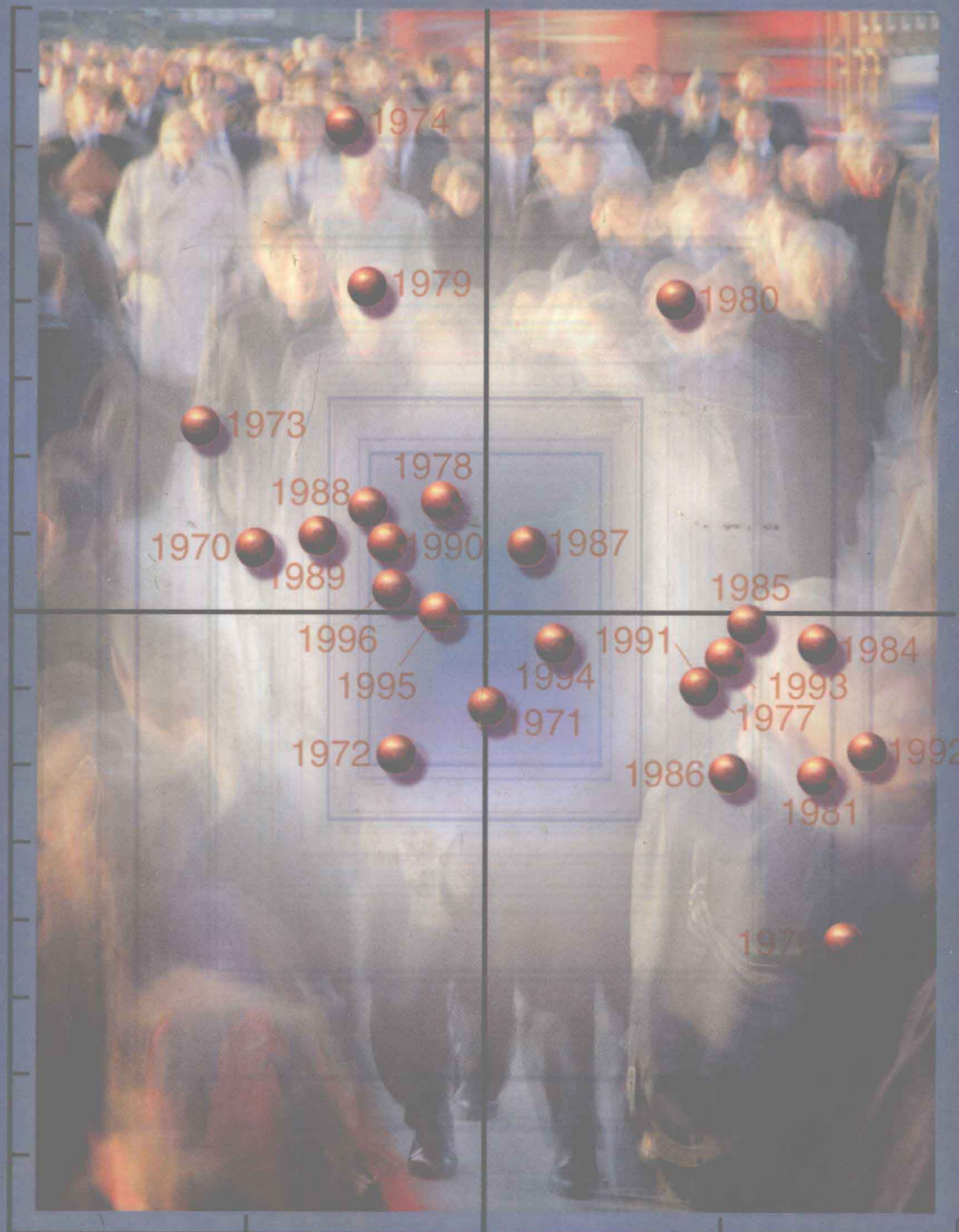


# MACROECONOMICS

THIRD EDITION



ABEL / BERNANKE

# MACROECONOMICS

**T H I R D   E D I T I O N**

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UNIVERSITY OF PENNSYLVANIA

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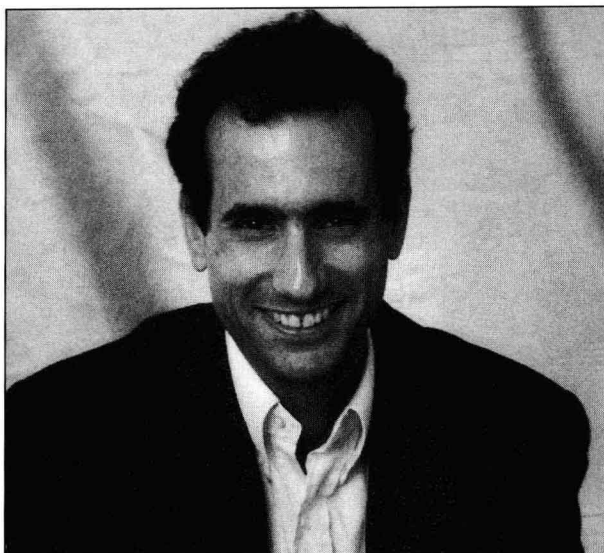
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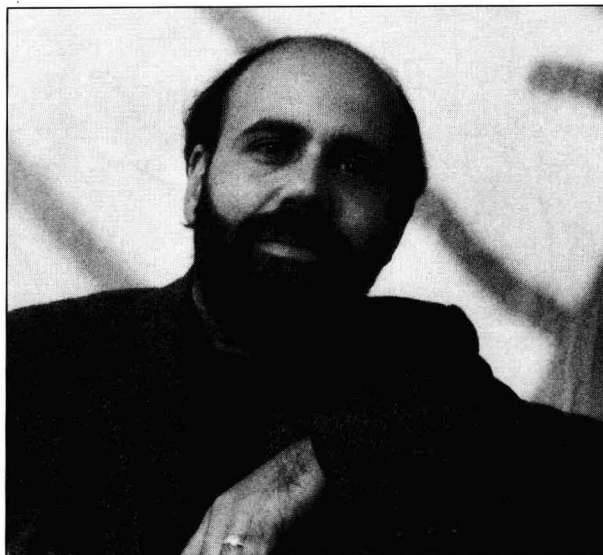
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Bernanke has served as a visiting scholar for the Federal Reserve System in Philadelphia, Boston, and New York and is currently an advisor to the Federal Reserve Bank of New York. He has been variously honored as an Alfred P. Sloan Research Fellow, a Hoover Institution National Fellow, a National Science Foundation Graduate Fellow, and a Research Associate of the National Bureau of Economic Research.



# Preface

The first two editions of *Macroeconomics* were extremely well received by instructors and students. In the Third Edition we build on the book's strengths while further increasing its flexibility to meet the needs of instructors teaching in a variety of settings. These important strengths include the following:

- *Real-world applications.* A perennial challenge for instructors is to help students make active use of the economic ideas developed in the text. The rich variety of applications in this book shows by example how economic concepts can be put to work in explaining real-world issues such as increasing wage inequality, the productivity slowdown, and the problems of making stabilization policy. The Third Edition offers many new applications, as well as updates of the best applications of previous editions.
- *Broad modern coverage.* From its conception, *Macroeconomics* has responded to students' desires to investigate and understand a wider range of macroeconomic issues than permitted by the course's traditional emphasis on short-run fluctuations and stabilization policy. This book provides a modern treatment of these traditional topics but also gives in-depth coverage of other important macro issues such as the determinants of long-run economic growth, international trade and capital flows, labor markets, and the political and institutional framework of policymaking. This comprehensive coverage also makes the book a useful tool for instructors with differing views about course coverage and topic sequence.
- *Reliance on a set of core economic ideas.* Although we cover a wide range of topics, we avoid developing a new model or theory for each issue. Instead we emphasize the broad applicability of a set of core economic ideas (such as the production function, the trade-off between consuming today and saving for tomorrow, and supply-demand analysis). Using these core ideas, we build a theoretical framework that encompasses all the macroeconomic analyses presented in the book: long-run and short-run, open-economy and closed-economy, and classical and Keynesian.
- *A balanced presentation.* *Macroeconomics* is full of controversies, many of which arise from the split between classicals and Keynesians (of the old, new, and neo- varieties). Sometimes the controversies overshadow the broad common ground shared by the two schools. We emphasize that common ground. First, we pay greater attention to long-run issues (on which classicals and Keynesians have less disagreement). Second, we develop the classical and Keynesian analyses of short-run fluctuations within a single

overall framework, in which we show that the two approaches differ principally in their assumptions about how quickly wages and prices adjust. Where differences in viewpoint remain—for example, in the search versus efficiency-wage interpretations of unemployment—we present and critique both perspectives. This balanced approach exposes students to all the best ideas in modern macroeconomics. At the same time, an instructor of either classical or Keynesian inclination can easily base a course on this book.

- *Innovative pedagogy.* The Third Edition, like its predecessors, provides useful tools to help students study, understand, and retain the material. Described in more detail later in the Preface, these tools include Summary tables, Key Diagrams, Key Terms, and Key Equations to aid students in organizing their study; and three types of problems for practice and developing understanding.

## Coverage

What is taught in intermediate macroeconomics courses—and how it is taught—have changed substantially in recent years. The first two editions of *Macroeconomics* played a major role in these developments. The Third Edition provides lively and up-to-date coverage of a broad spectrum of macroeconomic issues and ideas, including the following:

- *Long-term economic growth.* Because the rate of economic growth plays a central role in determining living standards, we devote much of Part II to growth and related issues. We first discuss factors contributing to growth, such as productivity (Chapter 3) and rates of saving and investment (Chapter 4); then in Chapter 6 we turn to a full-fledged analysis of the growth process, using tools such as growth accounting and the Solow model. Growth-related topics covered include the post-1973 productivity slowdown, growth “miracles,” the factors that determine long-run living standards, government policies to stimulate growth, and the “new growth theory.”
- *International macroeconomic issues.* We address the increasing integration of the world economy in two ways. First, we frequently use cross-country comparisons and applications that draw on the experiences of nations other than the United States; for example, in Chapter 6 we examine the growth experiences of the East Asian tigers, in Chapter 13 we compare sacrifice ratios among countries, and in Chapter 15 we discuss strategies used for making monetary policy around the world. Second, we devote two chapters, 5 and 14, specifically to international issues. In Chapter 5 we show how the trade balance is related to a nation’s rates of saving and investment and then apply this framework to discuss issues such as the 1994 Mexican crisis and the link between the trade deficit and the government budget deficit. In Chapter 14 we use a simple supply–demand framework to examine the determination of exchange rates. The chapter features innovative material on fixed exchange rates and currency unions, including an explanation of why a currency may face a speculative run, and discus-



sions of Bretton Woods, the European Monetary System, and the proposed European monetary union.

- *Business cycles.* Our analysis of business cycles begins with facts rather than theories. In Chapter 9 we give a history of U.S. business cycles and then describe the observed cyclical behavior of a variety of important economic variables (the “business cycle facts”). We then evaluate alternative classical and Keynesian theories of the cycle in Chapters 10–12 by how well they explain the facts.
- *Monetary and fiscal policy.* The effects and potential role of macroeconomic policies are considered in nearly every chapter, in both theory and applications. We present classical (Chapter 11), Keynesian (Chapter 12), and monetarist (Chapter 15) views on the appropriate use of policy. Among the policy-related topics we cover are rational expectations and monetary policy (Chapter 11), the importance of central bank credibility (Chapters 13 and 15), and the intergenerational implications of budget deficits (Chapter 16).
- *Labor market issues.* We pay close attention to issues relating to employment, unemployment, and real wages. We introduce the basic supply–demand model of the labor market and present a first-pass discussion of unemployment early, in Chapter 3. We discuss unemployment more extensively in Chapter 13, which covers the inflation–unemployment trade-off, the costs of unemployment, and government policies for reducing unemployment. Other labor market topics include the dynamics of job creation and job destruction in manufacturing (Chapter 11), efficiency wages (Chapter 12), hysteresis in unemployment (Chapter 13), and the effects of marginal and average tax rate changes on labor supply (Chapter 16).

## Structure of the Third Edition

Although we made many improvements in content and organization, with one exception the basic structure of the text is largely the same as in the previous two editions. In *Part I* (Chapters 1–2) we introduce the field of macroeconomics and discuss issues of economic measurement. In *Part II* (Chapters 3–8) we focus on long-run issues, including growth and inflation, and present an optional chapter (Chapter 8) on the microeconomics of household decision making. We devote *Part III* (Chapters 9–12) to the study of short-run economic fluctuations and stabilization policy. Finally, although we discuss macroeconomic policy throughout the book, in *Part IV* (Chapters 13–16) we look at issues and institutions of policy-making in greater detail. In Appendix A at the end of the book we review useful algebraic and graphical tools.

The one major structural change in the Third Edition relates to coverage of short-run fluctuations. This change is intended to aid instructors who want to concentrate on short-run issues of cyclical fluctuations and macroeconomic stabilization or who want to approach short-run fluctuations by focusing more sharply on one or the other of the two major perspectives. Unlike the Second Edition, the Third Edition introduces the general *IS–LM/AD–AS* framework for macroeconomic analysis *before* the more detailed discussions of the classical and

Keynesian models. Specifically, at the end of Chapter 9 we preview the approach and in Chapter 10 present the entire model so that the complete framework for short-run analysis is developed in a logical, unified manner. We then put these tools to work to study classical theories of cyclical fluctuations in Chapter 11 and the modern Keynesian approach to cycles and stabilization in Chapter 12. This restructuring opens several options and allows flexibility for instructors.

## Flexibility

Instructors of intermediate macroeconomics have different preferences as to course content, and their choices are often constrained by their students' backgrounds and the length of the term. The structure of *Macroeconomics* accommodates various needs. In planning how to use the book in your course, you might find it useful to keep the following points in mind:

- *Core chapters.* We recommend that every course include six chapters:

- Chapter 1 Introduction to Macroeconomics
- Chapter 2 The Measurement and Structure of the National Economy
- Chapter 3 Productivity, Output, and Employment
- Chapter 4 Consumption, Saving, and Investment
- Chapter 7 The Asset Market, Money, and Prices
- Chapter 10 The *IS-LM/AD-AS* Model: A General Framework for Macroeconomic Analysis

Chapters 1 and 2 provide an introduction to macroeconomics, including national income accounting. The next four chapters in the list make up the analytical core of the book: Chapter 3 examines the labor market, Chapters 3 and 4 together develop the goods market, and Chapter 7 discusses the asset market. Chapter 10 combines the three markets into a general equilibrium model usable for short-run analysis (in either a classical or Keynesian mode).

To a syllabus containing the above six chapters, instructors can add various combinations of the other chapters, depending on the course focus. The following are some possible choices:

- *Short-run focus.* Instructors who prefer to emphasize short-run issues (business cycle fluctuations and stabilization policy) can omit Chapters 5, 6, and 8 without loss of continuity. They could also go directly from Chapters 1 and 2 to Chapters 9 and 10, which introduce business cycles and the *IS-LM/AD-AS* framework. Although the presentation in Chapters 9 and 10 is self-contained, it will be helpful for instructors who skip Chapters 3-8 to provide some background and motivation for the various behavioral relationships and equilibrium conditions.
- *Classical emphasis.* For instructors who want to teach the course with a modern classical emphasis, we recommend assigning all the chapters in Part II (including optional Chapter 8 on household decision making). Chapters 9-11 provide a self-contained presentation of classical business cycle theory. Other material of interest includes the Friedman-Phelps interpretation of the

Phillips curve (Chapter 13), the role of credibility in monetary policy (Chapter 15), and Ricardian equivalence with multiple generations (Chapter 16).

- *Keynesian emphasis.* Instructors who prefer a Keynesian emphasis may choose to omit Chapter 8 (household decision making) and Chapter 11 (classical business cycle analysis). As noted, if a short-run focus is preferred, Chapter 5 (full-employment analysis of the open economy) and Chapter 6 (long-run economic growth) may also be omitted without loss of continuity.
- *International focus.* Chapter 5 discusses saving, investment, and the trade balance in an open economy with full employment. Chapter 14 considers exchange rate determination and macroeconomic policy in an open-economy model in which short-run deviations from full employment are possible. (Chapter 5 is a useful but not essential prerequisite for Chapter 14.) Both chapters may be omitted for a course focusing on the domestic economy.
- *An emphasis on microfoundations.* The basic economics of consumption, saving, and labor supply is discussed in Chapters 3 and 4 as part of the development of our macroeconomic model. However, for instructors who want to emphasize the microeconomic foundations of macroeconomics, Chapter 8 presents a more formal analysis of household decision-making, using indifference curves and the consumer's budget line to analyze consumption and saving decisions and the concepts of substitution and income effects to discuss the household's labor supply decision. Note that, as Chapter 8 extends material introduced in Chapters 3 and 4, it may be assigned to follow those chapters directly, or it may be assigned as optional background reading for Chapters 3 and 4. Another possibility is to assign only portions of the chapter: Section 8.3 on the life cycle model of consumption and saving and Section 8.5 on the labor supply decision can be used on a largely stand-alone basis.

## Applying Macroeconomics to the Real World

Economists sometimes get caught up in the elegance of formal models and forget that the ultimate test of a model or theory is its practical relevance. In the first two editions of *Macroeconomics* we dedicated a significant portion of each chapter to showing how the theory could be applied to real events and issues. Our efforts were well received by instructors *and* students. In this edition we go even further to help students learn how to “think like an economist.”

- *Applications.* Applications in each chapter show students how they can use theory to understand an important episode or issue, such as the impact of tax reform (Chapter 16) or the causes and effects of the LDC debt crisis (Chapter 5). *New applications* in this edition include discussions of recent research on the effects of tax policy on investment (Chapter 4); the 1994 Mexican crisis (Chapter 5); the recent debate about the sources of East Asian growth (Chapter 6); inflation in the transition economies of Eastern Europe (Chapter 7); the decline in the U.S. national saving rate (Chapter 8); European monetary unification (Chapter 14); and inflation targeting (Chapter 15), among others.

- *Boxes.* Boxes feature interesting additional information or sidelights, often drawn from current research. *New boxes* include (among others) a discussion of the bias in CPI inflation (Chapter 2), the link between the stock market and investment (Chapter 4), overseas holding of U.S. currency (Chapter 7), and the role of the credit crunch in the 1990-1991 recession (Chapter 12).
- *In Touch with the Macroeconomy.* One important component of thinking like an economist is being familiar with macroeconomic data—what’s available, its strengths and shortcomings. To help students develop the habit of staying in touch with the macroeconomy, this series of boxes shows where to find key macroeconomic data—such as the index of leading indicators, balance of payments data, and labor market data—and how to interpret them.
- *The Political Environment.* In talking about economic policy, students frequently note the discrepancy between the recommendations of economists (assuming they even agree!) and the decisions of politicians or government. We address this discrepancy in special boxes that highlight *the political environment* of economic issues and policies. These boxes examine such topics as the link between the state of the economy and presidential elections (Chapter 13) and the relationship between democracy and economic growth (Chapter 6).

## Learning Features

Many features of this book aim to help students understand, apply, and retain important concepts.

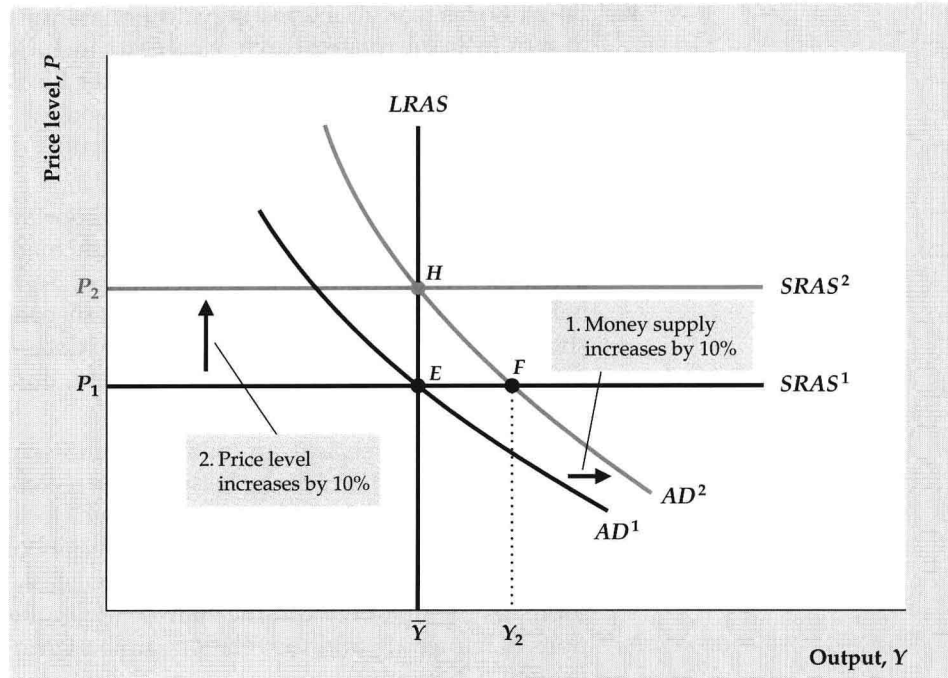
- *Detailed, full-color graphs.* The book is liberally illustrated with *data graphs*, which emphasize the empirical relevance of the theory, and *analytical graphs*, which guide students through the development of model and theory in a well-paced, step-by-step manner. For both types of graphs, descriptive captions summarize the details of the events shown.

The use of color in an analytical graph is demonstrated by the figure on the next page, which shows the effects of a shifting curve on a set of endogenous variables. Note that the original curve is in black, whereas its new position is marked in red, with the direction of the shift indicated by arrows. A peach-colored “shock box” points out the reason for the shift, and a blue “result box” lists the main effects of the shock on endogenous variables. These and similar conventions make it easier for students to gain a clear understanding of the analysis.

- *Key diagrams.* Key diagrams, a unique study feature at the end of selected chapters, are self-contained descriptions of the most important analytical graphs in the book (see the end of the Detailed Contents for a list). For each key diagram we present the graph (for example, the production function, p. 98, or the *AD-AS* diagram, p. 353) and define and describe its elements in words and equations. We then analyze what the graph reveals and discuss the factors that shift the curves in the graph.

**Figure 10.14**  
**Monetary neutrality in the AD–AS framework**

If we start from general equilibrium at point  $E$ , a 10% increase in the nominal money supply shifts the  $AD$  curve up by 10% at each level of output, from  $AD^1$  to  $AD^2$ . The  $AD$  curve shifts up by 10% because at any given level of output, a 10% increase in the price level is needed to keep the real money supply, and thus the aggregate quantity of output demanded, unchanged. In the new short-run equilibrium at point  $F$ , the price level is unchanged, and output is higher than its full-employment level. In the new long-run equilibrium at point  $H$ , output is unchanged at  $\bar{Y}$ , and the price level  $P_2$  is 10% higher than the initial price level  $P_1$ . Thus money is neutral in the long run.



- **Summary tables.** Summary tables are used throughout the book to bring together the main results of an analysis. Summary tables reduce the amount of time that students must spend writing and memorizing results, allowing a greater concentration on understanding and applying these results.
- **End-of-chapter review materials.** To facilitate review, at the end of each chapter students will find a *chapter summary*, covering the chapter's main points; a list of *key terms*, with page references; an annotated list of *key equations*; and *review questions* for self-testing.
- **End-of-chapter problems.** An extensive set of problems for practice and review (more than 160 in all) includes *numerical problems*, which have explicit numerical solutions and are especially useful for checking students' understanding of basic relationships and concepts; and *analytical problems*, which ask students to use or extend a theory qualitatively. Answers to problems and additional problems appear in the *Instructor's Manual*.
- **Review of useful analytical tools.** Although we use no mathematics beyond high school algebra, some students will find it handy to have a review of the book's main analytical tools. Appendix A (at the end of the text) succinctly discusses functions of one variable and multiple variables, graphs, slopes, exponents, and formulas for finding the growth rates of products and ratios.
- **Glossary.** The Glossary at the end of the book defines all key terms (boldfaced within the chapter and also listed at the end of each chapter) and refers students to the page on which the term is fully defined and discussed.

## Supplementary Materials

A full range of supplementary materials to support teaching and learning accompanies this book. All of these items are available to qualified domestic adopters but in some cases may not be available to international adopters.

- The *Study Guide*, by Dean Croushore, provides a review of each chapter, as well as multiple-choice and short-answer problems (and answers).
- The *Instructor's Manual/Test Bank*, also by Dean Croushore, offers guidance for instructors on using the text, solutions to all end-of-chapter problems in the book, an extensive set of additional questions for testing and practice, and suggested topics for class discussion. The *Computerized Test Bank* in the TestGen-EQ software program is available for both IBM and Macintosh platforms and allows for easy creation of multiple choice tests.
- *Electronic PowerPoint slides* for all text figures facilitate classroom presentations. You may also print transparency masters from the program. A PowerPoint viewer is provided for use by those who do not have the full software program.
- *Full-color transparencies* for key figures in the text are also available.
- A set of *MacNeil-Lehrer Business Report videos* provides interesting background for a range of economic issues.

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Wynnewood, PA   A. B. A.  
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