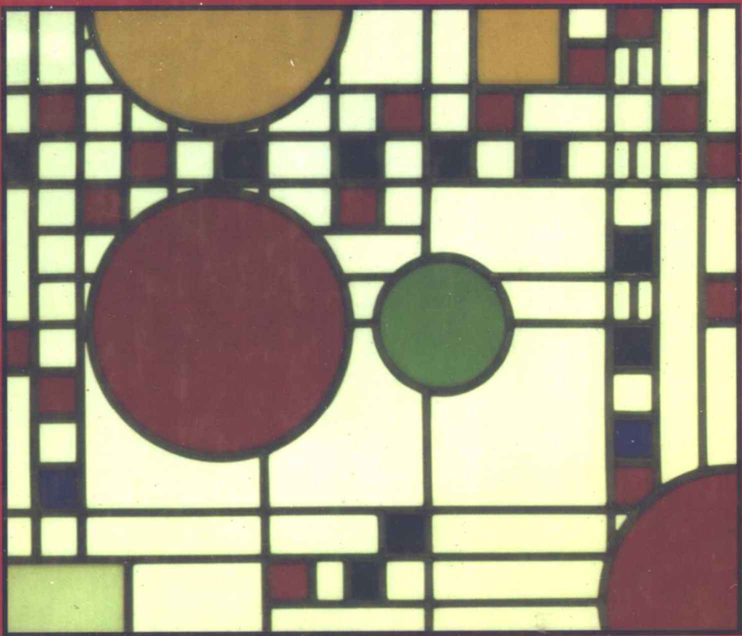
PRINCIPLES OF ECONOMICS



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PRINCIPLES OF ECONOMICS

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PRINCIPLES OF ECONOMICS

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Cover: Leaded glass window designed by Frank Lloyd Wright for the Avery Coonley Playhouse, Riverside, Illinois, circa 1912, 61 cm x 97.5 cm

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Design of book: The images in the design of this book are based on elements of the architecture of Frank Lloyd Wright (1867–1959), specifically from the leaded glass windows seen in many of his houses. Wright's design was rooted in nature and based on simplicity and harmony. His windows use elemental geometry to abstract natural forms, complementing and framing the natural world outside. This concept of seeing the world through an elegantly structured framework ties in nicely to the idea of framing one's view of the world through the window of economics.

The typeface used for some of the elements was taken from the Arts and Crafts movement. The typeface, as well as the color palette, bring in the feeling of that movement in a way that complements the geometric elements of Wright's windows. The Economic Naturalist icon is visually set apart from the more geometric elements but is a representation of the inspirational force behind all of Wright's work.

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DEDICATION

For Ellen

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For Anna

B. S. B.

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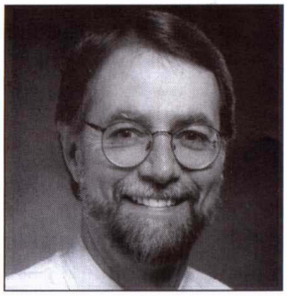
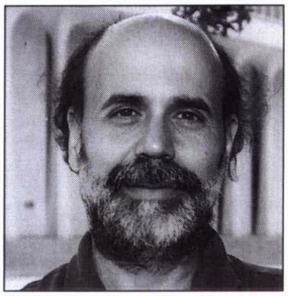


Professor Frank received his B.S. from Georgia Tech in 1966, then taught math and science for two years as a Peace Corps volunteer in rural Nepal. He received his M.A. in statistics in 1971 and his Ph.D. in economics in 1972 from the University of California at Berkeley. He is the Goldwin Smith Professor of Economics at Cornell University, where he has taught since 1972, and where he currently holds a joint appointment in the Department of Economics and the Johnson Graduate School of Management. During a leave of absence from Cornell he served as chief economist for the Civil Aeronautics Board (1978–1980), a Fellow at the Center for Advanced Study in the Behavioral Sciences (1992–1993), and Professor of American Civilization at l'École des Hautes Études en Sciences Sociales in Paris (2000–2001).

Professor Frank is the author of a best-selling intermediate economics textbook—*Microeconomics and Behavior,* Fourth Edition (McGraw-Hill/Irwin, 2000). He has published on a variety of subjects, including price and wage discrimination, public utility pricing, the measurement of unemployment spell lengths, and the distributional consequences of direct foreign investment. His research has focused on rivalry and cooperation in economic and social behavior. His books on these themes include *Choosing the Right Pond: Human Behavior and the Quest for Status* (Oxford University Press, 1985) and *Passions Within Reason: The Strategic Role of the Emotions* (W.W. Norton, 1988). He and Philip Cook are coauthors of *The Winner-Take-All Society* (The Free Press, 1995), which received a Critic's Choice Award and appeared on both the *New York Times* Notable Books list and *Business Week* Ten Best list for 1995. His most recent general interest publication, *Luxury Fever* (The Free Press, 1999), was named to the *Knight-Ridder* Best Books list for 1999. He has been awarded an Andrew W. Mellon Professorship (1987–1990), a Kenan Enterprise Award (1993), and a Merrill Scholars Program Outstanding Educator Citation (1991). Professor Frank's introductory microeconomics course has graduated more than 5,000 enthusiastic economic naturalists over the years.

BEN S. BERNANKE



Professor Bernanke received his B.A. in economics from Harvard University in 1975 and his Ph.D. in economics from MIT in 1979. He taught at the Stanford Graduate School of Business from 1979 to 1985 and moved to Princeton University in 1985, where he is the Howard Harrison and Gabrielle Snyder Beck Professor of Economics and Public Affairs, and where he is currently Chairman of the Economics Department. He has consulted for the Board of Governors of the Federal Reserve, the European Central Bank, and other central banks, and he serves on a U.S. State Department committee that advises the Israeli government on economic policy. He is a Fellow of the Econometric Society, a Guggenheim Fellow, and a Research Associate of the National Bureau of Economic Research. He has been a visiting scholar at the Federal Reserve System in Boston, Philadelphia, and New York, and he is currently an advisor to the Federal Reserve Bank of New York.

Professor Bernanke's intermediate textbook, with Andrew Abel, *Macroeconomics,* Fourth Edition (Addison-Wesley, 2001), is a best seller in its field. He has authored more than 50 scholarly publications in macroeconomics, macroeconomic history, and finance. He has done significant research on the causes of the Great Depression, the role of financial markets and institutions in the business cycle, and measuring the effects of monetary policy on the economy. His two most recent books, both published by Princeton University Press, include *Inflation Targeting: Lessons from the International Experience* (with coauthors) and *Essays on the Great Depression.* He is a coeditor of the *NBER Macroeconomics Annual* and the *Journal of Business*, and he serves as associate editor for the *Journal of Financial Intermediation;* the *Journal of Money, Credit, and Banking;* and the *Review of Economics and Statistics.* He is also a member of the Editorial Board of the *Journal of Macroeconomics.* Professor Bernanke has taught principles of economics at both Stanford and Princeton.

PREFACE

Dozens of principles of economics textbooks are available, and new entries into the market appear regularly. But with many copycats and few innovators, instructors' real choices are more limited than these numbers would suggest. We wrote this book from the conviction, born of long experience in the classroom, that there is a different, and better, way to introduce beginning students to economics. In bare bones, the philosophy of this text rests on two pillars: (1) the development and repeated application of a set of core economic principles, without the usual clutter, and (2) an active, student-centered approach to learning.

A SIMPLE AGENDA

The best way to teach introductory economics—or virtually any subject, for that matter—is to expose students to repeated applications of a short list of the core ideas of the discipline. But whose short list? If we asked a thousand economists to provide their own versions, we'd get a thousand different lists. Yet to dwell on their differences would be to miss their essential similarities. Indeed, we suspect that almost all the lists would contain variants of propositions like these:

The Scarcity Principle: Having more of one good thing usually means having less of another.

The Cost-Benefit Principle: Take no action unless its marginal benefit is at least as great as its marginal cost.

The Principle of Unequal Costs: Some costs (e.g., opportunity and marginal) matter in making decisions; other costs (e.g., sunk, average) don't.

The Principle of Comparative Advantage: Everyone does best when each concentrates on the activity for which he or she is relatively most productive.

The Principle of Increasing Opportunity Cost: Use the resources with the lowest opportunity cost before turning to those with higher opportunity costs.

The Equilibrium Principle: A market in equilibrium leaves no unexploited opportunities for individuals, but may not exploit all gains achievable through collective action.

The Efficiency Principle: Efficiency is an important social goal, because when the economic pie grows larger, everyone can have a larger slice.

Our point is not that this is the best short list, but that the introductory course will be taught most effectively if it begins with a well-articulated short list of some sort, and then doggedly hammers away at it, illustrating and applying each principle in context after context. It may be hackneyed to say, but it is nonetheless true that economics is a way of thinking, not a fixed body of facts to be memorized. Beginning students often find the economic way of thinking alien and difficult to master. Repetition and focus on a few core principles are the key to developing economic thinking skills, in the same way that they are the key to learning to play the saxophone or hit an overhead smash in tennis.

LESS IS MORE

Of course, many introductory economics textbooks pay lip service to the concepts of core ideas and thinking like an economist. And to be sure, versions of the core principles are found in many books—but often so is virtually every other economic principle that has surfaced over the past 200 years! The mind-boggling detail of these books—many of them thousand-plus-page encyclopedic reference tomes—could not have been purposely designed to camouflage more effectively the handful of principles that really matter.

All too often, students leave the introductory course never having fully grasped the essence of economic fundamentals. For example, the concept of opportunity cost—so utterly central to our understanding of what it means to think like an economist—is but one among hundreds of other concepts that go by in a blur. Opportunity cost is more important than, say, the idea that the short-run average cost curve is tangent to the long-run average cost curve at the optimal output level. But students would never realize that from the relative emphasis these topics receive in most of our introductory textbooks.

We consciously decided to write a textbook, not an encyclopedia. Our coverage includes what we believe to be the essential economic ideas and issues of the day. We have pruned much of the accumulated undergrowth, confident that students' shortest path to clear thinking about economic issues lies in becoming fluent in the basic tools of economic analysis—not in being inundated with more ideas, facts, and opinions than they can reasonably assimilate.

Repetition, however, consumes time and space. So notwithstanding our firm belief in the less-is-more approach, our book does not enter the market with the shortest page count. Instructors with Ph.D.s in economics may wonder whether so much repetition is really necessary, fearing that they will bore their students by exposing them to yet another application of the opportunity cost concept. To many, it will seem that the same time would be better spent discussing why the average fixed cost curve is asymptotic to the quantity axis.

At some point, it surely *is* better to move on to the technical properties of the average fixed cost curve. But in our view that point does not come during the principles course. For decades, each of us has had the privilege of teaching some of the best undergraduates in the world. This experience has persuaded us that when we attempt to teach less, we end up teaching more.

ECONOMIC NATURALISM

In our efforts to train students to think like economists, we aim not just for them to be *able* to apply core economic principles, but also to have an *inclination* to do so. The most effective strategy we have discovered for achieving that goal is to encourage students to become "economic naturalists." Studying biology enables people to observe and marvel at many details of the natural environment that would otherwise have escaped notice. For the naturalist, a walk in a quiet wood becomes an adventure. In much the same way, studying economics can enable students to see the everyday details of ordinary existence in a bright new light. Throughout the text, *Economic Naturalist* examples show students the relevance of economics to their world.

To illustrate, an economic naturalist is someone like Bill Tjoa, a recent student who asked, "Why do the keypad buttons on drive-up automatic teller machines have Braille dots?" A plausible answer, he reasoned, is that once the keypad molds have been manufactured, the cost of producing buttons with Braille dots is no higher than the cost of producing smooth ones. Making both types would require separate sets of molds and separate batches of inventory. If the patrons of drive-up machines found buttons with Braille dots harder to use, these extra costs might be worth incurring. But since the dots pose no difficulty for sighted users, the best and cheapest solution is to produce only keypads with dots.

In response to our challenge to employ economic principles to cast light on their own experiences, our students have tackled a host of other fascinating questions. Some recent examples from our classes:

- Why do brides spend so much money on wedding dresses, while grooms often rent cheap tuxedos, even though grooms could potentially wear their tuxedos on many other occasions and brides will never wear their dresses again? (Jennifer Dulski)
- Why, despite the proliferation of electrical appliances in the last century, do electrical outlets in newly built houses still have only two receptacles? (Beth Wollberg)
- Why do top female models earn so much more than top male models? (Fran Adams)
- Why are child safety seats required in cars but not in airplanes?" (Greg Balet)

Once students realize that they can pose and answer such questions on their own, they're hooked. A lifetime trajectory begins in which their mastery of economic principles not only doesn't decay with each year after completion of the course, but actually soars higher.

ACTIVE LEARNING

Our second guiding principle has been that active involvement by students—"student-centered" learning, in the jargon—is an essential part of an effective learning process. Merely understanding a concept—in the sense of being able to answer a test question about it the next day—is different from really *knowing* it. Even the brightest students never fully internalize a concept unless they use it repeatedly. So throughout the book, we use a number of devices to foster active learning.

- **Worked Examples.** New ideas and concepts are not simply asserted, as in most books. Instead, they are introduced by means of simple examples, usually numerical, which are worked through step-by-step in the text. These examples display the reasoning process used to reach the economic conclusion or insight, and they provide a model for the student to apply when working exercises and problems.
- **Exercises.** Following many examples, and indeed throughout each chapter, we pose in-text exercises that challenge the student to test and extend his or her understanding of the ideas being discussed. Worked-out answers to in-text exercises are provided at the end of the chapter, allowing immediate feedback.
- **Anecdotes and Illustrations.** Active learning is more likely to happen when students are engaged and motivated. We agree with Mary Poppins that a spoonful of sugar helps the medicine go down (even if the medicine is not so unpleasant). In that spirit, we have tried to make reading this text an enjoyable experience. We begin every chapter with an anecdote that motivates the discussion, and we illustrate the ideas with memorable cartoons, photographs, and original line drawings. Most important, we have striven to minimize jargon and keep the writing direct and student friendly.

- **Recap Boxes and Summaries.** To keep students focused on the forest as well as the trees, at strategic points in each chapter we have provided "recap boxes." Recaps put into a nutshell the main ideas of the previous section. The recap boxes are themselves recapitulated by bulleted end-of-chapter summaries, which are also designed to review the most important concepts presented in the chapter.
- **Core Principles Icon.** Throughout the book, whenever one of the core principles is discussed, a small icon will appear in the margin, thereby reinforcing the importance of those principles.
- **Review Questions and Problems.** Questions for review at the end of each chapter encourage the student to self-test understanding of the main ideas of the chapter. End-of-chapter problems are carefully crafted to help students internalize and extend core concepts.

THOROUGHLY MODERN MICRO

Although we believe pedagogy is extremely important, ours is not solely a book about pedagogy. Indeed, the decision about what to teach was at least as important to us as the decision of how to teach it. For example, because we believe that the most central concern of economics is efficiency, we have devoted extensive space to the concept of *economic surplus*. Introduced in Chapter 1 and applied repeatedly in Chapters 2–6, this concept is developed more fully in Chapter 7 than in any leading introductory text. Throughout the book, it underlies our ongoing argument in support of economic efficiency as an important social goal. Rather than speaking of tradeoffs between efficiency and other goals, we stress that maximizing economic surplus aids the achievement of all goals, both public and private.

A particularly distinctive feature of our book is its focus on the *normative implications of economic theory for decision making*. Basic economic reasoning tells us that rational individuals should ignore sunk costs when making choices, for example, yet many people are in fact strongly influenced by them. (Someone who has purchased a ticket for an NBA playoff game for $100 is, in practice, much more likely to drive through a snowstorm to get to the game than is an equally avid fan who won a ticket in a raffle.) Chapter 2 is devoted entirely to three pitfalls that are both widespread and important: the tendency to ignore opportunity costs, the tendency *not* to ignore sunk costs, and the tendency to confuse average and marginal costs and benefits. Throughout the book, we call students' attention to situations in which they themselves are likely to face similarly problematic choices.

Our goal of training economic naturalists has also helped dictate which topics to cover and which to leave out. Other things being equal, the more a topic enables us to make sense of our observations and experience, the stronger the case for including it. Thus, we are troubled that many people receive college degrees without ever having been exposed to ideas like the prisoner's dilemma or the tragedy of the commons. These and other *simple applications of game theory* are not only ideal vehicles for illustrating several of the core ideas of economics, but they also have enormous power to explain events in the world. In Chapter 10, we introduce students to the principles of games and strategic behavior in a highly intuitive way that does not rely on formal mathematics. We develop a limited number of simple principles that have proved entirely accessible to freshmen. In our experience, students are delighted to learn that these few principles can explain, among other things, why urban freeways are too crowded, why whales have been hunted to near extinction, why North Atlantic fisheries are near collapse, why the ozone layer is in danger, why many people fail to vote, and why the National Hockey League has a helmet rule.

MACRO AT THE FRONTIER

Our chapters on macroeconomics bring the best recent thinking in the field within the grasp of the beginning student. We avoid doctrinal disputes and lengthy detours into the history of thought. Instead, we treat the world economy as our laboratory, showing how basic economic ideas can help to explain important recent events (such as the Asian financial crisis) and longer-term trends (such as widening inequality in real wages).

In recent years, a changing set of real-world concerns and new developments in the discipline have reduced the field's traditional emphasis on cyclical fluctuations, in favor of *greater attention to long-run issues* such as economic growth, productivity, the evolution of real wages, and capital formation. Reflecting this shift in emphasis, we present a four-chapter, in-depth treatment of these long-run issues, prior to our analysis of short-run fluctuations. Chapter 20 provides an overview of the massive social transformation created by economic growth in the industrialized world, then analyzes the factors underlying this remarkable record. Subsequent chapters discuss how these trends have affected, and been affected by, developments in factor markets and financial markets.

Following our analysis of long-term trends, we present in Chapters 24–27 a *modernized treatment of short-term fluctuations and stabilization policy*. Throughout this section we emphasize the important distinction between the short-run and long-run behavior of the economy. In the short run, firms facing costs of changing prices will meet the demand forthcoming at their preset prices, creating a role for aggregate demand in the determination of output. In principle at least, sufficiently nimble monetary and fiscal policies can help to stabilize demand and output in the short run. In the long run, however, the economy tends toward full employment, and the effects of aggregate demand stimulus are felt primarily on the price level. Our model of short-run fluctuations includes two innovations that both simplify the analysis and make it more realistic. First, consistent with both media reporting and recent research on the central bank reaction function, we treat the interest rate rather than the money supply as the instrument of Fed policy. Second, our analysis of aggregate demand and aggregate supply relates output to inflation, rather than to the price level, sidestepping the necessity of a separate derivation of the link between the output gap and inflation.

A modern macro text must confront head on the *globalization of trading and financial relationships*. Our book places a heavy emphasis on globalization and its effects, starting with an analysis of the effects of globalization on real wage inequality (Chapter 21) and progressing to such issues as the benefits of trade, the causes and effects of protectionism, the role of capital flows in domestic capital formation, the link between exchange rates and monetary policy, and the sources of speculative attacks on currencies. We also use comparative examples throughout, drawing lessons from *differing national experiences* in terms of growth, wages, unemployment, saving, and stabilization policy. These comparisons invite the student to be an Economic Naturalist on a larger scale: to ask the question, Why do economic outcomes differ so much among countries?

ORGANIZATION OF MICROECONOMICS

The sixteen chapters of the microeconomics split are divided into four parts of four chapters each. Part 1, which is also included in the macroeconomics split, introduces students to the most basic ideas of economics, including all the core principles that will be used throughout the book. Chapter 1 focuses on the ideas of scarcity, tradeoffs, costs, and benefits, including the fundamental notion that the desirability of any action depends on its marginal costs and benefits. Following Chapter 1 is a brief appendix that reviews the basic mathematical tools—working with equations, graphs, and tables—that students will need for the course. As mentioned earlier, Chapter 2 extends the discussion of Chapter 1 by examining some common pitfalls for decision makers, such as the sunk cost fallacy. Chapter 3 introduces the ideas of specialization and gains from trade. Finally, Chapter 4 provides an introductory overview of the tools of supply-and-demand analysis.

Part 2 explores in greater detail the concepts of demand, supply, economic surplus, and efficiency in the context of pure competition. Building on the introduction to supply and demand in Chapter 4, Chapter 5 shows how demand curves are generated by the fact that people spend their limited income in rational ways. This chapter also discusses the concept of price elasticity and its uses. Chapter 6 turns to the sellers' side of the market, showing how upward-sloping supply curves follow from profit-maximizing decisions by producers. Chapter 7 develops the concept of economic surplus and explains Adam Smith's crucial insight—that when demand and supply curves fully reflect social benefits and costs, competitive markets maximize economic surplus. Finally, Chapter 8 examines the idea of economic profit and clarifies how the quest for profit drives competitive firms to provide a socially efficient allocation of resources.

In Part 3 we study deviations from the ideal of pure competition, emphasizing that outcomes in such situations need no longer be socially efficient. Chapter 9 examines one important type of deviation from competition, the existence of monopolistic and oligopolistic firms. When only a few producers exist in a market—and in many other noncompetitive situations—behavior often takes on a strategic component. Building on this observation, Chapter 10 introduces some elementary tools of game theory, demonstrating their applicability to a variety of economic situations. Chapter 11 considers the effects of externalities—situations in which supply and demand curves do not capture the full social costs and benefits of people's choices. We show that elementary game theory—including the ideas of the prisoner's dilemma, the arms race, and the tragedy of the commons—are quite useful for analyzing many situations with externalities. Chapter 12 examines yet another deviation from the competitive ideal, the case of incomplete or asymmetric information. Among many other examples, Chapter 12 includes a discussion of the "lemons" problem in the used-car market and an explanation of why clients prefer lawyers who wear expensive suits.

Finally, Part 4 uses the tools that have been developed to approach some issues of applied economics and economic policy. Chapter 13 tackles the question of why some people earn so much more than others, with attention to factors ranging from human capital investment to discrimination to "winner-take-all" markets. Chapter 14 shows how economic principles can be used to design economic policies that mitigate the effects of market imperfections, including anti-trust policies and policies about health care, the environment, and crime. Chapter 15 discusses public goods and taxation, as well as broader issues concerning the government's role in the economy. Completing the micro split, Chapter 16 extends the analysis of Chapter 15 by considering the benefits and pitfalls of government policies to redistribute income and reduce poverty.

ORGANIZATION OF MACROECONOMICS

The macroeconomics split begins with Part 1 (Chapters 1–4), which introduces basic economic concepts, including the core principles. Part 5 then brings the student into the realm of macroeconomics: Chapter 17 gives an overview of the issues that macroeconomists study, and of basic tools such as aggregation. Chapters 18 and 19 focus on issues of measurement: Chapter 18 looks at measures of real activity, such as GDP and the unemployment rate, and Chapter 19 considers measures of the price level and inflation. A theme of both of these chapters is that economic measurement is imperfect, and that intelligent consumers of economic statistics must be aware of their weaknesses as well as their strengths.

No topic in economics is more important to human well-being than the sources of long-term output and productivity growth. Reflecting that importance, the four chapters of Part 6 focus on long-run economic performance. Chapter 20 reviews the remarkable record of long-term economic growth and discusses the factors (such as the creation of human and physical capital, and improvements in technology) that have contributed to growth. Chapter 21 studies how economic growth, modernization, and globalization have affected workers' real wages and employment prospects. Turning from labor to capital, Chapter 22 analyzes the determinants of household saving and national saving, and shows how a nation's saving provides the funding needed for creating new capital. Saving and capital investment are mediated by financial markets, which are discussed in Chapter 23. This chapter also introduces the concept of money and discusses how the Federal Reserve controls the amount of money in circulation.

With the analysis of the long run as background, Part 7 studies the short-run behavior of the economy, including cyclical fluctuations and stabilization policy. Chapter 24 introduces short-term fluctuations in the economy and includes descriptions of business cycle dating, the U.S. experience with recessions and expansions, and the characteristic behavior of variables such as unemployment and inflation during cycles. In contrast to the situation in the long run, in which supply conditions are paramount in determining output, in the short run changes in aggregate spending can affect output. Chapter 25 looks at the relationship between aggregate demand in the very short run, when prices are fixed and firms simply meet the demand for their output. In this setting, government policies that affect aggregate demand, such as changes in government spending, can help to eliminate output gaps. Maintaining the short-run focus, Chapter 26 adds monetary policy and the Federal Reserve to the story. Chapter 27 moves from the short run to the long run by showing how adjustment in inflation eliminates output gaps over time. The chapter also considers other sources of inflation, notably aggregate supply shocks, and the policy dilemmas that these create.

Throughout the text we draw international comparisons, and allude to the effects of international factors on the economy (as when Chapter 21 analyzes the effects of trade on wage inequality). However, in Part 8 the focus is entirely on the international dimensions of the economy. Chapter 28 extends Chapter 3's analysis of comparative advantage to look at the case for and against free trade. This chapter also discusses how international capital flows augment the domestic pool of saving. Chapter 29 discusses the role of exchange rates in the economy and includes analyses of speculative attacks and the constraints that the exchange-rate regime places on domestic monetary policy.

THE CHALLENGE

The world is a more competitive place now than it was when we started teaching in the 1970s. In arena after arena, business as usual is no longer good enough. Baseball players used to drink beer and go fishing during the off-season, but they now lift weights and ride exercise bicycles. Assistant professors used to work on their houses on weekends, but the current crop can now be found most weekends at the office. The competition for student attention has grown similarly more intense. There are many tempting courses in the typical college curriculum, and even more tempting diversions outside the classroom. Students are freer than ever to pick and choose.

Yet many of us seem to operate under the illusion that most freshmen arrive with a burning desire to become economics majors. And many of us seem not yet to have recognized that students' cognitive abilities and powers of concentration are scarce resources. To hold our ground we must become not only more selective in what we teach, but also more effective as advocates for our discipline. We must persuade students that we offer something of value.

A well-conceived and well-executed introductory course in economics can teach our students more about society and human behavior in a single term than virtually any other course in the university. This course can and should be an intellectual adventure of the first order. Not all students who take the kind of course we envisioned when writing this book will go on to become economics majors, of course. But many will, and even those who do not will leave with a sense of admiration for the power of economic ideas.

A salesperson knows that he or she often gets only one chance to make a good first impression on a potential customer. Analogously, the principles course is often our only shot at helping students appreciate the value of economics. By trying to teach them everything we know—rather than teaching them the most important things we know—we too often squander this opportunity.

SUPPLEMENTS

We believe that an ancillary package is most useful if each element in it is part of a well-considered whole. In order to ensure that our package was as integrated as possible, two solid economists and excellent teachers—Jack Mogab and Bruce McClung at Southwest Texas State University—were charged with overseeing the program. They suggested candidates, gave us advice, and provided feedback for virtually all of the components. Additionally, Jack and Bruce wrote the Study Guide and Bruce wrote the micro test bank.

FOR THE INSTRUCTOR

- **Instructor's Manual.** Prepared by Margaret Ray at Mary Washington College, this manual will be extremely useful for all teachers, but especially for those new to the job. It offers suggestions for using the Study Guide, the test bank, the Economic Naturalists, and cartoons and music for teaching; it supplies sample syllabi with assignments, sample exams, and supplemental material; and it provides for each chapter an overview, an outline, teaching objectives, Economic Naturalist discussion questions, answers to textbook questions and problems, a homework assignment with answers, and a sample quiz with answers.
- **Test Banks.** Prepared by Bruce McClung at Southwest Texas State University (micro) and Nancy Jianakoplos at Colorado State University (macro), these manuals contain more than 5,000 multiple-choice questions categorized by Learning Objective (from the Study Guide); Learning Level (knowledge, comprehension, application, analysis); Type (graph, calculation, word problem); and Source (textbook, Study Guide, Web, unique).
- **Computerized Test Banks.** The print test banks (micro and macro) are also available in the latest Diploma test-generating software, ensuring maximum flexibility in test preparation, including the reconfiguring of graphing exercises. This Brownstone program is the gold standard of testing programs.
- **PowerPoints.** Prepared by Rebecca Campbell at Southwest Texas State University, these slides contain all of the illustrations in the textbook, along with a detailed, chapter-by-chapter review of the important ideas presented in the textbook. They are available in micro and macro packages.
- **Overhead Transparencies.** These more than 250, four-color acetates contain all the illustrations presented in the textbook. They are available in micro and macro packages.
- **Videos.** Produced by Paul Solman, business and economics correspondent for the Lehrer News Hour and WGBH Boston, these five 10-minute segments, available on CD or tape, cover five core concepts in economics.

- **Instructor's CD-ROM.** This remarkable Windows software program, which contains the Instructor's Manual, the Computerized Test Banks, and the PowerPoints, also allows the instructor to create presentations from any of the materials on the CD or from additional material that can be imported.
- **Web Site.** The development and design of the site was overseen by Scott Simkins at North Carolina A&T State University, and much of the content was provided either by Scott or by Jim Barbour at Elon College. Both of these experienced teachers are in the forefront of a movement to make teaching using the Web easier and more valuable. For teachers there are, among other things, an online newsletter called "Teaching Using the Web" (coordinated by Mark Maier at Glendale College); the Instructor's Manual; the PowerPoints; Economics on the Web, an annotated set of URLs/links to sites of interest to economists; along with a description of what's on the student site and some Optional Material from the book.

FOR THE STUDENT

- **Study Guide.** Written by Jack Mogab and Bruce McClung at Southwest Texas State University, these three books—for Economics, Microeconomics, and Macroeconomics—provide the following elements for each chapter: a Key Point Review; a Learning Objective Grid; and Self-Tests (Key Term Matching, Multiple Choice, Problems) with answers.
- **DiscoverEcon.** This menu-driven software was developed by Gerald Nelson at the University of Illinois. It provides students with a book-specific tutorial for either microeconomics or macroeconomics. Each chapter offers two essay questions and a multiple-choice test, and when appropriate, interactive graphing problems let students observe how the economic picture is altered as data is changed. There are also links to the textbook glossary.
- **Web Site.** Based on the idea that the single most important feature of any web site is quizzing and feedback, each chapter begins with an Electronic Learning Session (eLS). Each eLS opens with a brief recap of the chapter and is followed by a pretest with answers and analysis; the test is then followed by a set of study sessions based on Economic Naturalist Exercises, Graphing Exercises, PowerPoints, and Key Terms; and the study session is finally followed by a posttest, with answers and analysis. The site also contains such useful and exciting features as Interpreting the News—articles and summaries of relevant articles with analysis and discussion questions; Videos—10-minute segments on key concepts produced by Paul Solman of WGBH in Boston; e-mail Updates—periodic sending of information/study tips; the Glossary from the textbook; and Economics on the Web—annotated URLs useful for economics students.

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BRIEF CONTENTS