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macroeconomics

Macroeconomics

PRINCIPLES, PROBLEMS, AND POLICIES

Macroeconomics

PRINCIPLES, PROBLEMS, AND POLICIES

Twentieth Edition

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Mc Graw Hill Education

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THE SIX VERSIONS OF MCCONNELL, BRUE, FLYNN

Chapter*	*Economics*	*Microeconomics*	*Microeconomics: Brief Edition*	*Macroeconomics*	*Macroeconomics: Brief Edition*	*Essentials of Economics*
1. Limits, Alternatives, and Choices	x	x	x	x	x	x
2. The Market System and the Circular Flow	x	x	x	x	x	x
3. Demand, Supply, and Market Equilibrium	x	x	x	x	x	x
4. Market Failures: Public Goods and Externalities	x	x	**x**	x	x	**x**
5. Government's Role and Government Failure	x	x	**x**	x	**x**	**x**
6. Elasticity	x	x	**x**			**x**
7. Utility Maximization	x	x				
8. Behavioral Economics	x	x				
9. Businesses and the Costs of Production	x	x	**x**			x
10. Pure Competition in the Short Run	x	x	**x**			**x**
11. Pure Competition in the Long Run	x	x	**x**			**x**
12. Pure Monopoly	x	x	x			x
13. Monopolistic Competition and Oligopoly	x	x	x			x
13W. Technology, R&D, and Efficiency (Web Chapter)	x	x				
14. The Demand for Resources	x	x				
15. Wage Determination	x	x	x			x
16. Rent, Interest, and Profit	x	x				
17. Natural Resource and Energy Economics	x	x				
18. Public Finance: Expenditures and Taxes	x	x	**x**			
19. Antitrust Policy and Regulation	x	x				
20. Agriculture: Economics and Policy	x	x				
21. Income Inequality, Poverty, and Discrimination	x	x	**x**			**x**
22. Health Care	x	x				
23. Immigration	x	x				
24. An Introduction to Macroeconomics	x			x		
25. Measuring Domestic Output and National Income	x			x	**x**	**x**
26. Economic Growth	x			x	**x**	**x**
27. Business Cycles, Unemployment, and Inflation	x			x	x	x
28. Basic Macroeconomic Relationships	x			x		
29. The Aggregate Expenditures Model	x			x		
30. Aggregate Demand and Aggregate Supply	x			x	x	x
31. Fiscal Policy, Deficits, and Debt	x			x	x	x
32. Money, Banking, and Financial Institutions	x			x	x	x
33. Money Creation	x			x		
34. Interest Rates and Monetary Policy	x			x	x	x
35. Financial Economics	x			x		
36. Extending the Analysis of Aggregate Supply	x			x	**x**	
37. Current Issues in Macro Theory and Policy	x			x		
38. International Trade	x	x	**x**	x	**x**	**x**
39. The Balance of Payments, Exchange Rates, and Trade Deficits	x	x	**x**	x	**x**	**x**
39W. The Economics of Developing Countries (Web Chapter)	x			x		

*Chapter numbers refer to *Economics: Principles, Problems, and Policies.*
A red "**X**" indicates chapters that combine or consolidate content from two or more *Economics* chapters.

MACROECONOMICS: PRINCIPLES, PROBLEMS, AND POLICIES, TWENTIETH EDITION

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To Mem and to Terri and Craig, and to past instructors

ABOUT THE AUTHORS

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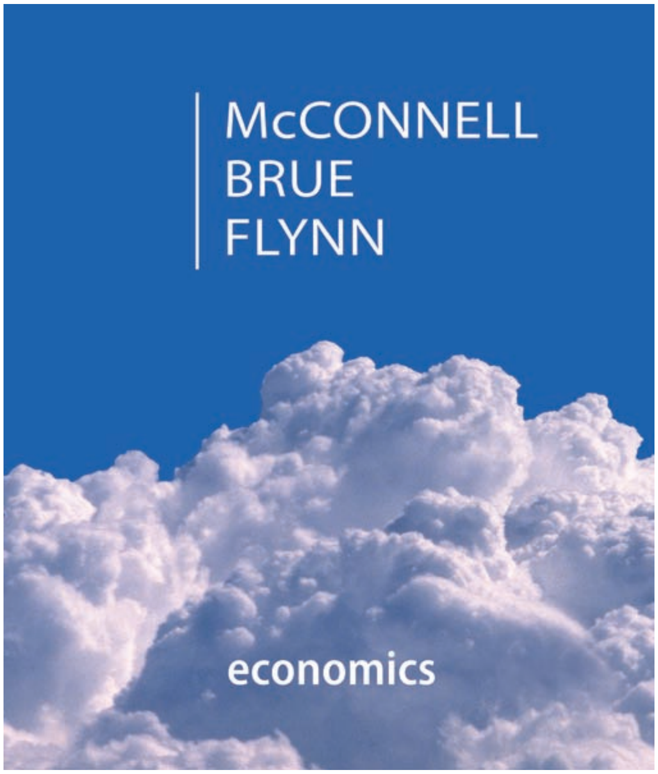
SEAN M. FLYNN did his undergraduate work at the University of Southern California before completing his Ph.D. at U.C. Berkeley, where he served as the Head Graduate Student Instructor for the Department of Economics after receiving the Outstanding Graduate Student Instructor Award. He teaches at Scripps College (of the Claremont Colleges) and is the author of *Economics for Dummies* (Wiley) and coauthor of *Essentials of Economics*, second edition; *Macroeconomics: Brief Edition;* and *Microeconomics: Brief Edition* (all The McGraw-Hill Companies). His research interests include finance, behavioral economics, and health economics. An accomplished martial artist, he has represented the United States in international aikido tournaments and is the author of *Understanding Shodokan Aikido* (Shodokan Press). Other hobbies include running, traveling, and enjoying ethnic food.

LIST OF KEY GRAPHS

PREFACE



Welcome to the 20th edition of *Economics*, the best-selling economics textbook in the world. An estimated 15 million students have used *Economics* or its companion editions, *Macroeconomics* and *Microeconomics*. *Economics* has been adapted into Australian and Canadian editions and translated into Italian, Russian, Chinese, French, Spanish, Portuguese, and other languages. We are pleased that *Economics* continues to meet the market test: nearly one out of five U.S. students in principles courses used the 19th edition.

Fundamental Objectives

We have three main goals for *Economics:*

- Help the beginning student master the principles essential for understanding the economizing problem, specific economic issues, and policy alternatives.
- Help the student understand and apply the economic perspective and reason accurately and objectively about economic matters.
- Promote a lasting student interest in economics and the economy.

Student Feedback

The twentieth edition has a renewed focus on today's students and their various approaches to learning. How do today's students study? How are they using mobile technology? When are they using the textbook, and how are they using the textbook? To help answer these questions, McGraw-Hill and author Sean Flynn formed a Student Advisory Board consisting of students from Belmont University, the University of Louisiana–Lafayette, Tarrant County College, and West Virginia University Institute of Technology. The Student Advisory Board participated in a wide variety of evaluation and testing activities over six months and provided targeted recommendations to improve the 20th edition and its ancillary learning materials. Their feedback was incredibly valuable, and the authors incorporated their suggestions in this revision.

What's New and Improved?

One of the benefits of writing a successful text is the opportunity to revise—to delete the outdated and install the new, to rewrite misleading or ambiguous statements, to introduce more relevant illustrations, to improve the organizational structure, and to enhance the learning aids.

We trust that you will agree that we have used this opportunity wisely and fully. Some of the more significant changes include the following.

Restructured Introductory Chapters

We have divided the five-chapter grouping of introductory chapters common to *Economics*, *Microeconomics*, and *Macroeconomics* into two parts. Part 1 contains Chapter 1 (Limits, Alternatives, and Choices) and Chapter 2 (The Market System and the Circular Flow). The content in Part 2 has changed and now consists of the following three chapters: Chapter 3 (Demand, Supply, and Market Equilibrium), Chapter 4 (Market Failures: Public Goods and Externalities), and Chapter 5 (Government's Role and Government Failure).

As restructured, the three chapters that now form Part 2 give students a panorama of:

- The efficiency and allocation benefits of competitive markets.
- How and why governments can help when there are cases of market failure.
- An appreciation of government failure so that students do not assume that government intervention is an easy or guaranteed panacea for the misallocations and inefficiencies caused by market failure.

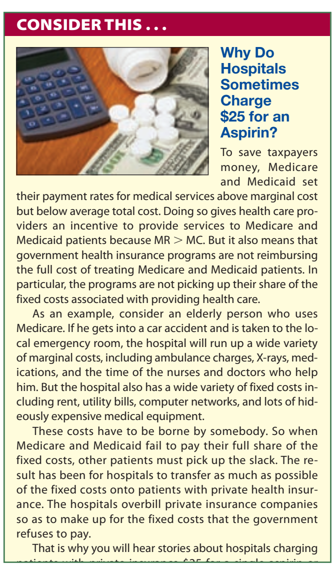
Our new approach responds to suggestions by reviewers to:

- Move the elasticity chapter back into *Microeconomics*.
- Boost the analysis of government failure to help students better understand many of the problems currently besetting the U.S. economy.

Our new approach embraces these suggestions. For microeconomics instructors, the new ordering provides a clear supply-and-demand path to the subsequent chapters on consumer and producer behavior while also giving students a stronger policy background on not only market failures but government interventions in the economy and whether they are likely to improve efficiency. For macroeconomics instructors, the new sequence provides a theoretical grounding that can help students better understand issues such as excessive government deficit spending and why there may be insufficient regulation of the financial sector. And because Chapters 4 and 5 are both optional and modular, instructors can skip them if they wish to move directly from Chapter 3's discussion of supply and demand to the core microeconomics or macroeconomics chapters.

New "Consider This" and "Last Word" Pieces

Our "Consider This" boxes are used to provide analogies, examples, or stories that help drive home central economic ideas in a student-oriented, real-world manner.


CONSIDER THIS . . .

Why Do Hospitals Sometimes Charge $25 for an Aspirin?

To save taxpayers money, Medicare and Medicaid set their payment rates for medical services above marginal cost but below average total cost. Doing so gives health care providers an incentive to provide services to Medicare and Medicaid patients because MR > MC. But it also means that government health insurance programs are not reimbursing the full cost of treating Medicare and Medicaid patients. In particular, the programs are not picking up their share of the fixed costs associated with providing health care.

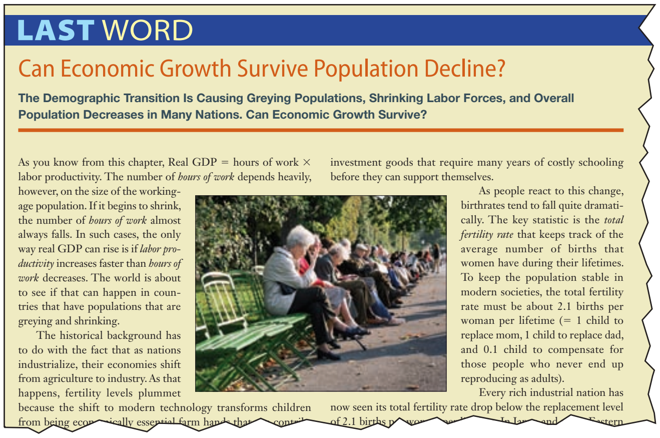
As an example, consider an elderly person who uses Medicare. If he gets into a car accident and is taken to the local emergency room, the hospital will run up a wide variety of marginal costs, including ambulance charges, X-rays, medications, and the time of the nurses and doctors who help him. But the hospital also has a wide variety of fixed costs including rent, utility bills, computer networks, and lots of hideously expensive medical equipment.

These costs have to be borne by somebody. So when Medicare and Medicaid fail to pay their full share of the fixed costs, other patients must pick up the slack. The result has been for hospitals to transfer as much as possible of the fixed costs onto patients with private health insurance. The hospitals overbill private insurance companies so as to make up for the fixed costs that the government refuses to pay.

That is why you will hear stories about hospitals charging

For instance, a "Consider This" box titled "McHits and McMisses" illustrates consumer sovereignty through a listing of successful and unsuccessful products. How businesses exploit price discrimination is driven home in a "Consider This" box that explains why ballparks charge different admission prices for adults and children but only one set of prices at their concession stands. These brief vignettes, each accompanied by a photo, illustrate key points in a lively, colorful, and easy-to-remember way. We have added 14 new "Consider This" boxes in this edition.

Our "Last Word" pieces are lengthier applications or case studies that are placed near the end of each chapter.


LAST WORD

Can Economic Growth Survive Population Decline?

The Demographic Transition Is Causing Greying Populations, Shrinking Labor Forces, and Overall Population Decreases in Many Nations. Can Economic Growth Survive?

As you know from this chapter, Real GDP = hours of work × labor productivity. The number of *hours of work* depends heavily, however, on the size of the working-age population. If it begins to shrink, the number of *hours of work* almost always falls. In such cases, the only way real GDP can rise is if *labor productivity* increases faster than *hours of work* decreases. The world is about to see if that can happen in countries that have populations that are greying and shrinking.

The historical background has to do with the fact that as nations industrialize, their economies shift from agriculture to industry. As that happens, fertility levels plummet because the shift to modern technology transforms children from being economically essential farm hands that contri- investment goods that require many years of costly schooling before they can support themselves.

As people react to this change, birthrates tend to fall quite dramatically. The key statistic is the *total fertility rate* that keeps track of the average number of births that women have during their lifetimes. To keep the population stable in modern societies, the total fertility rate must be about 2.1 births per woman per lifetime (= 1 child to replace mom, 1 child to replace dad, and 0.1 child to compensate for those people who never end up reproducing as adults).

Every rich industrial nation has now seen its total fertility rate drop below the replacement level of 2.1 births per woman

For example, the "Last Word" section for Chapter 1 (Limits, Alternatives, and Choices) examines pitfalls to sound economic reasoning, while the "Last Word" section for Chapter 4 (Market Failures: Public Goods and Externalities) examines cap-and-trade versus carbon taxes as policy responses to excessive carbon dioxide emissions. There are 14 new "Last Word" sections in this edition.

If you are unfamiliar with *Economics*, we encourage you to thumb through the chapters to take a quick look at these highly visible features.

New Chapter on Government's Role and Government Failure

We have responded to instructor suggestions by placing this new chapter on Government's Role and Government Failure into the introductory section of the book. Its early placement gives students a taste of political economy and the practical difficulties with government regulation and intervention. Topics covered include the special-interest effect, rent seeking, regulatory capture, political corruption, unfunded liabilities, and unintended consequences.

The chapter begins, however, by reminding students of government's great power to improve equity and efficiency. When read along with Chapter 4 on market failure, this new chapter on government failure should provide students with a balanced perspective. After learning why government intervention is needed to counter market failures, they will also learn that governments often have difficulty in fulfilling their full potential for improving economic outcomes.

An optional appendix incorporates the material on public choice theory and voting paradoxes that was formerly located in Chapter 17 of the 19th edition. Instructors wishing to give their students an even deeper appreciation of government failure may wish to assign this material.

Meanwhile, the material on asymmetric information that was located in Chapter 17 of the 19th edition has been moved into an appendix attached to the current edition's Chapter 4 on market failure. That way, instructors wishing to give their students a deeper look at market failure will have the material on asymmetric information located immediately after that chapter's discussion of public goods and externalities.

New Chapter on Behavioral Economics

By building upon the material on prospect theory that appeared in Chapter 6 of the 19th edition, we have created a new full-length chapter on behavioral economics for the 20th edition. Topics covered include time inconsistency, myopia, decision-making heuristics, framing effects, mental accounting, loss aversion, the endowment effect, and reciprocity. The discussion is couched in terms of consumer decision making and includes numerous concrete examples to bring the material home for students.

We have also striven to make clear to students the ways in which behavioral economics builds upon and augments the insights of traditional neoclassical economics. Thus, the chapter opens with a section comparing and contrasting behavioral economics and neoclassical economics so that students will be able to see how both can be used in tandem to help understand and predict human choice behavior.

The chapter is designed, however, to be modular. So instructors may skip it completely without any fear that its concepts are needed to understand subsequent chapters.

New Discussions of the Financial Crisis and the Recession

Our modernization of the macroeconomics in the 18th edition has met with great success, measured by reviews, instructor feedback, and market response. We recast the entire macro analysis in terms of the modern, dominant paradigm of macroeconomics, using economic growth as the central backdrop and viewing business fluctuations as significant and costly variations in the rate of growth. In this paradigm, business cycles result from demand shocks (or, less often, supply shocks) in conjunction with inflexible short-run product prices and wages. The degree of price and wage stickiness decreases with time. In our models, the *immediate short run* is a period in which both the price level and wages are not only sticky, but stuck; the *short run* is a period in which product prices are flexible but wages are not; and the *long run* is a period in which both product prices and wages are fully flexible. Each of these three periods—and thus each of the models based on them—is relevant to understanding the actual macro economy and its occasional difficulties.

In this edition, we have mainly focused on incorporating into our new macroeconomic schema an analysis of the financial crisis, the recession, and the hesitant recovery. We first introduce the debate over the policy response to the 2007–2009 recession in Chapter 24 (An Introduction to Macroeconomics) via a new "Last Word" that briefly lays out the major opposing viewpoints about the nature and size of the stimulus that was applied during and after the crisis. In Chapter 25 (Measuring Domestic Output and National Income), we point out that the main flows in the National Income and Product Accounts usually expand over time, but not always, as demonstrated by the recession. In Chapter 26 (Economic Growth), we discuss how the recession relates to the growth/production possibilities dynamics of Figure 26.2. In Chapter 27 (Business Cycles, Unemployment, and Inflation), we have a new "Last Word" that discusses the very slow recovery in employment after the Great Recession.

In Chapter 28 (Basic Macroeconomic Relationships), we include two "Consider This" boxes, one on how the paradox of thrift applied to consumer behavior during the recession and the other on the riddle of plunging investment spending at the same time the interest rate dropped to near zero during the recession. In Chapter 29 (The Aggregate Expenditures Model), we use the recession as a timely application of how a decline in aggregate expenditures can produce a recessionary expenditure gap and a highly negative GDP gap. Chapter 30 (Aggregate Demand and Aggregate Supply) features a new "Last Word" on the debate among economists as to why the recovery from the 2007–2009 recession was so slow despite the historically unprecedented amounts of monetary and fiscal stimulus that were applied by policymakers. Chapter 31 (Fiscal Policy, Deficits, and Debt) provided a terrific opportunity to bring each of these timely and relevant subjects up-to-date, and we took full advantage of that opportunity.

In Chapter 32 (Money, Banking, and Financial Institutions), we updated the major section on the financial crisis and added a new "Last Word" on whether the existence of megabanks that are considered "too big to fail" has led prosecutors to hold off on the full enforcement of securities laws and banking regulations. Chapter 33 (Money Creation) includes a new "Last Word" on the potential dangers of excessive leverage in the financial system and whether, consequently, regulators should increase required reserve ratios.

Chapter 34 (Interest Rates and Monetary Policy) features several new discussions relating to Fed policies during the recession and recovery, including quantitative easing, the zero interest rate policy, and Operation Twist. While giving the Fed high marks for dealing with the crisis and its aftermath, we also point out that some economists think the Fed contributed to the financial crisis by keeping interest rates too low for too long during the recovery from the 2001 recession. Chapter 35 (Financial Economics) presented a new opportunity for us to demonstrate how a sharp decline of the "appetite for risk" alters the slope of the Security Market Line (SML) and changes investment patterns between stocks and bonds.

Other mentions of the recession and subsequent recovery are spread throughout the remainder of the macro chapters, including in the discussions of macro debates, trade protectionism, and trade deficits. Although we found these various ways to work the recession and recovery into our macro chapters, we are confident that our basic macroeconomic models will serve equally well in explaining expansion back to the economy's historical growth path. The new inclusions simply help students see the relevance of the models to what they are seeing in the news and perhaps experiencing in their own lives. The overall tone of the book, including the macro, continues to be optimistic with respect to the long-term growth prospects of market economies.

Reorganized and Extended End-of-Chapter Questions and Problems

The 19th edition featured separate sections for end-of-chapter Questions and Problems. Due to strong demand on the part of instructors for an increase in the number of problems that are both autogradable and algorithmic, we have for the 20th edition added about 10 new problems per chapter and have, in addition, revised our organizational scheme for questions and problems.

The questions and problems are now divided into three categories: Discussion Questions, Review Questions, and Problems.

- The Discussion Questions are analytic and often allow for free responses.
- The Review Questions focus on the apprehension of key concepts but are worded so as to always require specific answers, thereby allowing for autograding and algorithmic variation.
- The Problems are quantitative and require specific answers so that they, too, are both autogradable and algorithmic.

All of the questions and problems are assignable through McGraw-Hill's *Connect Economics* and we have additionally aligned all of the questions and problems with the learning objectives presented at the beginning of chapters. The new structure as well as the newly added problems were well received by reviewers, many of them long-time users of the book.

Current Discussions and Examples

The 20th edition of *Economics* refers to and discusses many current topics. Examples include surpluses and shortages of tickets at the Olympics; the myriad impacts of ethanol subsidies; creative destruction; applications of behavioral economics; applications of game theory; the most rapidly expanding and disappearing U.S. jobs; oil and gasoline prices; cap-and-trade systems and carbon taxes; the value-added tax; state lotteries; consumption versus income inequality; the impact of electronic medical records on health care costs; the surprising fall in illegal immigration after the 2007–2009 recession; the massive increase in long-term unemployment; the difficulty of targeting fiscal stimulus; the rapid rise in college tuition; the slow recovery from the Great Recession; ballooning federal budget deficits and public debt; the long-run funding shortfalls in Social Security and Medicare; the effect of rising dependency ratios on economic growth; innovative Federal Reserve policies including quantitative easing, the zero interest rate policy, and explicit inflation targets; the massive excess reserves in the banking system; the jump in the size of the Fed's balance sheet; the effect of the zero interest rate policy on savers; regulation of "too big to fail" banks; trade adjustment assistance; the European Union and the eurozone; changes in exchange rates; and many other current topics.

Chapter-by-Chapter Changes

Each chapter of *Macroeconomics*, 20th edition, contains updated data reflecting the current economy, revised Learning Objectives, and reorganized and expanded end-of-chapter content. Several chapters also contain one or more additional Quick Review boxes to help students review and solidify content as they are reading along.

Chapter-specific updates include:

Chapter 1: Limits Alternatives, and Choices features three refreshed "Consider This" pieces, a more concise definition of macroeconomics, and wording improvements that clarify the main concepts.

Chapter 2: The Market System and the Circular Flow contains a heavily revised introductory section on the different types of economic systems found in the world today as well as a new section on how the market system deals with risk and uncertainty. Reviewers asked for more material on risk and its effects on economic behavior. This short section provides a brief, nontechnical framework for students to understand how the market economy deals with risk and uncertainty. There is also a new "Consider This" box on how insurance encourages investment by transferring risk from those who do not wish to bear it to those who are willing to bear it as a business proposition.

Chapter 3: Demand, Supply, and Market Equilibrium contains a short new section in the appendix that introduces students to markets with vertical supply curves so that the concept of perfectly inelastic supply will come more easily to microeconomics students and the concept of vertical long-run aggregate supply will come more easily to macroeconomics students.

Chapter 4: Market Failures: Public Goods and Externalities includes a new "Consider This" piece on how musicians have reacted to the reality that Internet file sharing has transformed recorded music from a private good into a public good. There is also a new appendix that explains market failures caused by asymmetric information. The appendix gives instructors the option of extending and deepening this chapter's study of market failure. Its content previously appeared in Chapter 17 of the 19th edition.

Chapter 5: Government's Role and Government Failure is a new chapter that offers a balanced treatment of both the great benefits as well as the possible drawbacks of government economic intervention and regulation. The chapter includes topics of interest for both microeconomics and macroeconomics students, such as: regulatory capture, unfunded liabilities, the collective-action problem, bureaucratic inertia, the tendency for politicians to run budget deficits to please voters, and the special-interest effect. So while Chapter 4 makes the case for government regulation to compensate for market failures, this new chapter introduces students to the fact that government interventions are themselves susceptible to both allocative and productive inefficiency. As noted previously, the chapter also includes an appendix that incorporates the voting and public choice material that appeared in Chapter 17 of the 19th edition for instructors who wish to present their students with the most prominent theoretical models dealing with government failure.

Chapter 6: An Introduction to Macroeconomics benefits from extensive revisions to the chapter's header structure, several new Quick Reviews, and a new "Last Word" that covers in a brief and accessible form the major opposing policy viewpoints about the effectiveness and ideal size of government stimulus during and after the 2007–2009 recession.

Chapter 7: Measuring Domestic Output and National Income features two clarifications driven directly by student input. First, the table giving U.S. GDP by both the expenditure method and the income method is more clearly referenced in all instances so as to reduce any possible confusion as to which part of the table is being referred to. Second, there is now a more detailed explanation of the statistical discrepancy that appears when the income method is used to calculate GDP.

Chapter 8: Economic Growth benefits from extensive data updates, a new Quick Review to help solidify comprehension, and a new "Last Word" that discusses the challenges to economic growth posed by falling birth rates and a greying population.

Chapter 9: Business Cycles, Unemployment, and Inflation features a new "Last Word" on the slow recovery of employment after the Great Recession. There are also two new "Consider This" vignettes that discuss, respectively, the relationship between downwardly sticky wages and unemployment and the idea that moderate inflation rates may help to lower unemployment by allowing firms to cut real wages without cutting nominal wages.

Chapter 10: Basic Macroeconomic Relationships features a revised header structure to better guide students through the material, a new Quick Review to help solidify retention, and substantial revisions to several graphs and their captions to further refine and clarify the fundamental concepts introduced in this chapter.

Chapter 11: The Aggregate Expenditures Model has substantial changes to a key figure in order to improve clarity as well as a heavily revised list of Learning Objectives.

Chapter 12: Aggregate Demand and Aggregate Supply features a new "Last Word" on the discussion economists have been having as to why the recovery from the Great Recession has been so slow despite record amounts of monetary and fiscal stimulus.

Chapter 13: Fiscal Policy, Deficits, and Debt features extensive data updates to help students understand the historically unprecedented size of recent federal budget deficits.

Chapter 14: Money, Banking, and Financial Institutions features a new "Last Word" on how some banks are now considered "too big to fail" and how that has affected the prosecution of financial crimes. The chapter also contains four new Quick Reviews to help students better retain the chapter's material.

Chapter 15: Money Creation features a new "Last Word" on the dangers of leverage in the banking system and whether required reserve ratios should consequently be increased.

Chapter 16: Interest Rates and Monetary Policy features a new section on the Fed's monetary policy initiatives after the Great Recession, including quantitative easing (QE), forward guidance, the zero interest rate policy (ZIRP), and Operation Twist. There is also a new "Last Word" discussing the potential unintended consequences of QE and ZIRP.

Chapter 17: Financial Economics features extensive data updates, five new Quick Reviews, and revised section headers to increase clarity.

Chapter 18: Extending the Analysis of Aggregate Supply features data updates, an extended discussion of the Laffer Curve, and a new Quick Review.

Chapter 19: Current Issues in Macro Theory and Policy has a new Quick Review plus a brief discussion of the Fed's recent decisions to (1) have an explicit inflation target and (2) preannounce the likely duration of open-market operations and quantitative easing.

Chapter 20: International Trade features extensive data updates, several revised figure captions, and three new Quick Reviews.

Chapter 21: The Balance of Payments, Exchange Rates, and Trade Deficits features revised problems, extensive data updates, four new Quick Reviews, and a new set of Learning Objectives.

Chapter 21 Web: The Economics of Developing Countries features extensive data revisions and an all-new set of Discussion Questions.

COI1: The United States in the Global Economy features a heavily revised map of the international distribution of income levels, a totally new set of Discussion Questions, and extensive data updates.

COI2: Previous International Exchange Rate Systems remains unchanged for the 20th edition.

Distinguishing Features

Comprehensive Explanations at an Appropriate Level *Economics* is comprehensive, analytical, and challenging yet fully accessible to a wide range of students. The thoroughness and accessibility enable instructors to select topics for special classroom emphasis with confidence that students can read and comprehend other independently assigned material in the book. Where needed, an extra sentence of explanation is provided. Brevity at the expense of clarity is false economy.

Fundamentals of the Market System Many economies throughout the world are still making difficult transitions from planning to markets while a handful of other countries such as Venezuela seem to be trying to reestablish government-controlled, centrally planned economies. Our detailed description of the institutions and operation of the market system in Chapter 2 (The Market System and the Circular Flow) is therefore even more relevant than before. We pay particular attention to property rights, entrepreneurship, freedom of enterprise and choice, competition, and the role of profits because these concepts are often misunderstood by beginning students worldwide.

Extensive Treatment of International Economics We give the principles and institutions of the global economy extensive treatment. The appendix to Chapter 3 (Demand, Supply, and Market Equilibrium) has an application on exchange rates. Chapter 20 (International Trade) examines key facts of international trade, specialization and comparative advantage, arguments for protectionism, impacts of tariffs and subsidies, and various trade agreements. Chapter 21 (The Balance of Payments, Exchange Rates, and Trade Deficits) discusses the balance of payments, fixed and floating exchange rates, and U.S. trade deficits. Web Chapter 21 (The Economics of Developing Countries) takes a look at the special problems faced by developing countries and how the advanced industrial countries try to help them.

As noted previously in this preface, Chapter 20 (International Trade) is constructed such that instructors who want to cover international trade early in the course can assign it immediately after Chapter 3. Chapter 20 requires only a good understanding of production possibilities analysis and supply and demand analysis to comprehend. International competition, trade flows, and financial flows are integrated throughout the micro and macro sections. "Global Perspective" boxes add to the international flavor of the book.

Early and Extensive Treatment of Government The public sector is an integral component of modern capitalism. This book introduces the role of government early. Chapter 4 (Market Failures: Public Goods and Externalities) systematically discusses public goods and government policies toward externalities. Chapter 5 (Government's Role and Government Failure) details the factors that cause government failure. Both the micro and the macro sections of the text include issue- and policy-oriented chapters.

Stress on the Theory of the Firm We have given much attention to microeconomics in general and to the theory of the firm in particular, for two reasons. First, the concepts of microeconomics are difficult for most beginning students; abbreviated expositions usually compound these difficulties by raising more questions than they answer. Second, we wanted to couple analysis of the various market structures with a discussion of the impact of each market arrangement on price, output levels, resource allocation, and the rate of technological advance.

Step-by-Step, Two-Path Macro As in the previous edition, our macro continues to be distinguished by a systematic step-by-step approach to developing ideas and building models. Explicit assumptions about price and wage stickiness are posited and then systematically peeled away, yielding new models and extensions, all in the broader context of growth, expectations, shocks, and degrees of price and wage stickiness over time.

In crafting this step-by-step macro approach, we took care to preserve the "two-path macro" that many instructors appreciated. Instructors who want to bypass the immediate short-run model (Chapter 11: The Aggregate Expenditures Model) can proceed without loss of continuity directly to the short-run AD-AS model (Chapter 12: Aggregate Demand and Aggregate Supply), fiscal policy, money and banking, monetary policy, and the long-run AD-AS analysis.

Emphasis on Technological Change and Economic Growth This edition continues to emphasize economic growth. Chapter 1 (Limits, Alternatives, and Choices) uses the production possibilities curve to show the basic ingredients of growth. Chapter 8 (Economic Growth) explains how growth is measured and presents the facts of growth. It also discusses the causes of growth, looks at productivity growth, and addresses some controversies surrounding economic growth. Chapter 8's "Last Word" examines whether economic growth can survive demographic decline. Web Chapter 21 focuses on developing countries and the growth obstacles they confront. *Microeconomics* Web Chapter 13 (Technology, R&D, and Efficiency) provides an explicit and cohesive discussion of the microeconomics of technological advance, including topics such as invention, innovation, and diffusion; start-up firms; R&D decision making; market structure and R&D effort; and creative destruction.

Focus on Economic Policy and Issues For many students, the micro chapters on antitrust, agriculture, income inequality, health care, and immigration, along with the macro chapters on fiscal policy and monetary policy, are where the action is centered. We guide that action along logical lines through the application of appropriate analytical tools. In the micro, we favor inclusiveness; instructors can effectively choose two or three chapters from *Microeconomics* Part 6.

Integrated Text and Web Site *Economics* and its Web site are highly integrated through in-text Web buttons, bonus Web chapters, multiple-choice self-tests at the Web site, math notes, and other features. Our Web site is part and parcel of our student learning package, customized to the book.

The in-text Web buttons (or indicators) merit special mention. Two differently colored rectangular indicators appear throughout the book, informing readers that complementary content on a subject can be found at our Web site, **www.mcconnell20e.com.** The indicator types are:

WORKED PROBLEMS

W1.1
Budget lines

Worked Problems Written by Norris Peterson of Pacific Lutheran University (WA), these pieces consist of side-by-side computational questions and computational procedures used to derive the answers. In essence, they extend the textbook's explanations of various computations—for example, of real GDP, real GDP per capita, the unemployment rate, the inflation rate, per-unit production costs, economic profit, and more. From a student's perspective, they provide "cookbook" help for solving numerical problems.

ORIGIN OF THE IDEA

O1.1
Origin of the term "economics"

Origin of the Ideas These pieces, written by Randy Grant of Linfield College (OR), are brief histories of 70 major ideas discussed in the book. They identify the particular economists who developed ideas such as opportunity cost, equilibrium price, the multiplier, comparative advantage, and elasticity.

Organizational Alternatives

Although instructors generally agree on the content of principles of economics courses, they sometimes differ on how to arrange the material. *Economics* includes 11 parts, and thus provides considerable organizational flexibility. We place microeconomics before macroeconomics because this ordering is consistent with how contemporary economists view the direction of linkage between the two components. The introductory material of Parts 1 and 2, however, can be followed immediately by the macroanalysis of Parts 7 and 8. Similarly, the two-path macro enables covering the full aggregate expenditures model or advancing directly from the basic macro relationships chapter to the AD-AS model.

Some instructors will prefer to intersperse the microeconomics of Parts 4 and 5 with the problems chapters of Part 6. Chapter 20 on agriculture may follow Chapters 10 and 11 on pure competition; Chapter 19 on antitrust and regulation may follow Chapters 12, 13, and 13Web on imperfect competition models and technological advance. Chapter 23 on immigration may follow Chapter 15 on wages; and Chapter 21 on income inequality may follow Chapters 15 and 16 on distributive shares of national income.

Instructors who teach the typical two-semester course and feel comfortable with the book's organization will find that, by putting Parts 1 to 6 in the first semester and Parts 7 to 11 in the second, the material is divided logically between the two semesters.

Finally, Chapter 38 on international trade can easily be moved up to immediately after Chapter 3 on supply and demand for instructors who want an early discussion of international trade.

Pedagogical Aids

Economics is highly student-oriented. The "To the Student" statement at the beginning of Part 1 details the book's many pedagogical aids. The 20th edition is also accompanied by a variety of high-quality supplements that help students master the subject and help instructors implement customized courses.

Supplements for Students and Instructors

Study Guide One of the world's leading experts on economic education, William Walstad of the University of Nebraska–Lincoln, prepared the *Study Guide*. Many students find either the printed or digital version indispensable. Each chapter contains an introductory statement, a checklist of behavioral objectives, an outline, a list of important terms, fill-in questions, problems and projects, objective questions, and discussion questions.

The *Guide* comprises a superb "portable tutor" for the principles student. Separate *Study Guides* are available for the macro and micro paperback editions of the text.

Instructor's Manual Shawn Knabb of Western Washington University revised and updated the *Instructor's Manuals* to accompany the 20th edition of the text. The revised *Instructor's Manual* includes:

- Chapter summaries.
- Listings of "what's new" in each chapter.
- Teaching tips and suggestions.
- Learning objectives.
- Chapter outlines.
- Extra questions and problems.
- Answers to the end-of-chapter questions and problems, plus correlation guides mapping content to the learning objectives.

The *Instructor's Manual* is available on the instructor's side of the Online Learning Center.

Three Test Banks Test Bank I contains about 6,500 multiple-choice and true-false questions, most of which were written by the text authors. Randy Grant revised Test Bank I for the 20th edition. Test Bank II contains around 6,000 multiple-choice and true-false questions, updated by Felix Kwan of Maryville University. All Test Bank I and II questions are organized by learning objective, topic, AACSB Assurance of Learning, and Bloom's Taxonomy guidelines. Test Bank III, written by William Walstad, contains more than 600 pages of short-answer questions and problems created in the style of the book's end-of-chapter questions. Test Bank III can be used to construct student assignments or design essay and problem exams. Suggested answers to the essay and problem questions are included. In all, more than 14,000 questions give instructors maximum testing flexibility while ensuring the fullest possible text correlation.

Test Banks I and II are available in *Connect Economics*, through EZ Test Online, and in MS Word. EZ Test allows professors to create customized tests that contain both questions that they select from the test banks as well as questions that they craft themselves. Test Bank III is available in MS Word on the password-protected instructor's side of the Online Learning Center, and on the Instructor Resource CD.

PowerPoint Presentations The PowerPoint Presentations for the 20th edition were updated by a dedicated team of instructors: Stephanie Campbell of Mineral Area College, Amy Chataginer of Mississippi Gulf Coast Community College, and Shannon Aucoin of the University of Louisiana at Lafayette. Each chapter is accompanied by a concise yet thorough tour of the key concepts.

Instructors can use these Web site presentations in the classroom, and students can use them on their computers.

Digital Image Library Every graph and table in the text is available on the instructor's side of the Web site and on the Instructor's Resource CD-ROM.

Scanning Barcodes For students using smartphones and tablets, scanning barcodes (or QR codes) located within the chapter guide students to additional chapter resources, including:

Try It Now!

- Web buttons
- Student PowerPoints
- Worked problems

Students not using smartphones or tablets can access the same resources by clicking the barcodes when viewing the eBook or by going to **www.mcconnell20e.com.**

Online Learning Center (www.mcconnell20e.com) The Web site accompanying this book is a central resource for students and instructors alike. The optional Web Chapters (Technology, R&D, and Efficiency and The Economics of Developing Countries) plus the two Content Options for Instructors (The United States in the Global Economy and Previous International Exchange-Rate Systems), are posted as full-color PDF files. The in-text Web buttons alert the students to points in the book where they can springboard to the Web site to get more information. Students can also review PowerPoint presentations and test their knowledge of a chapter's concepts with a self-graded multiple-choice quiz. The password-protected Instructor Center houses the Instructor's Manual, all three Test Banks, and links to EZ Test Online, PowerPoint presentations, and the Digital Image Library.

Computerized Test Bank Online A comprehensive bank of test questions is provided within McGraw-Hill's flexible electronic testing program EZ Test Online (**www.eztestonline.com**). EZ Test Online allows instructors to simply and quickly create tests or quizzes for their students. Instructors can select questions from multiple McGraw-Hill test banks or author their own, and then either print the finalized test or quiz for paper distribution or publish it online for access via the Internet.

This user-friendly program allows instructors to sort questions by format; select questions by learning objectives or Bloom's taxonomy tags; edit existing questions or add new ones; and scramble questions for multiple versions of the same test. Instructors can export their tests for use in WebCT, Blackboard, and PageOut, making it easy to share assessment materials with colleagues, adjuncts, and TAs. Instant scoring and feedback are provided, and EZ Test Online's record book is designed to easily export to instructor gradebooks.

Assurance-of-Learning Ready Many educational institutions are focused on the notion of assurance of learning, an important element of some accreditation standards. *Economics* is designed to support your assurance-of-learning initiatives with a simple yet powerful solution. Each chapter in the book begins with a list of numbered learning objectives to which each end-of-chapter question and problem is then mapped. In this way, student responses to those questions and problems can be used to assess how well students are mastering each particular learning objective. Each test bank question for *Economics* also maps to a specific learning objective.

You can use our test bank software, EZ Test Online, or *Connect Economics* to easily query for learning outcomes and objectives that directly relate to the learning objectives for your course. You can then use the reporting features to aggregate student results in a similar fashion, making the collection and presentation of assurance-of-learning data simple and easy.

AACSB Statement The McGraw-Hill Companies is a proud corporate member of AACSB International. Understanding the importance and value of AACSB accreditation, *Economics*, 20th edition, has sought to recognize the curricula guidelines detailed in the AACSB standards for business accreditation by connecting end-of-chapter questions in *Economics*, 20th edition, and the accompanying test banks to the general knowledge and skill guidelines found in the AACSB standards.

This AACSB Statement for *Economics*, 20th edition, is provided only as a guide for the users of this text. The AACSB leaves content coverage and assessment within the purview of individual schools, their respective missions, and their respective faculty. While *Economics*, 20th edition, and the teaching package make no claim of any specific AACSB qualification or evaluation, we have, within *Economics*, 20th edition, labeled selected questions according to the six general knowledge and skills areas.

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Student Progress Tracking *Connect Economics* keeps instructors informed about how each student, section, and class is performing, allowing for more productive use of lecture and office hours. The progress-tracking function enables instructors to:

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We give special thanks to Norris Peterson and Randy Grant, who created the "button" content on our Web site. We again thank James Reese of the University of South Carolina at Spartanburg, who wrote the original Internet exercises. Although many of those questions were replaced or modified in the typical course of revision, several remain virtually unchanged. Ryan Umbeck, Peter Staples, and Heather Schumacker deserve considerable credit for their hard work on the questions and problems in *Connect*. Thanks to the many dedicated instructors who accuracy-checked the end-of-chapter content, test banks, and Instructor's Manuals: Jennifer Pate, Charles Harrington,

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The 20th edition has benefited from a number of perceptive formal reviews. The reviewers, listed at the end of the preface, were a rich source of suggestions for this revision. To each of you, and others we may have inadvertently overlooked, thank you for your considerable help in improving *Economics*.

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Christine Wathen, *Middlesex County College*
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Edward Zajicek, *Winston-Salem State University*

BRIEF CONTENTS

CONTENTS

PART **ONE**

INTRODUCTION TO ECONOMICS AND THE ECONOMY

TO THE STUDENT

Economics students learn more, understand more, and make better choices for themselves and others. This book and its interactive learning materials like LearnSmart will speed you on your way to mastering the principles of economics and making a better life for yourself and those around you.

This book and its ancillaries contain several features designed to help you learn economics:

- ***Web buttons (indicators)*** A glance through the book reveals many pages with rectangular icons set into the text. These "buttons" alert you to helpful learning aids available with the book. The orange button symbolizes "Worked Problems." Numeric problems are presented and then solved, side-by-side, step-by-step. Seeing how the problems are worked will help you solve similar problems on quizzes and exams. The green button stands for "Origin of the Idea." Each of these pieces traces a particular economic idea to the people who first developed it.

  After reading a chapter, look back at the chapter's Web buttons and their associated numbers. On the home page of our Internet site, **www.mcconnell20e.com,** select Student Edition and use the pull-down list under "Choose one" to find the Web button content for each chapter. You can also scan the accompanying QR code with your smartphone or tablet. Need a barcode reader? Try ScanLife, available in your app store.

WORKED PROBLEMS

W1.1
Budget lines

ORIGIN OF THE IDEA

O1.4
Ceteris paribus

- ***Other Internet aids*** Our Web site contains many other aids. In the Student Edition you will find self-testing multiple-choice quizzes, PowerPoint presentations, and much more. For those of you with a very strong mathematics background, be sure to note the "See the Math" section on the Web site. There you will find nearly 50 notes that develop the algebra and, in a few cases, the calculus that underlie the economic concepts.
- ***Appendix on graphs*** Be assured, however, that you will need only basic math skills to do well in your introductory economics course. In particular, you will need to be comfortable with basic graphical analysis and a few quantitative concepts. The appendix at the end of Chapter 1 reviews graphs and slopes of curves. You may want to read it before starting Chapter 1.
- ***Reviews*** Each chapter contains several Quick Reviews as well as an end-of-chapter summary. These review sections will help you focus on essential ideas and study for exams.
- ***Key terms and Key Graphs*** Key terms are set in boldface type within the chapters, listed at the end of each chapter, and again defined in the glossary at the end of the book. Graphs with special importance are labeled Key Graphs, and each includes a multiple-choice Quick Quiz. Your instructor may or may not emphasize all of these figures, but you should pay special attention to those that are discussed in class; you can be certain there will be exam questions on them.
- ***Consider This and Last Word boxes*** Many chapters include a "Consider This" box. These brief pieces provide commonplace analogies, examples, and stories that help you understand and remember central economic ideas. Each chapter concludes with a "Last Word" box. Some of them are revealing applications of economic ideas; others are short case studies. While it is tempting to ignore in-text boxes, don't. Most are fun to read, and all will improve your grasp of economics.
- ***Questions and Problems*** The end of each chapter features separate sections of Discussion Questions, Review Questions, and Problems. The Discussion Questions are analytic and often ask for free responses, and the Review Questions require either specific answers to short computations or brief definitions about important concepts. The Problems involve longer computations for which a series of specific answers must be given. Each is keyed to a particular learning objective (LO) in the list of LOs at the beginning of the chapter. At the Web site is a multiple-choice quiz for each chapter.
- ***Study Guide*** We enthusiastically recommend the *Study Guide* accompanying this text. This "portable tutor" contains not only a broad sampling of various kinds of questions but a host of useful learning aids. Software-driven tutorials, including the Self Quiz and Study in *Connect Economics*, are also available with the text.

Our two main goals are to help you understand and apply economics and help you improve your analytical skills. An understanding of economics will enable you to comprehend a whole range of economic, social, and political problems that otherwise would seem puzzling and perplexing. Also, your study will enhance reasoning skills that are highly prized in the workplace.

Good luck with your study. We think it will be well worth your time and effort.

CHAPTER **1**

Limits, Alternatives, and Choices

Learning Objectives

LO1.1 Define economics and the features of the economic perspective.

LO1.2 Describe the role of economic theory in economics.

LO1.3 Distinguish microeconomics from macroeconomics and positive economics from normative economics.

LO1.4 Explain the individual's economizing problem and how trade-offs, opportunity costs, and attainable combinations can be illustrated with budget lines.

LO1.5 List the categories of scarce resources and delineate the nature of society's economizing problem.

LO1.6 Apply production possibilities analysis, increasing opportunity costs, and economic growth.

LO1.7 Explain how economic growth and international trade increase consumption possibilities.

LO1.8 (Appendix) Understand graphs, curves, and slopes as they relate to economics.

(An appendix on understanding graphs follows this chapter. If you need a quick review of this mathematical tool, you might benefit by reading the appendix first.) People's wants are numerous and varied. Biologically, people need only air, water, food, clothing, and shelter. But in modern societies people also desire goods and services that provide a more comfortable or affluent standard of living. We want bottled water, soft drinks, and fruit juices, not just water from the creek. We want salads, burgers, and pizzas, not just berries and nuts. We want jeans, suits, and coats, not just woven reeds. We want apartments, condominiums, or houses, not just mud huts. And, as the saying goes, "That is not

the half of it." We also want flat-panel TVs, Internet service, education, national defense, cell phones, health care, and much more.

Fortunately, society possesses productive resources, such as labor and managerial talent, tools and machinery, and land and mineral deposits. These resources, employed in the economic system (or simply the economy), help us produce goods and services that satisfy many of our economic wants. But the blunt reality is that our economic wants far exceed the productive capacity of our scarce (limited) resources. We are forced to make choices. This unyielding truth underlies the definition of **economics,** which is the social science concerned with how individuals, institutions, and society make optimal (best) choices under conditions of scarcity.

ORIGIN OF THE IDEA

O1.1

Origin of the term "Economics"

The Economic Perspective

LO1.1 Define economics and the features of the economic perspective.

Economists view things from a unique perspective. This **economic perspective,** or economic way of thinking, has several critical and closely interrelated features.

Scarcity and Choice

The economic resources needed to make goods and services are in limited supply. This **scarcity** restricts options and demands choices. Because we "can't have it all," we must decide what we will have and what we must forgo.

At the core of economics is the idea that "there is no free lunch." You may be treated to lunch, making it "free" from your perspective, but someone bears a cost. Because all resources are either privately or collectively owned by members of society, ultimately society bears the cost. Scarce inputs of land, equipment, farm labor, the labor of cooks and waiters, and managerial talent are required. Because society could have used these resources to produce something else, it sacrifices those other goods and services in making the lunch available. Economists call such sacrifices **opportunity costs:** To obtain more of one thing, society forgoes the opportunity of getting the next best thing. That sacrifice is the opportunity cost of the choice.

Purposeful Behavior

Economics assumes that human behavior reflects "rational self-interest." Individuals look for and pursue opportunities to increase their **utility**—the pleasure, happiness, or satisfaction obtained from consuming a good or service. They allocate their time, energy, and money to maximize their

CONSIDER THIS . . .

Free for All?

Free products are seemingly everywhere. Sellers offer free apps, free cell phones, and free checking accounts. Dentists give out free toothbrushes. At state visitor centers, there are free brochures and maps.

Does the presence of so many free products contradict the economist's assertion that "There is no free lunch"? No! Resources are used to produce each of these products, and because those resources have alternative uses, society gives up something else to get the "free" good. Because alternatives must be forsaken, there is no such thing as a free lunch.

So why are these goods offered for free? In a word: marketing! Firms sometimes offer free products to entice people to try them, hoping they will then purchase those goods later. Getting to try out the free version of an app may eventually entice you to buy the pay version that has more features. In other cases, a product is free only in conjunction with a larger purchase. To get the free bottle of soda, you must buy the large pizza. To get the free cell phone, you need to sign up for a year's worth of cell phone service.

But while "free" products may come at no cost to the individuals receiving them, they are never free to society because their manufacture requires the use of resources that could have been put to alternative uses.

ORIGIN OF THE IDEA

O1.2

Utility

satisfaction. Because they weigh costs and benefits, their economic decisions are "purposeful" or "rational," not "random" or "chaotic."

Consumers are purposeful in deciding what goods and services to buy. Business firms are purposeful in deciding what products to produce and how to produce them. Government entities are purposeful in deciding what public services to provide and how to finance them.

"Purposeful behavior" does not assume that people and institutions are immune from faulty logic and therefore are perfect decision makers. They sometimes make mistakes. Nor does it mean that people's decisions are unaffected by emotion or the decisions of those around them. Indeed, economists acknowledge that people are sometimes impulsive or emulative. "Purposeful behavior" simply means that people make decisions with some desired outcome in mind.

Rational self-interest is not the same as selfishness. In the economy, increasing one's own wage, rent, interest, or profit normally requires identifying and satisfying *somebody else's* wants! Also, people make personal sacrifices for others. They contribute time and money to charities because they derive pleasure from doing so. Parents help pay for their children's education for the same reason. These self-interested, but unselfish, acts help maximize the givers' satisfaction as much as any personal purchase of goods or services. Self-interested behavior is simply behavior designed to increase personal satisfaction, however it may be derived.

Marginal Analysis: Comparing Benefits and Costs

The economic perspective focuses largely on **marginal analysis**—comparisons of marginal benefits and marginal costs, usually for decision making. To economists, "marginal" means "extra," "additional," or "a change in." Most choices or decisions involve changes in the status quo, meaning the existing state of affairs.

Should you attend school for another year? Should you study an extra hour for an exam? Should you supersize your fries? Similarly, should a business expand or reduce its output? Should government increase or decrease its funding for a missile defense system?

ORIGIN OF THE IDEA

O1.3

Marginal analysis

Each option involves marginal benefits and, because of scarce resources, marginal costs. In making choices rationally, the decision maker must compare those two amounts. Example: You and your fiancée are shopping for an engagement ring. Should you buy a $\frac{1}{2}$-carat diamond, a $\frac{3}{4}$-carat diamond, a 1-carat diamond, or something even larger? The marginal cost of a larger-size diamond is the added expense beyond

CONSIDER THIS . . .

Fast-Food Lines

The economic perspective is useful in analyzing all sorts of behaviors. Consider an everyday example: the behavior of fast-food customers. When customers enter the restaurant, they go to the shortest line, believing that line will minimize their time cost of obtaining food. They are acting purposefully; time is limited, and people prefer using it in some way other than standing in line.

If one fast-food line is temporarily shorter than other lines, some people will move to that line. These movers apparently view the time saving from the shorter line (marginal benefit) as exceeding the cost of moving from their present line (marginal cost). The line switching tends to equalize line lengths. No further movement of customers between lines occurs once all lines are about equal.

Fast-food customers face another cost-benefit decision when a clerk opens a new station at the counter. Should they move to the new station or stay put? Those who shift to the new line decide that the time saving from the move exceeds the extra cost of physically moving. In so deciding, customers must also consider just how quickly they can get to the new station compared with others who may be contemplating the same move. (Those who hesitate in this situation are lost!)

Customers at the fast-food establishment do not have perfect information when they select lines. Thus, not all decisions turn out as expected. For example, you might enter a short line only to find that someone in front of you is ordering hamburgers and fries for 40 people in the Greyhound bus parked out back (and also that the guy taking orders in your new line is a trainee)! Nevertheless, at the time you made your decision, you thought it was optimal.

Finally, customers must decide what food to order when they arrive at the counter. In making their choices, they again compare marginal costs and marginal benefits in attempting to obtain the greatest personal satisfaction for their expenditure.

Economists believe that what is true for the behavior of customers at fast-food restaurants is true for economic behavior in general. Faced with an array of choices, consumers, workers, and businesses rationally compare marginal costs and marginal benefits when making decisions.

the cost of the smaller-size diamond. The marginal benefit is the perceived lifetime pleasure (utility) from the larger-size stone. If the marginal benefit of the larger diamond exceeds its marginal cost (and you can afford it), buy the larger stone. But if the marginal cost is more than the marginal benefit, you should buy the smaller diamond instead—even if you can afford the larger stone!

In a world of scarcity, the decision to obtain the marginal benefit associated with some specific option always includes the marginal cost of forgoing something else. The money spent on the larger-size diamond means forgoing some other product. An opportunity cost—the value of the next best thing forgone—is always present whenever a choice is made.

Theories, Principles, and Models

LO1.2 Describe the role of economic theory in economics.

Like the physical and life sciences, as well as other social sciences, economics relies on the **scientific method.** That procedure consists of several elements:

- Observing real-world behavior and outcomes.
- Based on those observations, formulating a possible explanation of cause and effect (hypothesis).
- Testing this explanation by comparing the outcomes of specific events to the outcome predicted by the hypothesis.
- Accepting, rejecting, and modifying the hypothesis, based on these comparisons.
- Continuing to test the hypothesis against the facts. If favorable results accumulate, the hypothesis evolves into a theory. A very well-tested and widely accepted theory is referred to as an economic law or an **economic principle**—a statement about economic behavior or the economy that enables prediction of the probable effects of certain actions. Combinations of such laws or principles are incorporated into models, which are simplified representations of how something works, such as a market or segment of the economy.

Economists develop theories of the behavior of individuals (consumers, workers) and institutions (businesses, governments) engaged in the production, exchange, and consumption of goods and services. Theories, principles, and models are "purposeful simplifications." The full scope of economic reality itself is too complex and bewildering to be understood as a whole. In developing theories, principles, and models economists remove the clutter and simplify.

Economic principles and models are highly useful in analyzing economic behavior and understanding how the economy operates. They are the tools for ascertaining cause and effect (or action and outcome) within the economic system. Good theories do a good job of explaining and predicting. They are supported by facts concerning how individuals and institutions actually behave in producing, exchanging, and consuming goods and services.

There are some other things you should know about economic principles.

- ***Generalizations*** Economic principles are generalizations relating to economic behavior or to the economy itself. Economic principles are expressed as the tendencies of typical or average consumers, workers, or business firms. For example, economists say that consumers buy more of a particular product when its price falls. Economists recognize that some consumers may increase their purchases by a large amount, others by a small amount, and a few not at all. This "price-quantity" principle, however, holds for the typical consumer and for consumers as a group.
- ***Other-things-equal assumption*** In constructing their theories, economists use the *ceteris paribus* or **other-things-equal assumption**—the assumption that factors other than those being considered do not change. They assume that all variables except those under immediate consideration are held constant for a particular analysis. For example, consider the relationship between the price of Pepsi and the amount of it purchased. Assume that of all the factors that might influence the amount of Pepsi purchased (for example, the price of Pepsi, the price of Coca-Cola, and consumer incomes and preferences), only the price of Pepsi varies. This is helpful because the economist can then focus on the relationship between the price of Pepsi and purchases of Pepsi in isolation without being confused by changes in other variables.

ORIGIN OF THE IDEA

O1.4

Ceteris paribus

- ***Graphical expression*** Many economic models are expressed graphically. Be sure to read the special appendix at the end of this chapter as a review of graphs.

Microeconomics and Macroeconomics

LO1.3 Distinguish microeconomics from macroeconomics and positive economics from normative economics.

Economists develop economic principles and models at two levels.

Microeconomics

Microeconomics is the part of economics concerned with decision making by individual customers, workers, households, and business firms. At this level of analysis, we observe the details of their behavior under a figurative microscope. We measure the price of a specific product, the number of workers employed by a single firm, the revenue or income of a particular firm or household, or the expenditures of a specific firm, government entity, or family. In microeconomics, we examine the sand, rocks, and shells, not the beach.

Macroeconomics

Macroeconomics examines the performance and behavior of the economy as a whole. It focuses its attention on economic growth, the business cycle, interest rates, inflation, and the behavior of major economic aggregates such as the government, household, and business sectors. An **aggregate** is a collection of specific economic units treated as if they were one unit. Therefore, we might lump together the millions of consumers in the U.S. economy and treat them as if they were one huge unit called "consumers."

In using aggregates, macroeconomics seeks to obtain an overview, or general outline, of the structure of the economy and the relationships of its major aggregates. Macroeconomics speaks of such economic measures as total output, total employment, total income, aggregate expenditures, and the general level of prices in analyzing various economic problems. Very little attention is given to the specific units making up the various aggregates.

Figuratively, macroeconomics looks at the beach, not the pieces of sand, the rocks, and the shells.

The micro–macro distinction does not mean that economics is so highly compartmentalized that every topic can be readily labeled as either micro or macro; many topics and subdivisions of economics are rooted in both. Example: While the problem of unemployment is usually treated as a macroeconomic topic (because unemployment relates to aggregate production), economists recognize that the decisions made by *individual* workers on how long to search for jobs and the way *specific* labor markets encourage or impede hiring are also critical in determining the unemployment rate.

Positive and Normative Economics

Both microeconomics and macroeconomics contain elements of positive economics and normative economics. **Positive economics** focuses on facts and cause-and-effect relationships. It includes description, theory development, and theory testing. Positive economics avoids value judgments. It tries to establish scientific statements about economic behavior and deals with what the economy is actually like. Such scientific-based analysis is critical to good policy analysis.

Economic policy, on the other hand, involves **normative economics,** which incorporates value judgments about what the economy should be like or what particular policy actions should be recommended to achieve a desirable goal. Normative economics looks at the desirability of certain aspects of the economy. It underlies expressions of support for particular economic policies.

Positive economics concerns *what is*, whereas normative economics embodies subjective feelings about *what ought to be*. Examples: Positive statement: "The unemployment rate in France is higher than that in the United States." Normative statement: "France ought to undertake policies to make its labor market more flexible to reduce unemployment rates." Whenever words such as "ought" or "should" appear in a sentence, you are very likely encountering a normative statement.

Most of the disagreement among economists involves normative, value-based policy questions. Of course, economists sometime disagree about which theories or models best represent the economy and its parts, but they agree on a full range of economic principles. Most economic controversy thus reflects differing opinions or value judgments about what society should be like.

QUICK REVIEW 1.1

- Economics examines how individuals, institutions, and society make choices under conditions of scarcity.
- The economic perspective stresses (a) resource scarcity and the necessity of making choices, (b) the assumption of purposeful (or rational) behavior, and (c) comparisons of marginal benefit and marginal cost.
- In choosing the best option, people incur an opportunity cost—the value of the next-best option.
- Economists use the scientific method to establish economic theories—cause-effect generalizations about the economic behavior of individuals and institutions.
- Microeconomics focuses on specific decision-making units within the economy. Macroeconomics examines the economy as a whole.
- Positive economics deals with factual statements ("what is"); normative economics involves value judgments ("what ought to be").

Individual's Economizing Problem

LO1.4 Explain the individual's economizing problem and how trade-offs, opportunity costs, and attainable combinations can be illustrated with budget lines.

A close examination of the **economizing problem**—the need to make choices because economic wants exceed economic means—will enhance your understanding of economic models and the difference between microeconomic and macroeconomic analysis. Let's first build a microeconomic model of the economizing problem faced by an individual.

Limited Income

We all have a finite amount of income, even the wealthiest among us. Even Donald Trump must decide how to spend his money! And the majority of us have much more limited means. Our income comes to us in the form of wages, interest, rent, and profit, although we may also receive money from government programs or family members. As Global Perspective 1.1 shows, the average income of Americans in 2011 was $48,450. In the poorest nations, it was less than $500.

Unlimited Wants

For better or worse, most people have virtually unlimited wants. We desire various goods and services that provide utility. Our wants extend over a wide range of products, from *necessities* (for example, food, shelter, and clothing) to *luxuries* (for example, perfumes, yachts, and sports cars). Some wants such as basic food, clothing, and shelter have biological roots. Other wants, for example, specific kinds of food, clothing, and shelter, arise from the conventions and customs of society.

Over time, as new and improved products are introduced, economic wants tend to change and multiply. Only recently have people wanted iPods, Internet service, or camera phones because those products did not exist a few decades ago. Also, the satisfaction of certain wants may trigger others: the acquisition of a Ford Focus or a Honda Civic has been known to whet the appetite for a Lexus or a Mercedes.

Services, as well as goods, satisfy our wants. Car repair work, the removal of an inflamed appendix, legal and accounting advice, and haircuts all satisfy human wants. Actually, we buy many goods, such as automobiles and washing machines, for the services they render. The differences between goods and services are often smaller than they appear to be.

For most people, the desires for goods and services cannot be fully satisfied. Bill Gates may have all that he wants for himself, but his massive charitable giving suggests that he keenly wants better health care for the world's poor. Our desires for a particular good or service can be satisfied; over a short period of time we can surely get enough toothpaste or pasta. And one appendectomy is plenty. But our broader desire for more goods and services and higher-quality goods and services seems to be another story.

Because we have only limited income (usually through our work) but seemingly insatiable wants, it is in our self-interest to economize: to pick and choose goods and services that maximize our satisfaction given the limitations we face.

A Budget Line

We can clarify the economizing problem facing consumers by visualizing a **budget line** (or, more technically, a *budget constraint*). It is a schedule or curve that shows various combinations of two products a consumer can purchase with a specific money income. Although we assume two products, the analysis generalizes to the full range of products available to consumers.

GLOBAL PERSPECTIVE 1.1

Average Income, Selected Nations

Average income (total income/population) and therefore typical individual budget constraints vary greatly among nations.

Country	Per Capita Income, 2011 (U.S. dollars, based on exchange rates)
Norway	$88,890
Switzerland	76,380
United States	48,450
Singapore	42,930
France	42,420
South Korea	20,870
Mexico	9240
China	4940
Iraq	2640
India	1410
Madagascar	430
Congo	190

Source: World Bank, **www.worldbank.org**.