scientists and policymakers.
- 3 Interdependence and the Gains from Trade ——— The theory of comparative advantage explains how people benefit from economic interdependence.

How Markets Work

- 4 The Market Forces of Supply and Demand ———
 - 5 Elasticity and Its Application —————
 - 6 Supply, Demand, and Government Policies ———
- How does the economy coordinate interdependent economic actors? Through the market forces of supply and demand.
- The tools of supply and demand are put to work to examine the effects of various government policies.

Markets and Welfare

- 7 Consumers, Producers, and the Efficiency of Markets ———
 - 8 Application: The Costs of Taxation —————
 - 9 Application: International Trade —————
- Why is the equilibrium of supply and demand desirable for society as a whole? The concepts of consumer and producer surplus explain the efficiency of markets, the costs of taxation, and the benefits of international trade.

The Economics of the Public Sector

- 10 Externalities —————
 - 11 Public Goods and Common Resources ———
 - 12 The Economics of Healthcare —————
 - 13 The Design of the Tax System —————
- Market outcomes are not always efficient, and governments can sometimes remedy market failure.
- To fund programs, governments raise revenue through their tax systems, which are designed with an eye toward balancing efficiency and equity.



Steven D. Levitt and Stephen J. Dubner

Freakonomics: A Rogue Economist Explores the Hidden Side of Everything

(New York: Morrow, 2005)

Economic principles and clever data analysis applied to a wide range of offbeat topics, including drug dealing, online dating, and sumo wrestling.

Roger Lowenstein

America's Bank: The Epic Struggle to Create the Federal Reserve

(New York: Penguin Press, 2015)

A history of the founding of one of the most important policymaking institutions in the United States.

Annie Lowrey

Give People Money: How a Universal Basic Income Would End Poverty, Revolutionize Work, and Remake the World

(New York: Crown, 2018)

The case for a substantial rethinking of the social safety net.

Burton G. Malkiel

A Random Walk Down Wall Street: The Time-Tested Strategy for Successful Investing

(New York: Norton, 2019)

This introduction to stocks, bonds, and financial economics is not a “get rich quick” book, but it might help you get rich slowly.

Deirdre McCloskey and Art Carden

Leave Me Alone and I'll Make You Rich: How the Bourgeois Deal Enriched the World

(Chicago: University of Chicago Press, 2020)

An overview of economic history that asks why most modern societies have, over the past two centuries, escaped the grinding poverty that previously characterized most of human existence.

John McMillan

Reinventing the Bazaar: A Natural History of Markets

(New York: Norton, 2002)

A deep and nuanced, yet still very readable, analysis of how society can make the best use of market mechanisms.

Branko Milanovic

Capitalism, Alone: The Future of the System that Rules the World

(Cambridge, MA: Harvard University Press, 2019)

A look at how capitalism manifests itself in different ways in different countries.

Sendhil Mullainathan and Eldar Shafir

Scarcity: Why Having Too Little Means So Much

(New York: Times Books, 2013)

An economist and psychologist team up to examine the causes and consequences of our limited cognitive abilities.

Sylvia Nasar

Grand Pursuit: The Story of Economic Genius

(New York: Simon and Schuster, 2011)

A sweeping narrative that tells the story of economic discovery.

William D. Nordhaus

The Spirit of Green: The Economics of Collisions and Contagions in a Crowded World

(Princeton, NJ: Princeton University Press, 2021)

The 2018 Nobel laureate in economics examines how to best address critical externalities, such as the carbon emissions that lead to global climate change.

Roger W. Spencer and David A. Macpherson

Lives of the Laureates

(Cambridge, MA: MIT Press, 2014)

Twenty-three winners of the Nobel Prize in Economics offer autobiographical essays about their lives and work.

Firm Behavior and the Organization of Industry

- | | | | |
|----|------------------------------|---|--|
| 14 | The Costs of Production | } | The theory of the firm sheds light on the decisions that lie behind supply in competitive markets. |
| 15 | Firms in Competitive Markets | | |
| 16 | Monopoly | } | Firms with market power can cause market outcomes to be inefficient. |
| 17 | Monopolistic Competition | | |
| 18 | Oligopoly | | |

The Economics of Labor Markets

- | | | | |
|----|---|---|---|
| 19 | The Markets for the Factors of Production | } | These chapters examine the special features of labor markets, in which most people earn most of their income. |
| 20 | Earnings and Discrimination | | |
| 21 | Income Inequality and Poverty | | |

Topics for Further Study

- | | | | |
|----|-----------------------------------|---|---|
| 22 | The Theory of Consumer Choice | } | Additional topics in microeconomics include household decision making, asymmetric information, political economy, and behavioral economics. |
| 23 | Frontiers of Microeconomics | | |
| 24 | Appendix: How Economists Use Data | | The analysis of data to test theories and estimate parameters is central to the science of economics. |

Tenth Edition

Principles of
MICRO
ECONOMICS

N. GREGORY MANKIW
HARVARD UNIVERSITY



Australia • Brazil • Mexico • Singapore • United Kingdom • United States

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*To Catherine, Nicholas, and Peter,
my other contributions to the next generation*

About the Author



JORDI CABRÉ

N. Gregory Mankiw is the Robert M. Beren Professor of Economics at Harvard University. As a student, he studied economics at Princeton University and MIT. As a teacher, he has taught macroeconomics, microeconomics, statistics, and principles of economics. He even spent one summer long ago as a sailing instructor on Long Beach Island.

Professor Mankiw is a prolific writer and regular participant in academic and policy debates. His work has been published in scholarly journals such as the *American Economic Review*, *Journal of Political Economy*, and *Quarterly Journal of Economics* and in more popular forums, such as the *New York Times* and *The Wall Street Journal*. He is also the author of the best-selling intermediate-level textbook *Macroeconomics* (Worth Publishers).

In addition to his teaching, research, and writing, Professor Mankiw has been a research associate of the National Bureau of Economic Research, a member of the Brookings Panel on Economic Activity, an adviser to the Congressional Budget Office and the Federal Reserve Banks of Boston and New York, a trustee of the Urban Institute and the Economic Club of New York, and a member of the ETS test development committee for the Advanced Placement exam in economics. From 2003 to 2005, he served as chairman of the President's Council of Economic Advisers.



Preface: To the Instructor

During my 20-year career as a student, the course that excited me most was the two-semester sequence on the principles of economics that I took during my first year in college. It is no exaggeration to say that it changed my life.

I had grown up in a family that often discussed politics over the dinner table. The pros and cons of various solutions to society's problems generated fervent debate. But in school, I had been drawn to the sciences. While politics seemed vague, rambling, and subjective, science was analytic, systematic, and objective. Political debate continued without end, but scientific research made progress.

My freshman course on the principles of economics opened my eyes to a new way of thinking. Economics combines the virtues of politics and science. It is, truly, a social science. Its subject matter is society—how people choose to lead their lives and how they interact with one another—but it approaches the subject with the dispassion of a science. By bringing the methods of science to the questions of politics, economics aims to make progress on the challenges that all societies face.

I wrote this book with the hope that I could convey some of the excitement about economics that I felt as a student in my first economics course. Economics is a subject in which a little knowledge goes a long way. (The same cannot be said, for instance, of the study of physics or the Chinese language.) Economists have a unique worldview, much of which can be taught in one or two semesters. My goal in this book is to transmit this way of thinking to the widest possible audience and to convince readers that it illuminates much about their lives and the world around them.

I believe that everyone should study the fundamental ideas that economics has to offer. One purpose of general education is to teach people about the world and thereby make them better citizens. The study of economics, as much as any discipline, serves this goal. Writing an economics textbook is, therefore, a great honor and a great responsibility. It is one way that economists can help promote better government and a more prosperous future. As the great economist Paul Samuelson put it, "I don't care who writes a nation's laws, or crafts its advanced treaties, if I can write its economics textbooks."

What's New in the Tenth Edition?

Economics aims to understand the world in which we live. Most chapters of this book include Case Studies that illustrate how the principles of economics can be applied. In the News boxes offer excerpts from newspapers, magazines, and online news sources to show how economic ideas shed light on current issues facing society. After students finish their first course in economics, they should think about news reports from a new perspective and with greater insight. To keep the study of economics fresh and relevant for each new cohort of students, I update each edition to keep pace with the ever-changing world.

The new applications in this tenth edition are too numerous to list in their entirety, but here is a sample of the topics covered (and the chapters in which they appear):

- Shortages during the coronavirus pandemic renewed the debate over whether it is fair for businesses to increase prices during a crisis. (Chapter 4)
- The future of the ride-share market hinges on the elasticities of supply and demand. (Chapter 5)
- The minimum wage remains a contentious topic. (Chapter 6)
- A carbon tax is a versatile tool to combat global climate change. (Chapter 10)
- Putting a price on road use gets renewed attention as the United States embarks on building new infrastructure. (Chapter 11)
- The pandemic of 2020 taught some lessons about why it's hard to cut wasteful medical spending. (Chapter 12)
- The value-added tax might be a policy for the United States to consider. (Chapter 13)
- The Biden administration looked to expand the scope of antitrust policy. (Chapter 16)
- Amazon found itself in the crosshairs of antitrust enforcers. (Chapter 18)
- Immigration policy creates winners and losers in the labor market. (Chapter 19)
- The forgone schooling during the coronavirus pandemic might have long-lasting effects on earnings. (Chapter 20)
- New research takes a lifetime perspective on measuring inequality. (Chapter 21)
- Robust expansions of the social safety net reduced poverty during the coronavirus pandemic. (Chapter 21)
- People are not good at rationally responding to small-probability events. (Chapter 23)

This edition also includes two new chapters. Chapter 12 examines the economics of healthcare. As this sector's share of the economy has increased, its distinctive features, problems, and policy challenges have become more important for students to understand. Chapter 24 is an optional appendix chapter that discusses how economists use data. In recent years, economic research has grown increasingly empirical, and some instructors want to introduce students to the statistical methods that economists use. Instructors who teach this chapter can move it earlier in the course.

As always, I have carefully gone through every chapter to refine the book's coverage and pedagogy. There are numerous changes, large and small, to ensure that the book is clear, accurate, and up-to-date.

All the changes that I made, and the many others that I considered, were evaluated in light of the benefits of brevity. Like most things studied in economics, a student's time is a scarce resource. I always keep in mind a dictum from the novelist Robertson Davies: "One of the most important things about writing is to boil it down and not bore the hell out of everybody."

How Is This Book Organized?

This book is organized to make economics as student-friendly as possible. What follows is a whirlwind tour, which will, I hope, give instructors some sense of how the pieces fit together.

Introductory Material

Chapter 1, “Ten Principles of Economics,” introduces students to the economist’s view of the world. It previews the big ideas that recur in economics, such as opportunity cost, marginal decision making, the role of incentives, the gains from trade, and the efficiency of market allocations. Throughout the book, I refer regularly to the **Ten Principles of Economics** in Chapter 1 to remind students that these ideas are the foundation for all economics.

Chapter 2, “Thinking Like an Economist,” examines how economists approach their subject. It discusses the role of assumptions in developing a theory and introduces the concept of an economic model. It also explores the role of economists in making policy. This chapter’s appendix offers a brief refresher course on how graphs are used as well as how they can be abused.

Chapter 3, “Interdependence and the Gains from Trade,” presents the theory of comparative advantage. This theory explains why individuals trade with their neighbors and why nations trade with other nations. Much of economics is about how market forces coordinate many individual production and consumption decisions. As a starting point for this analysis, students see in this chapter why specialization, interdependence, and trade can benefit everyone.

The Fundamental Tools of Supply and Demand

The next three chapters introduce the basic tools of supply and demand. Chapter 4, “The Market Forces of Supply and Demand,” develops the supply curve, the demand curve, and the notion of market equilibrium. Chapter 5, “Elasticity and Its Application,” introduces the concept of elasticity and uses it to analyze events in three different markets. Chapter 6, “Supply, Demand, and Government Policies,” uses these tools to examine price controls, such as rent-control and minimum-wage laws, and tax incidence.

Chapter 7, “Consumers, Producers, and the Efficiency of Markets,” extends the analysis of supply and demand using the concepts of consumer surplus and producer surplus. It begins by developing the link between consumers’ willingness to pay and the demand curve and the link between producers’ costs of production and the supply curve. It then shows that the market equilibrium maximizes the sum of the producer and consumer surplus. Thus, students learn early about the efficiency of market allocations.

The next two chapters apply the concepts of producer and consumer surplus to policy questions. Chapter 8, “Application: The Costs of Taxation,” shows why taxation results in deadweight losses and what determines the size of those losses. Chapter 9, “Application: International Trade,” considers who wins and who loses from international trade and presents the debate over protectionist trade policies.

More Microeconomics

Having examined why market allocations are often desirable, the book then considers how the government can sometimes improve on them. Chapter 10, “Externalities,” explains how external effects such as pollution can render market outcomes inefficient and discusses the possible public and private solutions to those inefficiencies. Chapter 11, “Public Goods and Common Resources,” considers the problems that arise when goods, such as national defense, have no market price. Chapter 12, “The Economics of Healthcare,” examines the distinctive features, problems, and policy challenges of an increasingly important sector of the economy. Chapter 13, “The Design of the Tax System,” describes how the government raises the revenue

necessary to pay for public goods. It presents some institutional background about the U.S. tax system and then discusses how the goals of efficiency and equity come into play when designing a tax system.

The next five chapters examine firm behavior and industrial organization. Chapter 14, “The Costs of Production,” discusses what to include in a firm’s costs, and it introduces cost curves. Chapter 15, “Firms in Competitive Markets,” analyzes the behavior of price-taking firms and derives the market supply curve. Chapter 16, “Monopoly,” discusses the behavior of a firm that is the sole seller in its market. It examines the inefficiency of monopoly pricing, the possible policy responses, and the attempts by monopolies to price discriminate. Chapter 17, “Monopolistic Competition,” looks at behavior in a market in which many sellers offer similar but differentiated products. It also discusses the debate over the effects of advertising. Chapter 18, “Oligopoly,” covers markets in which there are only a few sellers, using the prisoners’ dilemma as the model for examining strategic interaction.

The next three chapters present issues related to labor markets. Chapter 19, “The Markets for the Factors of Production,” emphasizes the link between factor prices and marginal productivity. Chapter 20, “Earnings and Discrimination,” discusses the determinants of equilibrium wages, including compensating differentials, human capital, and discrimination. Chapter 21, “Income Inequality and Poverty,” examines the degree of inequality in U.S. society, alternative views about the government’s role in changing the distribution of income, and various policies aimed at helping members of society experiencing poverty.

The next three chapters present optional material. Chapter 22, “The Theory of Consumer Choice,” analyzes individual decision making using budget constraints and indifference curves. Chapter 23, “Frontiers of Microeconomics,” introduces the topics of asymmetric information, political economy, and behavioral economics. Chapter 24, “Appendix: How Economists Use Data,” introduces students to the statistical methods that economists use to test and apply their theories. Some instructors may skip all or some of this material, but these chapters are useful in motivating and preparing students for future courses in microeconomics. Instructors who cover these topics may assign these chapters earlier than they are presented in the book, and I have written them to facilitate this flexibility.

Learning Tools

The purpose of this book is to help students learn the fundamental lessons of economics and to show how they can apply these lessons to their lives and the world in which they live. Toward that end, I have used various learning tools that recur throughout the book.

Case Studies

Economic theory is useful and interesting only if it can be applied to understanding actual events and policies. This book, therefore, contains numerous case studies that apply the theory that has just been developed.

In the News Boxes

One benefit that students gain from studying economics is a new perspective and greater understanding of news from around the world. To highlight this benefit, I have included excerpts from many newspaper and magazine articles, some of which are

opinion columns written by prominent economists. These articles, together with my brief introductions, show how basic economic theory can be applied. Most of these boxes are new to this edition. Each news article ends with “Questions to Discuss,” which can be used to start a dialogue in the classroom.

FYI Boxes

These boxes provide additional material “for your information.” Some of them offer a glimpse into the history of economic thought. Others clarify technical issues. Still others discuss supplementary topics that instructors might choose to either discuss or skip in their lectures.

Ask the Experts Boxes

This feature summarizes results from the IGM Economic Experts Panel, an ongoing survey of several dozen prominent economists. Every few weeks, these experts are offered a statement and then asked whether they agree with it, disagree with it, or are uncertain about it. The survey results appear in the chapters near the coverage of the relevant topic. They give students a sense of when economists are united, when they are divided, and when they just don’t know what to think.

Definitions of Key Concepts

When key concepts are introduced in the chapter, they are presented in **blue** typeface. In addition, their definitions are placed in the margins. This treatment should aid students in learning and reviewing the material.

Quick Quizzes

After each major section in a chapter, students are offered a brief multiple-choice Quick Quiz to check their comprehension of what they have just learned. If students cannot readily answer these quizzes, they should stop and review the material before continuing. The answers to all Quick Quizzes are available at the end of each chapter.

Chapter in a Nutshell

Each chapter concludes with a brief summary that reminds students of the most important lessons they have learned. Later in their study, it offers an efficient way to review for exams.

List of Key Concepts

A list of key concepts at the end of each chapter offers students a way to test their understanding of the new terms that have been introduced. Page references are included, so students can review the terms they do not understand.

Questions for Review

Located at the end of each chapter, questions for review cover the chapter’s primary lessons. Students can use these questions to check their comprehension and prepare for exams.

Problems and Applications

Each chapter also contains a variety of problems and applications that ask students to apply the material they have learned. Some instructors may use these questions for homework assignments. Others may use them as a starting point for classroom discussions.

Alternative Versions of the Book

The book you are now holding is one of five versions of this text that are available for introducing students to economics. Cengage and I offer this menu of books because instructors differ in how much time they have and what topics they choose to cover. Here is a brief description of each:

- *Principles of Economics*. This complete version of the book contains all 38 chapters. It is designed for two-semester introductory courses that cover both microeconomics and macroeconomics.
- *Principles of Microeconomics*. This version contains 24 chapters and is designed for one-semester courses in introductory microeconomics.
- *Principles of Macroeconomics*. This version contains 24 chapters and is designed for one-semester courses in introductory macroeconomics. It contains a full development of the theory of supply and demand.
- *Brief Principles of Macroeconomics*. This shortened macro version of 19 chapters contains only one chapter on the basics of supply and demand. It is designed for instructors who want to jump to the core topics of macroeconomics more quickly.
- *Essentials of Economics*. This version of the book contains 24 chapters. It is designed for one-semester survey courses that cover the basics of both microeconomics and macroeconomics.

Table 1 shows which chapters are included in each book. Instructors who want more information about these alternative versions should contact their local Cengage representative.

Supplements

Cengage offers various supplements for instructors and students who use this book. These resources make teaching the principles of economics easy for the instructor and learning them easy for the student. David R. Hakes of the University of Northern Iowa, a dedicated teacher and economist, supervised the development of the supplements for this edition. A complete list of available supplements follows this Preface.

Translations and Adaptations

I am delighted that versions of this book are (or will soon be) available in many of the world's languages. Currently scheduled translations include Azeri, Chinese (in both standard and simplified characters), Croatian, Czech, Dutch, French, Georgian, German, Greek, Indonesian, Italian, Japanese, Korean, Macedonian, Montenegrin, Portuguese, Romanian, Russian, Serbian, and Spanish. In addition, adaptations of the book for Australian, Canadian, European, and New Zealand students are also available. Instructors who would like more information about these books should contact Cengage.

Acknowledgments

In writing this book, I benefited from the input of many talented people. Indeed, the list of people who have contributed to this project is so long, and their contributions so valuable, that it seems an injustice that only a single name appears on the cover.

Table 1**The Five Versions of This Book**

	Principles of Economics	Principles of Microeconomics	Principles of Macroeconomics	Brief Principles of Macroeconomics	Essentials of Economics
Ten Principles of Economics	1	1	1	1	1
Thinking Like an Economist	2	2	2	2	2
Interdependence and the Gains from Trade	3	3	3	3	3
The Market Forces of Supply and Demand	4	4	4	4	4
Elasticity and Its Application	5	5	5		5
Supply, Demand, and Government Policies	6	6	6		6
Consumers, Producers, and the Efficiency of Markets	7	7	7		7
Application: The Costs of Taxation	8	8	8		8
Application: International Trade	9	9	9		9
Externalities	10	10			10
Public Goods and Common Resources	11	11			11
The Economics of Healthcare	12	12			
The Design of the Tax System	13	13			
The Costs of Production	14	14			12
Firms in Competitive Markets	15	15			13
Monopoly	16	16			14
Monopolistic Competition	17	17			
Oligopoly	18	18			
The Markets for the Factors of Production	19	19			
Earnings and Discrimination	20	20			
Income Inequality and Poverty	21	21			
The Theory of Consumer Choice	22	22			
Frontiers of Microeconomics	23	23			
Measuring a Nation's Income	24		10	5	15
Measuring the Cost of Living	25		11	6	16
Production and Growth	26		12	7	17
Saving, Investment, and the Financial System	27		13	8	18
The Basic Tools of Finance	28		14	9	19
Unemployment	29		15	10	20
The Monetary System	30		16	11	21
Money Growth and Inflation	31		17	12	22
Open-Economy Macroeconomics: Basic Concepts	32		18	13	
A Macroeconomic Theory of the Open Economy	33		19	14	
Aggregate Demand and Aggregate Supply	34		20	15	23
The Influence of Monetary and Fiscal Policy on Aggregate Demand	35		21	16	24
The Short-Run Trade-off between Inflation and Unemployment	36		22	17	
Six Debates over Macroeconomic Policy	37		23	18	
Appendix: How Economists Use Data	38	24	24	19	

Let me begin with my colleagues in the economics profession. The many editions of this text and its supplemental materials have benefited enormously from their input. In reviews and surveys, they have offered suggestions, identified challenges, and shared ideas from their own classroom experience. I am indebted to them for the perspectives they have brought to the text. Unfortunately, the list has become too long to thank those who contributed to previous editions, even though students reading the current edition are still benefiting from their insights.

Most important in this process has been David Hakes (University of Northern Iowa). David has served as a reliable sounding board for ideas and a hardworking partner with me in putting together the superb package of supplements.

A special thanks to my friend Jeff Sommer. For many years, Jeff was my editor at the *New York Times*. For this edition, he graciously read through the entire book, offering numerous suggestions for improvement. I am deeply grateful for his input.

The publishing team who worked on the book improved it tremendously. Jane Tufts, developmental editor, provided truly spectacular editing—as she always does. Joe Sabatino, economics Product Director, and Christopher Rader, Senior Product Manager, did a splendid job of overseeing the many people involved in such a large project. Colleen Farmer, Allison Janneck, and Anita Verma, Senior Content Managers, were crucial in managing the whole project and putting together an excellent team to revise the supplements and, with Pradhiba Kannaiyan, project manager at MPS Limited, had the patience and dedication necessary to turn my manuscript into this book. Erin Griffin, Senior Designer, gave this book its clean, friendly look and designed the wonderful cover. Tiffany Lee, copyeditor, refined my prose, and Vikas Makkar, indexer, prepared a careful and thorough index. John Carey, Executive Marketing Manager, worked long hours getting the word out to potential users of this book. The rest of the Cengage team has, as always, been consistently professional, enthusiastic, and dedicated.

We have a top team of veterans who have worked across multiple editions producing the supplements that accompany this book. Working with those at Cengage, the following have been relentless in making sure that the suite of ancillary materials is unmatched in both quantity and quality. No other text comes close.

PowerPoint: Andreea Chiritescu (Eastern Illinois University)

Test Bank: Shannon Aucoin, Eugenia Belova, and Alex Lewis (in-house Subject Matter Experts)

Instructor manual: David Hakes (University of Northern Iowa)

I am also grateful to Sarah Lao and Nathan Sun, two star undergraduates at Harvard, who helped me check the page proofs for this edition.

As always, I must thank my “in-house” editor Deborah Mankiw. As the first reader of most things I write, she continued to offer just the right mix of criticism and encouragement.

Finally, I should mention my three children, Catherine, Nicholas, and Peter. Their contribution to this book was putting up with a father spending too many hours in his study. The four of us have much in common—not least of which is our love of ice cream (which becomes apparent in Chapter 4).

N. Gregory Mankiw
May 2022



Brief Contents

Part I Introduction 1

- 1 Ten Principles of Economics 1
- 2 Thinking Like an Economist 17
- 3 Interdependence and the Gains from Trade 45

Part II How Markets Work 61

- 4 The Market Forces of Supply and Demand 61
- 5 Elasticity and Its Application 87
- 6 Supply, Demand, and Government Policies 111

Part III Markets and Welfare 133

- 7 Consumers, Producers, and the Efficiency of Markets 133
- 8 Application: The Costs of Taxation 153
- 9 Application: International Trade 169

Part IV The Economics of the Public Sector 189

- 10 Externalities 189
- 11 Public Goods and Common Resources 211
- 12 The Economics of Healthcare 227
- 13 The Design of the Tax System 247

Part V Firm Behavior and the Organization of Industry 267

- 14 The Costs of Production 267
- 15 Firms in Competitive Markets 287
- 16 Monopoly 311
- 17 Monopolistic Competition 341
- 18 Oligopoly 359

Part VI The Economics of Labor Markets 381

- 19 The Markets for the Factors of Production 381
- 20 Earnings and Discrimination 403
- 21 Income Inequality and Poverty 421

Part VII Topics for Further Study 443

- 22 The Theory of Consumer Choice 443
- 23 Frontiers of Microeconomics 471
- 24 Appendix: How Economists Use Data 491

Contents



Preface: To the Instructor v

Part I Introduction 1

Chapter 1

Ten Principles of Economics 1

1-1 How People Make Decisions 2

- 1-1a Principle 1: People Face Trade-Offs 2
- 1-1b Principle 2: The Cost of Something Is What You Give Up to Get It 3
- 1-1c Principle 3: Rational People Think at the Margin 4
- 1-1d Principle 4: People Respond to Incentives 5

1-2 How People Interact 6

- 1-2a Principle 5: Trade Can Make Everyone Better Off 6
- 1-2b Principle 6: Markets Are Usually a Good Way to Organize Economic Activity 7
 - FYI:** Adam Smith and the Invisible Hand 8
 - Case Study:** Adam Smith Would Have Loved Uber 8
- 1-2c Principle 7: Governments Can Sometimes Improve Market Outcomes 9

1-3 How the Economy as a Whole Works 11

- 1-3a Principle 8: A Country's Standard of Living Depends on Its Ability to Produce Goods and Services 11
- 1-3b Principle 9: Prices Rise When the Government Prints Too Much Money 11
- 1-3c Principle 10: Society Faces a Short-Run Trade-Off between Inflation and Unemployment 12

1-4 Conclusion 13

Chapter in a Nutshell 14

Key Concepts 14

Questions for Review 14

Problems and Applications 14

Quick Quiz Answers 15

Chapter 2

Thinking Like an Economist 17

2-1 The Economist as Scientist 18

- 2-1a The Scientific Method: Observation, Theory, and More Observation 18

2-1b The Role of Assumptions 19

2-1c Economic Models 19

2-1d Our First Model: The Circular-Flow Diagram 20

2-1e Our Second Model: The Production

Possibilities Frontier 22

2-1f Microeconomics and Macroeconomics 24

2-2 The Economist as Policy Adviser 25

In the News: Why Tech Companies Hire Economists 26

2-2a Positive versus Normative Analysis 26

2-2b Economists in Washington 28

2-2c Why Economists' Advice Is Often Not Followed 29

2-3 Why Economists Disagree 30

2-3a Differences in Scientific Judgments 30

2-3b Differences in Values 30

2-3c Perception versus Reality 31

Ask the Experts: Ticket Resale 31

2-4 Let's Get Going 32

Chapter in a Nutshell 32

Key Concepts 33

Questions for Review 33

Problems and Applications 33

Quick Quiz Answers 34

APPENDIX Graphing: A Brief Review 35

Graphs of a Single Variable 35

Graphs of Two Variables: The Coordinate System 36

Curves in the Coordinate System 37

Slope 39

Cause and Effect 41

Chapter 3

Interdependence and the Gains from Trade 45

3-1 A Parable for the Modern Economy 46

3-1a Production Possibilities 46

3-1b Specialization and Trade 48

3-2 Comparative Advantage: The Driving Force of Specialization 50

3-2a Absolute Advantage 50

3-2b Opportunity Cost and Comparative Advantage 50

3-2c Comparative Advantage and Trade 52

3-2d The Price of the Trade 52

FYI: The Legacy of Adam Smith and David Ricardo 53

3-3 Applications of Comparative Advantage 53

- 3-3a Should Naomi Osaka Mow Her Own Lawn? 54
- 3-3b Should the United States Trade with Other Countries? 54

3-4 Conclusion 55

Ask the Experts: Trade between China and the United States 55

In the News: Economics within a Marriage 56

Chapter in a Nutshell 56

Key Concepts 57

Questions for Review 57

Problems and Applications 58

Quick Quiz Answers 59

Part II How Markets Work 61

Chapter 4

The Market Forces of Supply and Demand 61

4-1 Markets and Competition 62

4-1a What Is a Market? 62

4-1b What Is Competition? 62

4-2 Demand 63

4-2a The Demand Curve: The Relationship between Price and Quantity Demanded 63

4-2b Market Demand versus Individual Demand 64

4-2c Shifts in the Demand Curve 65

Case Study: Two Ways to Reduce Smoking 68

4-3 Supply 69

4-3a The Supply Curve: The Relationship between Price and Quantity Supplied 69

4-3b Market Supply versus Individual Supply 70

4-3c Shifts in the Supply Curve 70

4-4 Supply and Demand Together 73

4-4a Equilibrium 73

4-4b Three Steps to Analyzing Changes in Equilibrium 75

In the News: Price Increases after Disasters 80

4-5 Conclusion: How Prices Allocate Resources 82

Ask the Experts: Price Gouging 82

Chapter in a Nutshell 83

Key Concepts 83

Questions for Review 84

Problems and Applications 84

Quick Quiz Answers 85

Chapter 5

Elasticity and Its Application 87

5-1 The Elasticity of Demand 88

5-1a The Price Elasticity of Demand and Its Determinants 88

5-1b The Price Elasticity of Demand, with Numbers 89

5-1c The Midpoint Method: A Better Way to Calculate Percentage Changes and Elasticities 89

5-1d The Variety of Demand Curves 90

5-1e Total Revenue and the Price Elasticity of Demand 91

FYI: A Few Elasticities from the Real World 91

5-1f Elasticity and Total Revenue along a Linear Demand Curve 94

5-1g Other Demand Elasticities 96

5-2 The Elasticity of Supply 97

5-2a The Price Elasticity of Supply and Its Determinants 97

5-2b The Price Elasticity of Supply, with Numbers 98

5-2c The Variety of Supply Curves 98

5-3 Three Applications of Supply, Demand, and Elasticity 100

5-3a Can Good News for Farming Be Bad News for Farmers? 101

5-3b Why Has OPEC Failed to Keep the Price of Oil High? 103

5-3c Does Drug Interdiction Increase or Decrease Drug-Related Crime? 104

In the News: Elasticity of Supply and Demand in the Ride-share Market 106

5-4 Conclusion 108

Chapter in a Nutshell 108

Key Concepts 108

Questions for Review 108

Problems and Applications 109

Quick Quiz Answers 110

Chapter 6

Supply, Demand, and Government Policies 111

6-1 The Surprising Effects of Price Controls 112

6-1a How Price Ceilings Affect Market Outcomes 112

Case Study: How to Create Long Lines at the Gas Pump 114

Case Study: Why Rent Control Causes Housing Shortages, Especially in the Long Run 115

Ask the Experts: Rent Control 116

6-1b How Price Floors Affect Market Outcomes 116

Case Study: Controversies over the Minimum Wage 118

Ask the Experts: The Minimum Wage 120

6-1c Evaluating Price Controls 120

6-2 The Surprising Study of Tax Incidence 121

6-2a How Taxes on Sellers Affect Market Outcomes 121

In the News: Should the Minimum Wage Be \$15 an Hour? 122

6-2b How Taxes on Buyers Affect Market Outcomes 124

Case Study: Can Congress Distribute the Burden of a Payroll Tax? 126

6-2c Elasticity and Tax Incidence 127

Case Study: Who Pays the Luxury Tax? 128

6-3 Conclusion 129

Chapter in a Nutshell	129
Key Concepts	130
Questions for Review	130
Problems and Applications	130
Quick Quiz Answers	131

Part III Markets and Welfare 133

Chapter 7

Consumers, Producers, and the Efficiency of Markets 133

7-1 Consumer Surplus	134
7-1a Willingness to Pay	134
7-1b Using the Demand Curve to Measure Consumer Surplus	135
7-1c How a Lower Price Raises Consumer Surplus	137
7-1d What Does Consumer Surplus Measure?	138
7-2 Producer Surplus	139
7-2a Cost and the Willingness to Sell	139
7-2b Using the Supply Curve to Measure Producer Surplus	140
7-2c How a Higher Price Raises Producer Surplus	141
7-3 Market Efficiency	143
7-3a Benevolent Social Planners	143
7-3b Evaluating the Market Equilibrium	144
Ask the Experts: Supplying Kidneys	146
Case Study: Should There Be a Market for Organs?	146
7-4 Conclusion: Market Efficiency and Market Failure	147
In the News: How Ticket Resellers Help Allocate Scarce Resources	148
Chapter in a Nutshell	150
Key Concepts	150
Questions for Review	150
Problems and Applications	150
Quick Quiz Answers	152

Chapter 8

Application: The Costs of Taxation 153

8-1 The Deadweight Loss of Taxation	154
8-1a How a Tax Affects Market Participants	154
8-1b Deadweight Losses and the Gains from Trade	157
8-2 The Determinants of the Deadweight Loss	158
Case Study: The Deadweight Loss Debate	160
8-3 Deadweight Loss and Tax Revenue as Taxes Vary	162
Case Study: The Laffer Curve and Supply-Side Economics	163
Ask the Experts: The Laffer Curve	164
8-4 Conclusion	165
Chapter in a Nutshell	165
Key Concept	166

Questions for Review	166
Problems and Applications	166
Quick Quiz Answers	167

Chapter 9

Application: International Trade 169

9-1 The Determinants of Trade	170
9-1a The Equilibrium without Trade	170
9-1b The World Price and Comparative Advantage	171
9-2 The Winners and Losers from Trade	171
9-2a The Gains and Losses of an Exporting Country	172
9-2b The Gains and Losses of an Importing Country	173
9-2c The Effects of a Tariff	175
FYI: Import Quotas: Another Way to Restrict Trade	177
9-2d The Lessons for Trade Policy	177
9-2e Other Benefits of International Trade	178
9-3 The Arguments for Restricting Trade	179
9-3a The Jobs Argument	180
9-3b The National-Security Argument	180
9-3c The Infant-Industry Argument	180
9-3d The Unfair-Competition Argument	181
9-3e The Protection-as-a-Bargaining-Chip Argument	181
Case Study: Trade Agreements and the World Trade Organization	181
Ask the Experts: Trade Deals and Tariffs	181
In the News: Trade as a Tool for Economic Development	182
9-4 Conclusion	184
Chapter in a Nutshell	185
Key Concepts	185
Questions for Review	185
Problems and Applications	186
Quick Quiz Answers	187

Part IV The Economics of the Public Sector 189

Chapter 10

Externalities 189

10-1 Externalities and Market Inefficiency	191
10-1a Welfare Economics: A Recap	191
10-1b Negative Externalities	192
10-1c Positive Externalities	193
Case Study: Technology Spillovers, Industrial Policy, and Patent Protection	194
10-2 Public Policies toward Externalities	195
10-2a Command-and-Control Policies: Regulation	195
Ask the Experts: Covid Vaccines	196
10-2b Market-Based Policy 1: Corrective Taxes and Subsidies	196
Case Study: Why Is Gasoline Taxed So Heavily?	197
10-2c Market-Based Policy 2: Tradable Pollution Permits	199
10-2d Objections to the Economic Analysis of Pollution	201

Case Study: Climate Change and Carbon Taxes 201
Ask the Experts: Carbon Taxes 202

10-3 Private Solutions to Externalities 203
 10-3a The Types of Private Solutions 203
 10-3b The Coase Theorem 204
 10-3c Why Private Solutions Do Not Always Work 205
In the News: The Coase Theorem in Action 206

10-4 Conclusion 206
 Chapter in a Nutshell 207
 Key Concepts 208
 Questions for Review 208
 Problems and Applications 208
 Quick Quiz Answers 209

Chapter 11

Public Goods and Common Resources 211

11-1 The Different Kinds of Goods 212

11-2 Public Goods 214
 11-2a The Free-Rider Problem 214
 11-2b Some Important Public Goods 214
Case Study: Are Lighthouses Public Goods? 216
 11-2c The Difficult Job of Cost-Benefit Analysis 217
Case Study: How Much Is a Life Worth? 217

11-3 Common Resources 218
 11-3a The Tragedy of the Commons 218
 11-3b Some Important Common Resources 219
Ask the Experts: Congestion Pricing 220
Case Study: Why the Cow Is Not Extinct 221
In the News: Road Pricing 222

11-4 Conclusion: Property Rights and Government Action 222
 Chapter in a Nutshell 224
 Key Concepts 224
 Questions for Review 224
 Problems and Applications 224
 Quick Quiz Answers 226

Chapter 12

The Economics of Healthcare 227

12-1 The Special Characteristics of the Market for Healthcare 228
 12-1a Externalities Galore 229
Case Study: Vaccine Hesitancy 230
 12-1b The Difficulty of Monitoring Quality 230
 12-1c The Insurance Market and Its Imperfections 231
 12-1d Healthcare as a Right 233
 12-1e The Rules Governing the Healthcare Marketplace 233

12-2 Key Facts about the U.S. Healthcare System 235
 12-2a People Are Living Longer 235
 12-2b Healthcare Spending Is a Growing Share of the Economy 236

Ask the Experts: Baumol's Cost Disease 238
 12-2c Healthcare Spending Is Especially High in the United States 238
 12-2d Out-of-Pocket Spending Is a Declining Share of Health Expenditure 239
Ask the Experts: Cadillac Tax 240

12-3 Conclusion: The Policy Debate over Healthcare 241
In the News: Lessons from the Pandemic of 2020 242
 Chapter in a Nutshell 244
 Key Concepts 244
 Questions for Review 244
 Problems and Applications 244
 Quick Quiz Answers 245

Chapter 13

The Design of the Tax System 247

13-1 U.S. Taxation: The Big Picture 248
 13-1a Taxes Collected by the Federal Government 249
 13-1b Taxes Collected by State and Local Governments 251

13-2 Taxes and Efficiency 252
 13-2a Deadweight Losses 253
Case Study: Should Income or Consumption Be Taxed? 253
 13-2b Administrative Burden 254
 13-2c Marginal Tax Rates versus Average Tax Rates 255
 13-2d Lump-Sum Taxes 255
Ask the Experts: Top Marginal Tax Rates 255

13-3 Taxes and Equity 256
 13-3a The Benefits Principle 257
 13-3b The Ability-to-Pay Principle 257
Case Study: How the Tax Burden Is Distributed 258
 13-3c Tax Incidence and Tax Equity 260
Case Study: Who Pays the Corporate Income Tax? 260

13-4 Conclusion: The Trade-Off between Equity and Efficiency 261
In the News: The Value-Added Tax 262
 Chapter in a Nutshell 264
 Key Concepts 264
 Questions for Review 264
 Problems and Applications 264
 Quick Quiz Answers 265

Part V Firm Behavior and the Organization of Industry 267

Chapter 14

The Costs of Production 267

14-1 What Are Costs? 268
 14-1a Total Revenue, Total Cost, and Profit 268
 14-1b Why Opportunity Costs Matter 268
 14-1c The Cost of Capital Is an Opportunity Cost 269
 14-1d Economists and Accountants Measure Profit Differently 269

14-2 Production and Costs	271
14-2a The Production Function	271
14-2b From the Production Function to the Total-Cost Curve	273
14-3 The Many Measures of Cost	274
14-3a Fixed and Variable Costs	275
14-3b Average and Marginal Cost	275
14-3c Cost Curves and Their Shapes	276
14-3d Typical Cost Curves	278
14-4 Costs in the Short Run and in the Long Run	280
14-4a The Relationship between Short-Run and Long-Run Average Total Cost	280
14-4b Economies and Diseconomies of Scale	281
FYI: Lessons from a Pin Factory	281
14-5 Conclusion	282
Chapter in a Nutshell	283
Key Concepts	283
Questions for Review	283
Problems and Applications	284
Quick Quiz Answers	285

Chapter 15

Firms in Competitive Markets 287

15-1 What Is a Competitive Market?	288
15-1a The Meaning of Competition	288
15-1b The Revenue of a Competitive Firm	288
15-2 Profit Maximization and the Competitive Firm's Supply Curve	290
15-2a A Simple Example of Profit Maximization	290
15-2b The Marginal-Cost Curve and the Firm's Supply Decision	292
15-2c The Firm's Short-Run Decision to Shut Down	294
15-2d Spilt Milk and Other Sunk Costs	295
Case Study: Near-Empty Restaurants and Off-Season Miniature Golf	296
15-2e The Firm's Long-Run Decision to Exit or Enter a Market	297
15-2f Measuring Profit in Our Graph for the Competitive Firm	297
15-2g A Brief Recap	299
15-3 The Supply Curve in a Competitive Market	300
15-3a The Short Run: Market Supply with a Fixed Number of Firms	300
15-3b The Long Run: Market Supply with Entry and Exit	300
15-3c Why Do Competitive Firms Stay in Business If They Make Zero Profit?	302
15-3d A Shift in Demand in the Short Run and Long Run	303
15-3e Why the Long-Run Supply Curve Might Slope Upward	303
15-4 Conclusion: Behind the Supply Curve	305
Chapter in a Nutshell	306
Key Concepts	306
Questions for Review	306

Problems and Applications	307
Quick Quiz Answers	309

Chapter 16

Monopoly 311

16-1 Why Monopolies Arise	312
16-1a Monopoly Resources	313
16-1b Government-Created Monopolies	313
16-1c Natural Monopolies	314
16-2 How Monopolies Make Production and Pricing Decisions	315
16-2a Monopoly versus Competition	315
16-2b A Monopoly's Revenue	316
16-2c Profit Maximization	318
FYI: Why a Monopoly Does Not Have a Supply Curve	320
16-2d A Monopoly's Profit	320
Case Study: Monopoly Drugs versus Generic Drugs	321
16-3 The Welfare Cost of Monopolies	323
16-3a The Deadweight Loss	323
16-3b The Monopoly's Profit: A Social Cost?	325
16-4 Price Discrimination	326
16-4a A Parable about Pricing	326
16-4b The Moral of the Story	327
16-4c The Analytics of Price Discrimination	328
16-4d Examples of Price Discrimination	329
16-5 Public Policy toward Monopolies	330
16-5a Increasing Competition with Antitrust Laws	331
16-5b Regulation	331
Ask the Experts: Mergers and Competition	332
16-5c Public Ownership	333
16-5d Above All, Do No Harm	333
In the News: Will the Biden Administration Expand the Scope of Antitrust Policy?	334
16-6 Conclusion: The Prevalence of Monopolies	334
Chapter in a Nutshell	336
Key Concepts	337
Questions for Review	337
Problems and Applications	337
Quick Quiz Answers	340

Chapter 17

Monopolistic Competition 341

17-1 Between Monopoly and Perfect Competition	342
17-2 Competition with Differentiated Products	344
17-2a The Monopolistically Competitive Firm in the Short Run	344
17-2b The Long-Run Equilibrium	346
17-2c Monopolistic versus Perfect Competition	347
17-2d Monopolistic Competition and the Welfare of Society	348
17-3 Advertising	350
17-3a The Debate over Advertising	350

- Case Study:** How Advertising Affects Prices 351
- 17-3b Advertising as a Signal of Quality 352
- 17-3c Brand Names 353

- 17-4 Conclusion 354
- Chapter in a Nutshell 355
- Key Concepts 356
- Questions for Review 356
- Problems and Applications 356
- Quick Quiz Answers 357

Chapter 18

Oligopoly 359

- 18-1 Markets with Only a Few Sellers 360
 - 18-1a A Duopoly Example 360
 - 18-1b Competition, Monopolies, and Cartels 360
 - 18-1c The Equilibrium for an Oligopoly 362
 - 18-1d How the Size of an Oligopoly Affects the Market Outcome 363
 - Ask the Experts:** Market Share and Market Power 364
- 18-2 The Economics of Cooperation 364
 - 18-2a The Prisoners' Dilemma 365
 - 18-2b Oligopolies as a Prisoners' Dilemma 366
 - Case Study:** OPEC and the World Oil Market 367
 - 18-2c Other Examples of the Prisoners' Dilemma 368
 - 18-2d The Prisoners' Dilemma and the Welfare of Society 369
 - 18-2e Why People Sometimes Cooperate 370
 - Case Study:** The Prisoners' Dilemma Tournament 370
- 18-3 Public Policy toward Oligopolies 371
 - 18-3a Restraint of Trade and the Antitrust Laws 371
 - Case Study:** An Illegal Phone Call 372
 - 18-3b Controversies over Antitrust Policy 373
 - Ask the Experts:** Antitrust in the Digital Economy 374
 - Case Study:** The Microsoft Case 375
 - In the News:** Amazon in the Crosshairs 376
- 18-4 Conclusion 377
- Chapter in a Nutshell 378
- Key Concepts 378
- Questions for Review 378
- Problems and Applications 378
- Quick Quiz Answers 380

Part VI The Economics of Labor Markets 381

Chapter 19

The Markets for the Factors of Production 381

- 19-1 The Demand for Labor 382
 - 19-1a The Competitive, Profit-Maximizing Firm 382
 - 19-1b The Production Function and the Marginal Product of Labor 383

- 19-1c The Value of the Marginal Product and the Demand for Labor 385
- 19-1d What Causes the Labor-Demand Curve to Shift? 386
- FYI:** Input Demand and Output Supply: Two Sides of the Same Coin 387

- 19-2 The Supply of Labor 388
 - 19-2a The Trade-Off between Work and Leisure 388
 - 19-2b What Causes the Labor-Supply Curve to Shift? 389
 - Ask the Experts:** Immigration 390

- 19-3 Equilibrium in the Labor Market 390
 - 19-3a Shifts in Labor Supply 390
 - Case Study:** The Immigration Debate 392
 - 19-3b Shifts in Labor Demand 393
 - Case Study:** Productivity and Wages 393

- 19-4 The Other Factors of Production: Land and Capital 395
 - 19-4a Equilibrium in the Markets for Land and Capital 395
 - FYI:** What Is Capital Income? 396
 - 19-4b Linkages among the Factors of Production 396
 - Case Study:** The Economics of the Black Death 397

- 19-5 Conclusion 398
- Chapter in a Nutshell 398
- Key Concepts 399
- Questions for Review 399
- Problems and Applications 399
- Quick Quiz Answers 401

Chapter 20

Earnings and Discrimination 403

- 20-1 What Determines Wages? 404
 - 20-1a Compensating Differentials 404
 - 20-1b Human Capital 404
 - Case Study:** The Increasing Value of Skills 405
 - Ask the Experts:** Inequality and Skills 406
 - 20-1c Ability, Effort, and Chance 406
 - Case Study:** The Benefits of Beauty 407
 - 20-1d An Alternative View of Education: Signaling 407
 - 20-1e The Superstar Phenomenon 408
 - 20-1f Below-Equilibrium Wages: Monopsony 409
 - Ask the Experts:** Competition in Labor Markets 409
 - In the News:** The Aftereffects of the Covid Pandemic 410
 - 20-1g Above-Equilibrium Wages: Minimum-Wage Laws, Unions, and Efficiency Wages 410
- 20-2 The Economics of Discrimination 412
 - 20-2a Measuring Labor-Market Discrimination 412
 - Case Study:** Is Emily More Employable Than Lakisha? 413
 - 20-2b Discrimination by Employers 414
 - Case Study:** Segregated Streetcars and the Profit Motive 415
 - 20-2c Discrimination by Customers and Governments 415
 - Case Study:** Discrimination in Sports 416
 - 20-2d Statistical Discrimination 417
- 20-3 Conclusion 418
- Chapter in a Nutshell 418

Key Concepts 418
 Questions for Review 419
 Problems and Applications 419
 Quick Quiz Answers 420

Chapter 21

Income Inequality and Poverty 421

21-1 Measuring Inequality 422
 21-1a U.S. Income Inequality 422
 21-1b Inequality around the World 423
FYI: Incomes of the Super-Rich 424
 21-1c The Poverty Rate 424
 21-1d Problems in Measuring Inequality 427
 21-1e Economic Mobility 428
Case Study: A Lifetime Perspective on Income Inequality 429

21-2 The Political Philosophy of Redistributing Income 430
 21-2a The Utilitarian Tradition 430
 21-2b The Liberal Contractarian Tradition 431
 21-2c The Libertarian Tradition 432

21-3 Policies to Reduce Poverty 434
 21-3a Minimum-Wage Laws 434
 21-3b Welfare 434
 21-3c Negative Income Tax 435
 21-3d In-Kind Transfers 436
In the News: Poverty during the Pandemic 436
 21-3e Antipoverty Programs and Work Incentives 437

21-4 Conclusion 439
 Chapter in a Nutshell 439
 Key Concepts 440
 Questions for Review 440
 Problems and Applications 440
 Quick Quiz Answers 441

Part VII Topics for Further Study 443

Chapter 22

The Theory of Consumer Choice 443

22-1 The Budget Constraint: What a Consumer Can Afford 444
 22-1a Representing Consumption Opportunities in a Graph 444
 22-1b Shifts in the Budget Constraint 445

22-2 Preferences: What a Consumer Wants 447
 22-2a Representing Preferences with Indifference Curves 447
 22-2b Four Properties of Indifference Curves 448
 22-2c Two Extreme Examples of Indifference Curves 450

22-3 Optimization: What a Consumer Chooses 452
 22-3a The Consumer's Optimal Choices 452

FYI: Utility: An Alternative Way to Describe Preferences and Optimization 453
 22-3b How Changes in Income Affect the Consumer's Choices 453
 22-3c How Changes in Prices Affect the Consumer's Choices 455
 22-3d Income and Substitution Effects 455
 22-3e Deriving the Demand Curve 457

22-4 Three Applications 458
 22-4a Do All Demand Curves Slope Downward? 458
Case Study: The Search for Giffen Goods 460
 22-4b How Do Wages Affect Labor Supply? 460
Case Study: Income Effects on Labor Supply: Historical Trends, Lottery Winners, and the Carnegie Conjecture 463
 22-4c How Do Interest Rates Affect Household Saving? 464

22-5 Conclusion: Do People Really Think This Way? 467
 Chapter in a Nutshell 467
 Key Concepts 468
 Questions for Review 468
 Problems and Applications 468
 Quick Quiz Answers 469

Chapter 23

Frontiers of Microeconomics 471

23-1 Asymmetric Information 472
 23-1a Hidden Actions: Principals, Agents, and Moral Hazard 472
FYI: Corporate Management 473
 23-1b Hidden Characteristics: Adverse Selection and the Lemons Problem 474
 23-1c Signaling to Convey Private Information 474
Case Study: Gifts as Signals 475
 23-1d Screening to Uncover Private Information 476
 23-1e Asymmetric Information and Public Policy 476

23-2 Political Economy 477
 23-2a The Condorcet Voting Paradox 478
 23-2b Arrow's Impossibility Theorem 479
 23-2c The Median Voter Is King 480
 23-2d Politicians Are People Too 481

23-3 Behavioral Economics 482
 23-3a People Aren't Always Rational 482
 23-3b People Care about Fairness 484
 23-3c People Are Inconsistent over Time 485
Ask the Experts: Behavioral Economics 485
In the News: Faults in Risk Assessment 486

23-4 Conclusion 487
 Chapter in a Nutshell 488
 Key Concepts 488
 Questions for Review 488
 Problems and Applications 488
 Quick Quiz Answers 489

Chapter 24

Appendix: How Economists Use Data 491

24-1 The Data That Economists Gather and Study 492

24-1a Experimental Data 492

Case Study: The Moving to Opportunity Program 493

24-1b Observational Data 493

24-1c Three Types of Data 494

24-2 What Economists Do with Data 495

24-2a Describing the Economy 495

24-2b Quantifying Relationships 495

24-2c Testing Hypotheses 496

24-2d Predicting the Future 496

Case Study: The FRB/US Model 497

24-3 The Methods of Data Analysis 498

24-3a Finding the Best Estimate 498

24-3b Gauging Uncertainty 500

24-3c Accounting for Confounding Variables 502

24-3d Establishing Causal Effects 504

Case Study: How Military Service Affects Civilian Earnings 505

24-4 Conclusion 506

Chapter in a Nutshell 507

Key Concepts 507

Questions for Review 507

Problems and Applications 507

Quick Quiz Answers 508

Glossary 509

Index 514

Chapter

1

Ten Principles of Economics

The word **economy** comes from the Greek word **oikonomos**, which means “one who manages a household.” At first, the connection between households and economies may seem obscure. But in fact, they have much in common.

No matter how you picture a modern household, its members face endless decisions. Somehow, they must decide which members do which tasks and what each receives in return. Who cooks dinner? Who gets some extra dessert? Who cleans the bathroom? Who gets to drive the car? Whether a household’s income is high, low, or somewhere in between, its resources (time, dessert, car mileage) must be allocated among alternative uses.

Like a household, a society faces countless decisions. It must find some way to decide what jobs will be done and who will do them. Society needs people to grow food, make clothing, and design software. Once society has allocated people (as well as land, buildings, and machines) to various jobs, it must distribute the goods and services they produce. It must decide who will eat potatoes and who will eat caviar, who will live in a grand manor and who will live in a fifth-floor walk-up.

scarcity

the limited nature of society's resources

economics

the study of how society manages its scarce resources

These decisions are important because resources are scarce. **Scarcity** means that society has limited resources and, therefore, cannot produce all the goods and services people want. Just as members of a household cannot always get their desires satisfied, individuals in a society cannot always attain the standard of living to which they might aspire.

Economics is the study of how society manages its scarce resources. In most societies, resources are allocated through the combined choices of millions of households and businesses. Economists examine how people make these choices: how much they work, what they buy, how much they save, how they invest their savings, and so on. Economists also study how people interact with one another. For instance, economists examine how buyers and sellers together determine the price at which a good is sold and the quantity that is sold. Finally, economists analyze the forces and trends that affect the overall economy, including the growth in average income, the fraction of the population that cannot find work, and the rate at which prices are rising.

Economics covers a wide range of topics and encompasses many approaches, but it is unified by several central ideas. This chapter discusses **Ten Principles of Economics**. Don't worry if you don't understand them all at first or if you aren't completely convinced that they are sensible or important. These ideas will be explored more fully in later chapters. This introduction to the ten principles will give you a sense of what economics is all about. Consider this chapter a preview of coming attractions.

1-1 How People Make Decisions

There is no mystery about what an economy is. Whether it encompasses Los Angeles, the United States, or the entire planet, an economy is just a group of people dealing with one another as they go about their lives. Because the behavior of an economy reflects the behavior of the individuals within it, the first four principles concern individual decision making.

1-1a Principle 1: People Face Trade-Offs

"There ain't no such thing as a free lunch." Grammar aside, this old saying contains much truth. To get one thing you want, you usually have to give up another thing you want. Making decisions requires trading off one goal for another.

Consider Selena, a student who is deciding how to use her most valuable resource—time. Selena can spend all her time studying economics, all her time studying psychology, or divide her time between the two. For every hour she devotes to one subject, she gives up an hour she could have used studying the other. And for every hour spent studying, she gives up an hour that could have been spent napping, bike riding, playing video games, or working at a job for some extra spending money.

Consider Selena's parents, who are deciding how to use the family income. They can spend it on food, clothing, or Selena's tuition. Or they can save some of their income for retirement or a future family vacation. When they allocate a dollar to one of these goods, they have one less dollar to spend on another.

As a society, people face other trade-offs. One classic trade-off is between "guns and butter." The more a society spends on the military, the less it can spend on consumer goods. Another critical trade-off is between a clean environment and the level of income. Laws that require firms to reduce pollution may raise the cost of

producing goods and services. Because of these higher costs, the firms are likely to earn smaller profits, pay lower wages, charge higher prices, or do some combination of these three things. While pollution regulations yield a cleaner environment and the improved health that comes with it, they may reduce the incomes of the regulated firms' owners, workers, and customers.

Another societal trade-off is between efficiency and equality. **Efficiency** means that society is getting the greatest benefits from its scarce resources. **Equality** means that those benefits are distributed uniformly among society's members. In other words, efficiency refers to the size of the economic pie, while equality refers to how evenly the pie is sliced.

These two goals can conflict. Consider, for instance, government policies aimed at reducing inequality. Some of these policies, such as welfare or unemployment insurance, help the members of society most in need. Others, such as the personal income tax, require the financially successful to contribute more than others to support the government. These policies increase equality but may decrease efficiency. When the government redistributes income from the rich to the poor, it reduces the reward for hard work for people at all income levels. As a result, people may work less and produce fewer goods and services. In other words, when the government cuts the economic pie into more equal slices, the pie sometimes shrinks.

Recognizing that people face trade-offs does not tell us what decisions are best. A student should not abandon the study of psychology just because doing so would free up time for studying economics. Society should not live with pollution just because environmental regulations might reduce our material standard of living. The government should not neglect the poor just because helping them would distort work incentives. Yet people will make better choices if they understand the options available to them. Our study of economics, therefore, starts by acknowledging life's trade-offs.

1-1b Principle 2: The Cost of Something Is What You Give Up to Get It

Because people face trade-offs, they need to compare the costs and benefits of alternative decisions. In many cases, however, the costs are not as obvious as they might first appear.

Consider the decision to attend college. The main benefits are intellectual enrichment and a lifetime of better job opportunities. But what are the costs? You might be tempted to add up the money spent on tuition, books, room, and board. Yet this total does not truly represent what you give up to spend a year in college.

This calculation has two problems. First, it includes some things that are not really costs of going to college. Even if you quit school, you need a place to sleep and food to eat. Room and board are college costs only to the extent that they exceed the cost of living and eating at home or in your apartment. Second, this calculation ignores the largest cost of going to college—your time. When you listen to lectures, read books, and write papers, you can't spend that time working and earning money. For most students, the earnings they forgo to attend school are the largest cost of their education.

The **opportunity cost** of an item is what you give up to get it. When making decisions, it's smart to take opportunity costs into account, and people often do. College athletes who can earn millions dropping out of school and playing professional sports understand that their opportunity cost of attending college is high. Not surprisingly, they sometimes decide that the benefit of a college education is not worth the cost.

efficiency

the property of society getting the most it can from its scarce resources

equality

the property of distributing economic prosperity uniformly among the members of society

opportunity cost

whatever must be given up to obtain some item