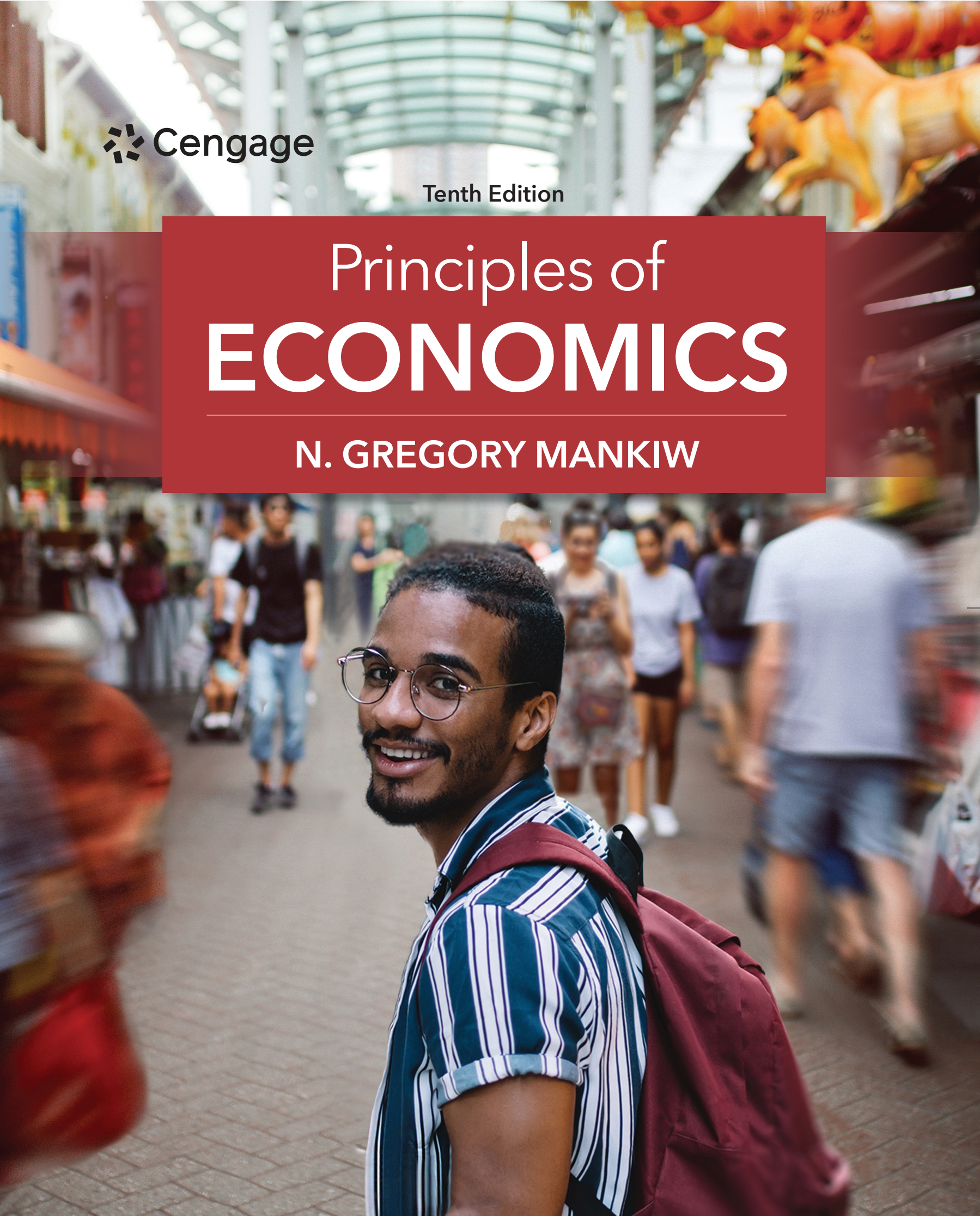


 Cengage

Tenth Edition

Principles of **ECONOMICS**

N. GREGORY MANKIW





Principles of Economics: 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.

Firm Behavior and the Organization of Industry

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

The Economics of Labor Markets

19 The Markets for the Factors of Production

20 Earnings and Discrimination

21 Income Inequality and Poverty

These chapters examine the special features of labor markets, in which most people earn most of their income.

Topics for Further Study

22 The Theory of Consumer Choice

23 Frontiers of Microeconomics

Additional topics in microeconomics include household decision making, asymmetric information, political economy, and behavioral economics.

The Data of Macroeconomics

24 Measuring a Nation's Income

25 Measuring the Cost of Living

The overall quantity of production and the overall price level are used to monitor developments in the economy as a whole.

The Real Economy in the Long Run

26 Production and Growth

27 Saving, Investment, and the Financial System

28 The Basic Tools of Finance

29 Unemployment

These chapters describe the forces that in the long run determine key real variables, including GDP growth, saving, investment, real interest rates, and unemployment.

Money and Prices in the Long Run

30 The Monetary System

31 Money Growth and Inflation

The monetary system is crucial in determining the long-run behavior of the price level, the inflation rate, and other nominal variables.

The Macroeconomics of Open Economies

32 Open-Economy Macroeconomics:
Basic Concepts

A nation's economic interactions with other nations are described by its trade balance, net foreign investment, and exchange rate.

33 A Macroeconomic Theory of the
Open Economy

A long-run model of the open economy explains the determinants of the trade balance, the real exchange rate, and other real variables.

Short-Run Economic Fluctuations

34 Aggregate Demand and Aggregate Supply

35 The Influence of Monetary and Fiscal Policy
on Aggregate Demand

36 The Short-Run Trade-off between
Inflation and Unemployment

The model of aggregate demand and aggregate supply explains short-run economic fluctuations, the short-run effects of monetary and fiscal policy, and the short-run linkage between real and nominal variables.

Final Thoughts

37 Six Debates over Macroeconomic Policy

A capstone chapter presents both sides of six major debates over economic policy.

38 Appendix: How Economists Use Data

The analysis of data to test theories and estimate parameters is central to the science of economics.

Suggestions for Summer Reading



If you enjoyed the economics course that you just finished, you might like to read more about economic issues in the following books.

Abhijit V. Banerjee and Esther Duflo

Good Economics for Hard Times

(New York: PublicAffairs, 2019)

Two prominent economists—winners of the Nobel prize in 2019—offer their ideas about how to build a better world.

Yoram Bauman and Grady Klein

The Cartoon Introduction to Economics

(New York: Hill and Wang, 2010)

Basic economic principles, with humor.

Bryan Caplan

The Myth of the Rational Voter: Why Democracies Choose Bad Policies

(Princeton, NJ: Princeton University Press, 2008)

An economist asks why elected leaders often fail to follow the policies that economists recommend.

Kimberly Clausing

Open: The Progressive Case for Free Trade, Immigration, and Global Capital

(Cambridge, MA: Harvard University Press, 2019)

An economist explains why Americans benefit from interacting with the rest of the world.

Avinash K. Dixit and Barry J. Nalebuff

The Art of Strategy: A Game Theorist's Guide to Success in Business and Life

(New York: Norton, 2008)

This introduction to game theory discusses how all people—from arrested criminals to corporate executives—should, and do, make strategic decisions.

Mihir Desai

The Wisdom of Finance: Discovering Humanity in the World of Risk and Return

(Boston: Houghton Mifflin Harcourt, 2017)

A charming look at how the insights of finance inform our lives.

William Easterly

The Tyranny of Experts: Economists, Dictators, and the Forgotten Rights of the Poor

(New York: Basic Books, 2013)

A former World Bank economist examines the many attempts to help the world's poorest nations and why these attempts have often failed.

Milton Friedman

Capitalism and Freedom

(Chicago: University of Chicago Press, 1962)

One of the most important economists of the 20th century argues that society should rely less on the government and more on the free market.

Robert L. Heilbroner

The Worldly Philosophers

(New York: Touchstone, 1953, revised 1999)

A classic introduction to the lives, times, and ideas of the great economic thinkers, including Adam Smith, David Ricardo, and John Maynard Keynes.

Steven E. Landsburg

The Armchair Economist: Economics and Everyday Life

(New York: Free Press, 2012)

Why does popcorn cost so much at movie theaters? Steven Landsburg discusses this and other puzzles of economic life.



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.

Tenth Edition

Principles of
ECONOMICS

N. GREGORY MANKIW
HARVARD UNIVERSITY



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

Principles of Economics, 10e
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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)
- Research has shed light on how the aftermath of the slave trade affects modern Africa. (Chapter 26)
- The four-decade decline in real interest rates is puzzling. (Chapter 27)
- Women are generally better investors than men. (Chapter 28)
- New research has examined the use of efficiency wages. (Chapter 29)
- The recession caused by the coronavirus pandemic was unusual in several ways. (Chapter 34)
- The monetary and fiscal response during the pandemic caused some economists to worry about a resurgence in inflation. (Chapter 36)
- The Federal Reserve is asked to expand its set of economic goals. (Chapter 37)

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 38 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 two 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. 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.

Macroeconomics

My overall approach to teaching macroeconomics is to examine the economy in the long run (when prices are flexible) before examining the economy in the short run (when prices are sticky). I believe that this organization simplifies learning macroeconomics for several reasons. First, the classical assumption of price flexibility is more closely linked to the basic lessons of supply and demand, which students have already mastered. Second, the classical dichotomy allows the study of the long run to be broken up into several easily digested pieces. Third, because the business cycle represents a

transitory deviation from the economy's long-run growth path, studying the transitory deviations is more natural after the long-run equilibrium is understood. Fourth, the macroeconomic theory of the long run is less controversial among economists than is the macroeconomic theory of the short run. For these reasons, most upper-level courses in macroeconomics now follow this long-run-before-short-run approach; my goal is to offer introductory students the same advantage.

I start the coverage of macroeconomics with issues of measurement. Chapter 24, "Measuring a Nation's Income," discusses the meaning of gross domestic product and related statistics from the national income accounts. Chapter 25, "Measuring the Cost of Living," examines the measurement and use of the consumer price index.

The next four chapters describe the behavior of the real economy in the long run. Chapter 26, "Production and Growth," examines the determinants of the large variation in living standards over time and across countries. Chapter 27, "Saving, Investment, and the Financial System," discusses the types of financial institutions in our economy and examines their role in allocating resources. Chapter 28, "The Basic Tools of Finance," introduces present value, risk management, and asset pricing. Chapter 29, "Unemployment," considers the long-run determinants of the unemployment rate, including job search, minimum-wage laws, the market power of unions, and efficiency wages.

Having described the long-run behavior of the real economy, the book then turns to the long-run behavior of money and prices. Chapter 30, "The Monetary System," introduces the economist's concept of money and the role of the central bank in controlling the quantity of money. Chapter 31, "Money Growth and Inflation," develops the classical theory of inflation and discusses the costs that inflation imposes on a society.

The next two chapters present the macroeconomics of open economies, maintaining the long-run assumptions of price flexibility and full employment. Chapter 32, "Open-Economy Macroeconomics: Basic Concepts," explains the relationship among saving, investment, and the trade balance, the distinction between the nominal and real exchange rate, and the theory of purchasing-power parity. Chapter 33, "A Macroeconomic Theory of the Open Economy," presents a classical model of the international flow of goods and capital. The model sheds light on various issues, including the link between budget deficits and trade deficits and the macroeconomic effects of trade policies. Because instructors differ in their emphasis on this material, these chapters are written so they can be used in different ways. Some may choose to cover Chapter 32 but not Chapter 33, others may skip both chapters, and still others may choose to defer the analysis of open-economy macroeconomics until the end of their courses.

After developing the long-run theory of the economy in Chapters 26 through 33, the book turns to explaining short-run fluctuations around the long-run trend. Chapter 34, "Aggregate Demand and Aggregate Supply," begins with some facts about the business cycle and then introduces the model of aggregate demand and aggregate supply. Chapter 35, "The Influence of Monetary and Fiscal Policy on Aggregate Demand," explains how policymakers can use the tools at their disposal to shift the aggregate-demand curve. Chapter 36, "The Short-Run Trade-Off between Inflation and Unemployment," explains why policymakers who control aggregate demand face a trade-off between inflation and unemployment. It examines why this trade-off exists in the short run, why it shifts over time, and why it does not exist in the long run.

The discussion of macroeconomics concludes with Chapter 37, "Six Debates over Macroeconomic Policy." This capstone chapter considers six controversial issues facing policymakers: the proper degree of policy activism in response to the

business cycle, the relative efficacy of government spending hikes and tax cuts to fight recessions, the choice between rules and discretion in the conduct of monetary policy, the desirability of reaching zero inflation, the importance of balancing the government's budget, and the need for tax reform to encourage saving. For each issue, the chapter presents both sides of the debate and encourages students to make their own judgments.

The final chapter in the book is Chapter 38, "Appendix: How Economists Use Data." This chapter introduces students to the statistical methods that economists use to test and apply their theories. Instructors who teach it may choose to move it earlier in the course.

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.

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	

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.

Optional Online Chapter on the Keynesian Cross

I have written a brief chapter on the Keynesian Cross (sometimes called the income-expenditure model) that complements the material on aggregate demand and aggregate supply. Instructors who want to teach this model can add this chapter to their students' e-books for no additional cost.

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.

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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)

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N. Gregory Mankiw
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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

Part VIII The Data of Macroeconomics 491

- 24 Measuring a Nation's Income 491
- 25 Measuring the Cost of Living 511

Part IX The Real Economy in the Long Run 529

- 26 Production and Growth 529
- 27 Saving, Investment, and the Financial System 553
- 28 The Basic Tools of Finance 575
- 29 Unemployment 591

Part X Money and Prices in the Long Run 615

- 30 The Monetary System 615
- 31 Money Growth and Inflation 639

Part XI The Macroeconomics of Open Economies 665

- 32 Open-Economy Macroeconomics: Basic Concepts 665
- 33 A Macroeconomic Theory of the Open Economy 687

Part XII Short-Run Economic Fluctuations 709

- 34 Aggregate Demand and Aggregate Supply 709
- 35 The Influence of Monetary and Fiscal Policy on Aggregate Demand 747
- 36 The Short-Run Trade-Off between Inflation and Unemployment 771

Part XIII Final Thoughts 797

- 37 Six Debates over Macroeconomic Policy 797
- 38 Appendix: How Economists Use Data 819

Contents



Preface: To the Instructor v
Preface: To the Student xxix

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

Part VIII The Data of Macroeconomics 491

Chapter 24

Measuring a Nation's Income 491

24-1 The Economy's Income and Expenditure 492

24-2 The Measurement of GDP 494

24-2a "GDP Is the Market Value . . ." 494

24-2b ". . . of All . . ." 494

24-2c ". . . Final . . ." 495

24-2d ". . . Goods and Services . . ." 495

24-2e ". . . Produced . . ." 495

24-2f ". . . Within a Country . . ." 495

24-2g ". . . In a Given Period." 495

FYI: Other Measures of Income 496

24-3 The Components of GDP 497

24-3a Consumption 497

24-3b Investment 497

24-3c Government Purchases 498

24-3d Net Exports 498

Case Study: The Components of U.S. GDP 499

24-4 Real versus Nominal GDP 500

24-4a A Numerical Example 500

24-4b The GDP Deflator 501

Case Study: A Half Century of Real GDP 502

24-5 Is GDP a Good Measure of Economic Well-Being? 504

Case Study: International Differences in GDP and the Quality of Life 505

In the News: Sex, Drugs, and GDP 506

24-6 Conclusion 507

Chapter in a Nutshell 508

Key Concepts 508

Questions for Review 508

Problems and Applications 508

Quick Quiz Answers 510

Chapter 25

Measuring the Cost of Living 511

25-1 The Consumer Price Index 512

25-1a How the CPI Is Calculated 512

FYI: What's in the CPI's Basket? 514

25-1b Problems in Measuring the Cost of Living 515

25-1c The GDP Deflator versus the Consumer Price Index 516

25-2 Correcting Economic Variables for the Effects of Inflation 518

25-2a Dollar Figures from Different Times 518

FYI: Mr. Index Goes to Hollywood 519

Case Study: Regional Differences in the Cost of Living 519

25-2b Indexation 521

25-2c Real and Nominal Interest Rates 521

Case Study: Interest Rates in the U.S. Economy 522

25-3 Conclusion 524

Chapter in a Nutshell 525

Key Concepts 525

Questions for Review 525

Problems and Applications 526

Quick Quiz Answers 527

Part IX The Real Economy in the Long Run 529

Chapter 26

Production and Growth 529

26-1 Economic Growth around the World 530

FYI: Are You Richer Than the Richest American? 532

26-2 Productivity: Its Role and Determinants 532

26-2a Why Productivity Is So Important 533

26-2b How Productivity Is Determined 533

FYI: The Production Function 535

Case Study: Are Natural Resources a Limit to Growth? 536

26-3 Economic Growth and Public Policy 537

26-3a Saving and Investment 537

26-3b Diminishing Returns and the Catch-Up Effect 537

26-3c Investment from Abroad 539

26-3d Education 540

26-3e Health and Nutrition 540

26-3f Property Rights and Political Stability 541

26-3g Free Trade 542

26-3h Research and Development 542

26-3i Population Growth 543

Ask the Experts: Innovation and Growth 543

Case Study: Why Is So Much of Africa Poor? 545

In the News: The Secret Sauce of American Prosperity 548

26-4 Conclusion: The Importance of Long-Run Growth 548

Chapter in a Nutshell 549

Key Concepts 550

Questions for Review 550

Problems and Applications 550

Quick Quiz Answers 551

Chapter 27

Saving, Investment, and the Financial System 553

27-1 Financial Institutions in the U.S. Economy 554

27-1a Financial Markets 554

27-1b Financial Intermediaries 556

27-1c Summing Up 558

27-2 Saving and Investment in the National Income Accounts	558
27-2a Some Important Identities	559
27-2b The Meaning of Saving and Investment	560
27-3 The Market for Loanable Funds	561
27-3a Supply and Demand for Loanable Funds	561
27-3b Policy 1: Saving Incentives	563
27-3c Policy 2: Investment Incentives	565
Case Study: The Decline in Real Interest Rates from 1984 to 2020	566
27-3d Policy 3: Government Budget Deficits and Surpluses	567
Case Study: The History of U.S. Government Debt	569
Ask the Experts: Fiscal Policy and Saving	569
FYI: Financial Crises	571
27-4 Conclusion	572
Chapter in a Nutshell	572
Key Concepts	572
Questions for Review	573
Problems and Applications	573
Quick Quiz Answers	574

Chapter 28

The Basic Tools of Finance 575

28-1 Present Value: Measuring the Time Value of Money	576
FYI: The Magic of Compounding and the Rule of 70	578
28-2 Managing Risk	578
28-2a Risk Aversion	579
28-2b The Markets for Insurance	579
28-2c Diversification of Firm-Specific Risk	580
28-2d The Trade-Off between Risk and Return	581
28-3 Asset Valuation	583
28-3a Fundamental Analysis	583
FYI: Key Numbers for Stock Watchers	584
28-3b The Efficient Markets Hypothesis	584
Case Study: Random Walks and Index Funds	585
Ask the Experts: Diversified Investing	586
In the News: The Perils of Investing with aY Chromosome	586
28-3c Market Irrationality	587
28-4 Conclusion	588
Chapter in a Nutshell	589
Key Concepts	589
Questions for Review	589
Problems and Applications	589
Quick Quiz Answers	590

Chapter 29

Unemployment 591

29-1 Identifying Unemployment	592
29-1a How Is Unemployment Measured?	592
Case Study: Labor-Force Participation of Women and Men in the U.S. Economy	595

29-1b Does the Unemployment Rate Measure What We Want It to Measure?	596
29-1c How Long Are the Unemployed without Work?	596
29-1d Why Are There Always Some People Unemployed?	598
FYI: The Jobs Number	598

29-2 Job Search	599
29-2a Why Some Frictional Unemployment Is Inevitable	599
29-2b Public Policy and Job Search	600
29-2c Unemployment Insurance	600
29-3 Minimum-Wage Laws	602
Case Study: Who Earns the Federal Minimum Wage?	603
29-4 Unions and Collective Bargaining	604
29-4a The Economics of Unions	604
29-4b Are Unions Good or Bad for the Economy?	605
FYI: Mismatch as a Source of Structural Unemployment	606
29-5 The Theory of Efficiency Wages	607
29-5a Worker Health	607
29-5b Worker Turnover	607
29-5c Worker Quality	607
29-5d Worker Effort	608
29-5e Worker Morale	608
Case Study: Henry Ford and the Amazing \$5-a-Day Wage	608
In the News: Efficiency Wages in Practice	610
29-6 Conclusion	610
Chapter in a Nutshell	611
Key Concepts	612
Questions for Review	612
Problems and Applications	612
Quick Quiz Answers	613

Part X Money and Prices in the Long Run 615

Chapter 30

The Monetary System 615

30-1 The Meaning of Money	616
30-1a The Functions of Money	616
30-1b The Kinds of Money	617
FYI: Cryptocurrencies: A Fad or the Future?	618
30-1c Money in the U.S. Economy	618
FYI: Why Credit Cards Aren't Money	619
Case Study: Where Is All the Currency?	620
30-2 The Federal Reserve System	620
30-2a The Fed's Organization	620
30-2b The Federal Open Market Committee	621
30-3 Banks and the Money Supply	622
30-3a The Simple Case of 100-Percent-Reserve Banking	622
30-3b Money Creation with Fractional- Reserve Banking	623

- 30-3c The Money Multiplier 624
- 30-3d Bank Capital, Leverage, and the Financial Crisis of 2008–2009 625

30-4 The Fed's Tools of Monetary Control 627

- 30-4a How the Fed Influences the Quantity of Reserves 628
- 30-4b How the Fed Influences the Reserve Ratio 629
- 30-4c Problems in Controlling the Money Supply 630
- Case Study:** Bank Runs and the Money Supply 631
- 30-4d The Federal Funds Rate 632
- In the News:** A Trip to Jekyll Island 632

30-5 Conclusion 634

Chapter in a Nutshell 635

Key Concepts 635

Questions for Review 635

Problems and Applications 636

Quick Quiz Answers 637

Chapter 31

Money Growth and Inflation 639

31-1 The Classical Theory of Inflation 640

- 31-1a The Level of Prices and the Value of Money 641
- 31-1b Money Supply, Money Demand, and Monetary Equilibrium 641
- 31-1c The Effects of a Monetary Injection 642
- 31-1d A Brief Look at the Adjustment Process 643
- 31-1e The Classical Dichotomy and Monetary Neutrality 645
- 31-1f Velocity and the Quantity Equation 646
- Case Study:** Money and Prices during Four Hyperinflations 648
- 31-1g The Inflation Tax 649
- 31-1h The Fisher Effect 650

31-2 The Costs of Inflation 652

- 31-2a A Fall in Purchasing Power? The Inflation Fallacy 652
- 31-2b Shoeleather Costs 653
- 31-2c Menu Costs 654
- 31-2d Relative-Price Variability and the Misallocation of Resources 654
- 31-2e Inflation-Induced Tax Distortions 655
- 31-2f Confusion and Inconvenience 656
- 31-2g A Special Cost of Unexpected Inflation: Arbitrary Redistributions of Wealth 657
- 31-2h Inflation Is Bad, but Deflation May Be Worse 657
- Case Study:** *The Wizard of Oz* and the Free-Silver Debate 658

In the News: Life during Hyperinflation 660

31-3 Conclusion 660

Chapter in a Nutshell 662

Key Concepts 662

Questions for Review 662

Problems and Applications 662

Quick Quiz Answers 663

Part XI The Macroeconomics of Open Economies 665

Chapter 32

Open-Economy Macroeconomics: Basic Concepts 665

32-1 The International Flows of Goods and Capital 666

- 32-1a The Flow of Goods: Exports, Imports, and Net Exports 666

Case Study: The Increasing Openness of the U.S. Economy 667

- 32-1b The Flow of Financial Resources: Net Capital Outflow 668

- 32-1c The Equality of Net Exports and Net Capital Outflow 669

- 32-1d Saving, Investment, and Their Relationship to International Flows 671

- 32-1e Summing Up 672

Case Study: Is the U.S. Trade Deficit a National Problem? 673

Ask the Experts: Trade Balances and Trade Negotiations 675

32-2 The Prices for International Transactions: Real and Nominal Exchange Rates 676

- 32-2a Nominal Exchange Rates 676

FYI: The Euro 677

- 32-2b Real Exchange Rates 677

32-3 A First Theory of Exchange-Rate Determination: Purchasing-Power Parity 679

- 32-3a The Basic Logic of Purchasing-Power Parity 679

- 32-3b Implications of Purchasing-Power Parity 680

Case Study: The Nominal Exchange Rate during a Hyperinflation 681

- 32-3c Limitations of Purchasing-Power Parity 682

Case Study: The Hamburger Standard 683

32-4 Conclusion 684

Chapter in a Nutshell 684

Key Concepts 685

Questions for Review 685

Problems and Applications 685

Quick Quiz Answers 686

Chapter 33

A Macroeconomic Theory of the Open Economy 687

33-1 Supply and Demand for Loanable Funds and for Foreign-Currency Exchange 688

- 33-1a The Market for Loanable Funds 688

- 33-1b The Market for Foreign-Currency Exchange 690

FYI: Purchasing-Power Parity as a Special Case 692

33-2 Equilibrium in the Open Economy	693
33-2a Net Capital Outflow: The Link between the Two Markets	693
33-2b Simultaneous Equilibrium in Two Markets	694
FYI: Disentangling Supply and Demand	696
33-3 How Policies and Events Affect an Open Economy	696
33-3a Government Budget Deficits	696
33-3b Trade Policy	698
Ask the Experts: Deficits	699
33-3c Political Instability and Capital Flight	701
Case Study: Capital Flows from China	703
In the News: Separating Fact from Fiction	704
Ask the Experts: Currency Manipulation	704
33-4 Conclusion	706
Chapter in a Nutshell	706
Key Concepts	706
Questions for Review	707
Problems and Applications	707
Quick Quiz Answers	708

Part XII Short-Run Economic Fluctuations 709

Chapter 34

Aggregate Demand and Aggregate Supply 709

34-1 Three Key Facts about Economic Fluctuations	710
34-1a Fact 1: Economic Fluctuations Are Irregular and Unpredictable	710
34-1b Fact 2: Most Macroeconomic Quantities Fluctuate Together	712
34-1c Fact 3: As Output Falls, Unemployment Rises	712
34-2 Explaining Short-Run Economic Fluctuations	713
34-2a The Assumptions of Classical Economics	713
34-2b The Reality of Short-Run Fluctuations	713
34-2c The Model of Aggregate Demand and Aggregate Supply	714
34-3 The Aggregate-Demand Curve	715
34-3a Why the Aggregate-Demand Curve Slopes Downward	715
34-3b Why the Aggregate-Demand Curve Might Shift	718
34-4 The Aggregate-Supply Curve	720
34-4a Why the Aggregate-Supply Curve Is Vertical in the Long Run	721
34-4b Why the Long-Run Aggregate-Supply Curve Might Shift	722
34-4c Using Aggregate Demand and Aggregate Supply to Depict Long-Run Growth and Inflation	723
34-4d Why the Aggregate-Supply Curve Slopes Upward in the Short Run	724
34-4e Why the Short-Run Aggregate-Supply Curve Might Shift	728

34-5 Two Causes of Economic Fluctuations	729
34-5a The Effects of a Shift in Aggregate Demand	730
FYI: Monetary Neutrality Revisited	733
Case Study: Two Big Shifts in Aggregate Demand: The Great Depression and World War II	733
Case Study: The Great Recession of 2008–2009	734
34-5b The Effects of a Shift in Aggregate Supply	736
Case Study: Oil and the Economy	738
FYI: The Origins of the Model of Aggregate Demand and Aggregate Supply	739
Case Study: The Covid Recession of 2020	740
In the News: The Strange Downturn of 2020	740
34-6 Conclusion	743
Chapter in a Nutshell	743
Key Concepts	744
Questions for Review	744
Problems and Applications	744
Quick Quiz Answers	746

Chapter 35

The Influence of Monetary and Fiscal Policy on Aggregate Demand 747

35-1 How Monetary Policy Influences Aggregate Demand	748
35-1a The Theory of Liquidity Preference	749
FYI: Interest Rates in the Long Run and the Short Run	751
35-1b The Downward Slope of the Aggregate-Demand Curve	752
35-1c Changes in the Money Supply	753
35-1d The Role of Interest-Rate Targets in Fed Policy	754
Case Study: Why the Fed Watches the Stock Market (and Vice Versa)	755
35-1e The Zero Lower Bound	756
35-2 How Fiscal Policy Influences Aggregate Demand	757
35-2a Changes in Government Purchases	757
35-2b The Multiplier Effect	758
35-2c A Formula for the Spending Multiplier	758
35-2d Other Applications of the Multiplier Effect	760
35-2e The Crowding-Out Effect	760
35-2f Changes in Taxes	762
FYI: How Fiscal Policy Might Affect Aggregate Supply	763
35-3 Using Policy to Stabilize the Economy	763
35-3a The Case for Active Stabilization Policy	764
Case Study: Keynesians in the White House	765
35-3b The Case against Active Stabilization Policy	765
Ask the Experts: Economic Stimulus	765
35-3c Automatic Stabilizers	767
35-4 Conclusion	768
Chapter in a Nutshell	768
Key Concepts	768
Questions for Review	769
Problems and Applications	769
Quick Quiz Answers	770

Chapter 36

The Short-Run Trade-Off between Inflation and Unemployment 771

36-1 The Phillips Curve 772

- 36-1a Origins of the Phillips Curve 772
- 36-1b Aggregate Demand, Aggregate Supply, and the Phillips Curve 773

36-2 Shifts in the Phillips Curve: The Role of Expectations 775

- 36-2a The Long-Run Phillips Curve 775
- 36-2b The Meaning of “Natural” 777
- 36-2c Reconciling Theory and Evidence 778
- 36-2d The Short-Run Phillips Curve 779
- 36-2e The Natural Experiment for the Natural-Rate Hypothesis 780

36-3 Shifts in the Phillips Curve: The Role of Supply Shocks 782

36-4 The Cost of Reducing Inflation 785

- 36-4a The Sacrifice Ratio 785
- 36-4b Rational Expectations and the Possibility of Costless Disinflation 787
- 36-4c The Volcker Disinflation 787

36-5 Recent History 789

- 36-5a The Greenspan Era 789
- 36-5b The Great Recession 790
- Ask the Experts:** The Inflation of 2021–2022 792
- 36-5c The Pandemic 792

36-6 Conclusion 793

Chapter in a Nutshell 793

Key Concepts 794

Questions for Review 794

Problems and Applications 794

Quick Quiz Answers 795

Part XIII Final Thoughts 797

Chapter 37

Six Debates over Macroeconomic Policy 797

37-1 How Actively Should Policymakers Try to Stabilize the Economy? 798

- 37-1a The Case for Robust Stabilization Policy 798
- 37-1b The Case for Modest Stabilization Policy 798

37-2 Should the Government Fight Recessions with Spending Hikes or Tax Cuts? 800

- 37-2a The Case for Fighting Recessions with Spending Hikes 800
- 37-2b The Case for Fighting Recessions with Tax Cuts 801

37-3 Should Monetary Policy Be Made by Rule or Discretion? 803

- 37-3a The Case for Rule-based Monetary Policy 803
- 37-3b The Case for Discretionary Monetary Policy 804
- FYI:** Inflation Targeting 805

37-4 Should the Central Bank Aim for an Inflation Rate Near Zero? 806

- 37-4a The Case for Near-Zero Inflation 806
- 37-4b The Case for Living with Moderate Inflation 807
- In the News:** The Goals of Monetary Policy 808

37-5 Should the Government Balance Its Budget? 810

- 37-5a The Case for a Balanced Budget 810
- 37-5b The Case against a Balanced Budget 811

37-6 Should the Tax Laws Be Reformed to Encourage Saving? 812

- 37-6a The Case for Promoting Saving through Tax Reform 812
- Ask the Experts:** Taxing Capital and Labor 814
- 37-6b The Case against Promoting Saving through Tax Reform 814

37-7 Conclusion: Economic Policy and Shades of Gray 815

Chapter in a Nutshell 816

Questions for Review 816

Problems and Applications 817

Quick Quiz Answers 817

Chapter 38

Appendix: How Economists Use Data 819

38-1 The Data That Economists Gather and Study 820

- 38-1a Experimental Data 820
- Case Study:** The Moving to Opportunity Program 821
- 38-1b Observational Data 821
- 38-1c Three Types of Data 822

38-2 What Economists Do with Data 823

- 38-2a Describing the Economy 823
- 38-2b Quantifying Relationships 823
- 38-2c Testing Hypotheses 824
- 38-2d Predicting the Future 824
- Case Study:** The FRB/US Model 825

38-3 The Methods of Data Analysis 826

- 38-3a Finding the Best Estimate 826
- 38-3b Gauging Uncertainty 828
- 38-3c Accounting for Confounding Variables 830
- 38-3d Establishing Causal Effects 832
- Case Study:** How Military Service Affects Civilian Earnings 833

38-4 Conclusion 834

Chapter in a Nutshell 835

Key Concepts 835

Questions for Review 835

Problems and Applications 835

Quick Quiz Answers 836

Glossary 837

Index 844



Preface: To the Student

“Economics is a study of mankind in the ordinary business of life.” So wrote Alfred Marshall, the great 19th-century economist, in his textbook, *Principles of Economics*. Knowledge about the economy has advanced substantially since Marshall’s time, but this definition of economics is as true today as it was in 1890, when the first edition of his text was published.

Why should you, as a student in the 21st century, embark on the study of economics? There are three reasons.

The first reason to study economics is that it will help you understand the world in which you live. Many questions about the economy might spark your curiosity. Why are apartments so hard to find in New York City? Why do airlines charge less for a round-trip ticket if the traveler stays over a Saturday night? Why is Scarlett Johansson paid so much to perform in movies? Why are living standards so meager in many African countries? Why do some countries have high rates of inflation while others have stable prices? Why are jobs easy to find in some years and hard to find in others? These are just a few of the questions that a course or two in economics will help you answer.

The second reason to study economics is that it will make you a more astute participant in the economy. Throughout your life, you’ll make many economic decisions. As a student, you decide how many years to remain in school. Once you take a job, you’ll decide how much of your income to spend, how much to save, and how to invest your savings. Someday you may find yourself running a small business or a large corporation, and you will decide how many workers to hire and what prices to charge for your products. Studying economics will give you a new perspective on how best to make these decisions. The insights explored in the coming chapters will not, by themselves, make you rich, but they may help in that endeavor.

The third reason to study economics is that it will help you understand the potential and limits of economic policy. Economic questions are always on the minds of policymakers in mayors’ offices, governors’ mansions, and the White House. What are the burdens of alternative forms of taxation? What are the effects of free trade with other countries? What is the best way to protect the environment? How does a government budget deficit affect growth? As a voter, you help choose the policies that guide the allocation of society’s resources. An understanding of economics will help you carry out that responsibility. And who knows: Someday, you may end up as one of those policymakers yourself.

The principles of economics can be applied in many of life’s situations. Whether the future finds you following the news, running a business, or sitting in the Oval Office, you will be glad that you studied economics.

N. Gregory Mankiw
May 2022

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

rational people

people who systematically and purposefully do the best they can to achieve their objectives

marginal change

an incremental adjustment to a plan of action

1-1c Principle 3: Rational People Think at the Margin

Economists often assume that people are rational. **Rational people** systematically and purposefully do the best they can to achieve their goals, given the available opportunities. As you study economics, you will encounter firms that decide how many workers to hire and how much product to make and sell to maximize profits. You will meet people who decide how much to work and what goods and services to buy to achieve the highest possible level of satisfaction. To be sure, human behavior is complex and sometimes deviates from rationality. But the assumption that people do the best they can is, economists have found, a good starting point to explain the decisions that people make.

Rational decision makers know that many issues in life are not black and white but involve shades of gray. At dinnertime, you don't ask yourself, "Should I fast or eat like a pig?" You are more likely to ask, "Should I take that extra spoonful of mashed potatoes?" When exams roll around, your decision is probably not between blowing them off and studying 24 hours a day but whether to spend an extra hour reviewing your notes instead of hanging out with friends. Economists use the term **marginal change** to describe an incremental adjustment to an existing plan of action. Keep in mind that **margin** means "edge," so marginal changes are small adjustments around the edges of what you are doing. Rational people make decisions by comparing **marginal benefits** and **marginal costs**.

For example, suppose you are deciding whether to watch a movie tonight. You pay \$30 a month for a streaming service that gives you unlimited access to its film library, and you typically watch five movies a month. What cost should you consider when deciding whether to stream another movie? The answer might seem to be $\$30/5$, or \$6, the **average** cost of a movie. More relevant for your decision, however, is the **marginal** cost—the extra money that you have to pay if you stream another film. Here, the marginal cost is zero because you pay \$30 regardless of how many movies you stream. In other words, at the margin, streaming a movie is free. The only cost of watching a movie tonight is the time it takes away from other activities, such as working at a job or (better yet) reading this textbook.

Thinking at the margin is also useful for business decisions. Consider an airline deciding how much to charge passengers who fly standby. Suppose that flying a 200-seat plane across the United States costs the airline \$100,000. The average cost of each seat is \$500 ($\$100,000/200$). You might think that the airline should never sell a ticket for less than \$500. But imagine that a plane is about to take off with ten empty seats, and Stanley, a standby passenger, is at the gate and willing to pay \$300 for a seat. Should the airline sell him the ticket? Yes, it should. If the plane has empty seats, the cost of adding an extra passenger is tiny. The **average** cost of flying a passenger is \$500, but the **marginal** cost is merely the cost of the can of soda Stanley will consume and the small bit of jet fuel needed to carry his weight. As long as Stanley pays more than the marginal cost, selling him the ticket is profitable. A rational airline can benefit from thinking at the margin.

Marginal analysis explains some otherwise puzzling phenomena. For example, why is water so cheap while diamonds are so expensive? You might think it should be the other way around: Humans need water to survive, but diamonds merely glitter. Yet people are willing to pay much more for a diamond than for a cup of water. Economists have figured this out. A person's willingness to pay for a good is based on the marginal benefit that an extra unit of the good would yield. The marginal benefit, in turn, depends on how many units a person already has. Water is essential but plentiful, so the marginal benefit of an extra



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Many movie streaming services set the marginal cost of a movie equal to zero.

cup is small. By contrast, no one needs diamonds to survive, but because they are so rare, the marginal benefit of an extra gem is large.

A rational decision maker takes an action if and only if the action's marginal benefit exceeds its marginal cost. This principle explains why people use streaming services as much as they do, why airlines sell tickets below average cost, and why people pay more for diamonds than for water. It can take a while to get used to the logic of marginal thinking, but the study of economics will give you ample opportunity to practice.

1-1d Principle 4: People Respond to Incentives

An **incentive** is something that induces a person to act, such as the prospect of a punishment or reward. People respond to incentives if they make decisions by comparing costs and benefits. Incentives play a central role in economics. One economist went so far as to say that the entire field could be summarized as simply, "People respond to incentives. The rest is commentary."

incentive
something that induces a person to act

Incentives are key to analyzing how markets work. For example, when the price of apples rises, people decide to eat fewer apples. At the same time, apple orchards decide to hire more workers and harvest more apples. In other words, a higher price provides an incentive for buyers to consume less and for sellers to produce more. As we will see, the influence of prices on the behavior of consumers and producers is crucial to how a market economy allocates scarce resources.

Public policymakers need to pay attention to incentives: Many policies change the costs or benefits that people face and, as a result, alter their behavior. A tax on gasoline, for instance, encourages people to drive more fuel-efficient cars and shift to electric ones. That is one reason many people drive electric cars in Norway, where gas taxes are high, and why big SUVs are so popular in the United States, where gas taxes are low. A higher gas tax also encourages people to carpool, take public transportation, ride bikes, and live closer to work.

When policymakers fail to consider incentives, the policies they enact may have unintended consequences. For example, consider auto safety. Today, all cars have seat belts, but this wasn't true 60 years ago. In 1965, Ralph Nader's book *Unsafe at Any Speed* generated much public concern over auto safety. Congress responded with laws requiring seat belts as standard equipment on new cars.

How does a seat belt law affect safety? The direct effect is obvious: When a person wears a seat belt, the likelihood of surviving an auto accident rises. But that's not the end of the story. The law also affects behavior by altering incentives. The relevant behavior here is the speed and care with which drivers operate their cars. Driving slowly and carefully is costly because it uses the driver's time and energy. When deciding how to drive, rational people compare, perhaps unconsciously, the marginal benefit from safer driving with the marginal cost. They drive more slowly and carefully when the benefit of increased safety is high. For example, when road conditions are icy, people drive more attentively and at lower speeds than they do when road conditions are clear.

Consider how a seat belt law alters a driver's cost-benefit calculation. Buckling up makes accidents less costly by reducing the risk of injury or death. It is as if road conditions had improved: When conditions are safer, people drive faster and less carefully. That may be fine for motorists, whose risk of injury in an accident is reduced because of seat belts. But if faster, less careful driving leads to more accidents, the seat belt law adversely affects pedestrians, who are more likely to be in an accident but (unlike drivers) don't benefit from added protection.

This discussion of incentives and seat belts isn't idle speculation. In a classic 1975 study, the economist Sam Peltzman tested the theory and found that auto-safety

laws have had many of these effects. According to Peltzman, these laws give rise not only to fewer deaths per accident but also to more accidents. He concluded that the net result is little change in driver deaths and an increase in pedestrian deaths.

Peltzman's analysis of auto safety is an offbeat and controversial example of the principle that people respond to incentives. When analyzing any policy, it is important to consider not only the direct effects but also the indirect effects that work through incentives. If the policy alters incentives, people may change their behavior.

QuickQuiz

1. Economics is best defined as the study of
 - a. how society manages its scarce resources.
 - b. how to run a business most profitably.
 - c. how to predict inflation, unemployment, and stock prices.
 - d. how the government can protect people from unchecked self-interest.
2. Your opportunity cost of going to a movie is
 - a. the price of the ticket.
 - b. the price of the ticket plus the cost of any soda and popcorn you buy at the theater.
 - c. the total cash expenditure needed to go to the movie plus the value of your time.
 - d. zero, as long as you enjoy the movie and consider it a worthwhile use of time and money.
3. A marginal change is one that
 - a. is not important for public policy.
 - b. incrementally alters an existing plan.
 - c. makes an outcome inefficient.
 - d. does not influence incentives.
4. Because people respond to incentives,
 - a. policymakers can alter outcomes by changing punishments or rewards.
 - b. policies can have unintended consequences.
 - c. society faces a trade-off between efficiency and equality.
 - d. All of the above are correct.

Answers are at the end of the chapter.

1-2 How People Interact

The first four principles discussed how individuals make decisions. The next three concern how people interact with one another.

1-2a Principle 5: Trade Can Make Everyone Better Off

You may have heard on the news that China is the United States' competitor in the world economy. In some ways, this is true. Chinese and U.S. companies compete for customers in the markets for clothing, toys, solar panels, automobile tires, and many other items.

Yet it is easy to be misled when thinking about competition among countries. Trade between the United States and China is not like a sports contest in which one side wins and the other side loses. The opposite is true: Trade between two countries can make each country better off. Even when trade in the world economy is competitive, it can lead to a win-win outcome for the countries involved.

To see why, consider how trade affects a family. When family members look for jobs, they compete against the members of other families who are looking for jobs. Families also compete with one another when they go shopping because each wants to buy the best goods at the lowest prices. In a sense, each family in an economy competes with all other families.

Despite this competition, a family would not be better off isolating itself from other families. If it did, it would need to grow its own food, sew its own clothes, and build its own home. Clearly, a family gains much from being able to trade with others. Trade allows everyone to specialize in the activities they do best, whether it is farming, sewing, or home building. By trading with others, people can buy a greater variety of goods and services at a lower cost.

Like families, countries benefit from trading with one another. Trade allows countries to specialize in what they do best and to enjoy a greater variety of goods and services. The Chinese, as well as the French, Brazilians, and Nigerians, are as much the United States' partners in the world economy as they are its competitors.

1-2b Principle 6: Markets Are Usually a Good Way to Organize Economic Activity

The collapse of Communism in the Soviet Union and Eastern Europe in the late 1980s and early 1990s was one of the last century's transformative events. For the most part, countries in the Soviet bloc operated on the premise that government officials were in the best position to allocate the economy's scarce resources. These central planners decided what goods and services were produced, how much was produced, and who produced and consumed them. The theory behind central planning was that the government needed to organize economic activity to ensure the well-being of the country and of like-minded nations.

Most countries that once had centrally planned economies have now shifted toward market economies. In a **market economy**, the decisions of a central planner are replaced by those of millions of firms and households. Firms decide whom to hire and what to make. Households decide where to work and what to buy with their incomes. These firms and households interact in the marketplace, where prices and self-interest guide their decisions.

At first glance, the success of market economies may seem puzzling because no one appears to be looking out for the well-being of society as a whole. Competitive markets contain many buyers and sellers of numerous goods and services, all of them interested primarily in their own well-being. Yet despite decentralized decision making and self-interested decision makers, market economies have proven remarkably successful in organizing economic activity to promote prosperity.

In his 1776 book, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Adam Smith made the most famous observation in all of economics: Firms and households in competitive markets act as if they are guided by an "invisible hand" that leads them to desirable outcomes. One of the chief goals of this book is to understand how this invisible hand works its magic.

As you study economics, you will learn that prices are the instrument with which the invisible hand directs economic activity. In a competitive market, sellers look at the price when deciding how much to supply, and buyers look at the price when deciding how much to demand. As a result of their decisions, the price reflects both the sellers' costs of production and the value of the good to the buyers. Smith's great insight was that prices adjust to guide market participants to reach outcomes that, in many cases, maximize the well-being of society as a whole.

Smith's insight has an important corollary: When a government prevents prices from adjusting to supply and demand, it impedes the invisible hand's ability to coordinate the decisions of the firms and households that make up an economy. This corollary explains the adverse effect of most taxes on the allocation of resources:



"For \$5 a week you can watch baseball without being nagged to cut the grass!"

market economy

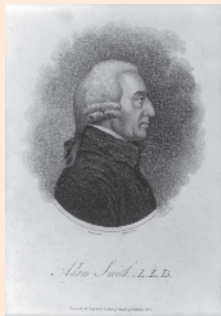
an economy that allocates resources through the decentralized decisions of many firms and households as they interact in markets for goods and services

FYI

Adam Smith and the Invisible Hand

It may be only a coincidence that Adam Smith's great book *The Wealth of Nations* was published in 1776, the exact year in which American revolutionaries signed the Declaration of Independence. But the two documents share a point of view that was prevalent at the time: Individuals are usually best left to their own devices, without the heavy hand of government directing their actions. This philosophy provides the intellectual foundation for the market economy and, more generally, for a free society.

Why do decentralized market economies work reasonably well? Is it because people can be trusted to treat one another with love, kindness, and generosity? Not at all. Here is Adam Smith's description of how people interact in a market economy:



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Adam Smith

Man has almost constant occasion for the help of his brethren, and it is in vain for him to expect it from their benevolence only. He will be more likely to prevail if he can interest their self-love in his favour, and show them that it is for their own advantage to do for him what he requires of them. . . . Give me that which I want, and you shall have this which you want, is

the meaning of every such offer; and it is in this manner that we obtain from one another the far greater part of those good offices which we stand in need of.

It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages. Nobody but a beggar chooses to depend chiefly upon the benevolence of his fellow-citizens. . . .

Every individual . . . neither intends to promote the public interest, nor knows how much he is promoting it. . . . He intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it.

Smith is saying that participants in the economy are motivated by self-interest and that the “invisible hand” of the marketplace guides them into promoting general economic well-being.

Many of Smith's insights remain at the center of modern economics. The coming chapters will express Smith's conclusions more precisely and analyze more fully the strengths and weaknesses of the market's invisible hand. ■

Taxes distort prices and the decisions of firms and households. It also explains the problems caused by policies that dictate prices, such as rent control. And it explains the economic failure of Communist countries, where prices were set not in the marketplace but by central planners. These planners lacked the overwhelming amount of complex and ever-changing information about producers' costs and consumers' tastes, which, in a market economy, is reflected in prices. Central planners failed because they tried to run the economy with one hand tied behind their backs—the invisible hand of the marketplace.

Case Study

Adam Smith Would Have Loved Uber

You may have never lived in a centrally planned economy, but if you have tried to hail a cab in a major city, you have likely experienced a highly regulated market. In many cities, the local government imposes strict controls in the market for taxis. The rules usually go well beyond the regulation of insurance and safety. For example, the government may limit entry

into the market by approving only a certain number of taxi medallions or permits. It may determine the prices that taxis are allowed to charge. The government uses its police powers—that is, the threat of fines or jail time—to keep unauthorized drivers off the streets and prevent drivers from charging unauthorized prices.

In 2009, however, this highly controlled market was invaded by a disruptive force: Uber, a company that provides a smartphone app to connect passengers and drivers. Because Uber cars do not roam the streets looking for taxi-hailing pedestrians, they are technically not taxis and so are not subject to the same regulations. But they offer a similar service. Indeed, rides from Uber—and from Uber’s competitors that have since entered many markets—are often more convenient. On a cold, rainy day, who wants to wait by the side of the road for an empty cab to drive by? It is more pleasant to remain inside, use a smartphone to arrange a ride, and stay warm and dry until the car arrives.

Uber cars often charge less than taxis, but not always. Uber’s prices rise significantly when there is a surge in demand, such as during a sudden rainstorm or late on New Year’s Eve, when numerous tipsy partygoers are looking for a safe way to get home. By contrast, regulated taxis are typically prevented from surge pricing.

Not everyone is fond of Uber. Drivers of traditional taxis complain that this new competition reduces their income. This is hardly a surprise: Suppliers of goods and services often dislike new competitors. But vigorous competition among producers makes a market work well for consumers.

That is why economists embraced Uber’s entry into the market. A 2014 survey of several dozen prominent economists asked whether car services such as Uber increased consumer well-being. Every single economist said “Yes.” The economists were also asked whether surge pricing increased consumer well-being. “Yes,” said 85 percent of them. Surge pricing makes consumers pay more at times, but because Uber drivers respond to incentives, it also increases the quantity of car services supplied when they are most needed. Surge pricing also helps allocate the services to those consumers who value them most highly and reduces the costs of searching and waiting for a car.

If Adam Smith were alive today, he would surely have a ride-sharing app on his phone. ●

1-2c Principle 7: Governments Can Sometimes Improve Market Outcomes

If the invisible hand is so great, what is left for a government to do in an economy? One purpose of studying economics is to refine your view about the proper role and scope of government policy.

One reason we need government is that the invisible hand can work its magic only if the government enforces the rules and maintains the institutions that are key to a market economy. Most importantly, market economies need institutions to enforce **property rights** so individuals can own and control scarce resources. Farmers won’t grow food if they expect their crop to be stolen, restaurants won’t serve meals if many customers leave before paying, and film companies won’t produce movies if too many people pirate copies. Market participants rely on government-provided police and courts to enforce their rights, and the invisible hand works well only if the legal system does.

Another reason we need government is that the invisible hand, while powerful, is not omnipotent. There are two broad rationales for a government to intervene in the economy and change the allocation of resources that people would choose on



RICHARD LEVINE/ALAMY STOCK PHOTO

Technology can improve this market.

property rights

the ability of an individual to own and exercise control over scarce resources