

FIFTH EDITION

MACRO Economics



WILLIAM BOYES

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Macroeconomics

FIFTH EDITION

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Houghton Mifflin Company Boston New York

To our families

W. B. M. M.

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Recaps

Each major section within a chapter ends with a list of key points. Students are able to quickly review what they've read before moving on to the next section.

RECAP

1. Opportunity costs are the benefits that are forgone due to a choice. When you choose one thing, you must give up—forgo—others.
2. Opportunity costs are an individual concept but can be used to demonstrate scarcity and choice for a society as a whole.
3. The production possibilities curve represents all combinations of goods and services that can be produced using limited resources efficiently to their full capabilities.
4. Points inside the production possibilities curve represent the underutilization or inefficient use of resources—more goods and services could be produced by using the limited resources more fully or efficiently.
5. Points outside the production possibilities curve represent combinations of goods and services that are unattainable given the limitation of resources. More resources would have to be obtained, or a more efficient means of production through the development of technology or innovative management techniques would have to be discovered, to produce quantities of goods and services outside the current production possibilities curve.

Economic Insight Boxes

These boxes provide in-depth treatment of contemporary economic issues, helping students to make connections between economic concepts and the world they live in.

Government Creates a Market for Fishing Rights

There is no practical way to establish ownership rights of ocean fish stocks. Traditionally, fish have been free for the taking—a common pool resource. Theory teaches that such underpricing leads to overconsumption. In the halibut fisheries off Alaska, fishing fleets caught so many halibut that the survival of the stock was threatened. No single fishing boat had an incentive to harvest fewer fish since the impact on its own future catch would be minimal and others would only increase their take. This is an example of what is known as “the tragedy of the commons.”

Officials tried limiting the length of the fishing season. But this effort only encouraged new capital

investment such as larger and faster boats with more effective (and expensive) fishing equipment. In order to control the number of fish caught, the season was shortened in some areas from 4 months to 2 days by the early 1990s. Most of the halibut caught had to be frozen rather than marketed fresh, and halibut caught out of season had to be discarded.

In late 1992, the federal government proposed a new approach: assigning each fisherman a permit to catch a certain number of fish. The total number of fish for which permits are issued will reflect scientific estimates of the number of fish that can be caught without endangering the survival of the

species. Also, the permits will be transferable—they can be bought and sold. By making the permits transferable, the system in effect creates a market where one did not exist previously. The proposed system will encourage the most profitable and efficient boats to operate at full capacity by buying permits from less successful boats, ensuring a fishing fleet that uses labor and equipment efficiently. Moreover, the transferable permits system establishes a market price for the opportunity to fish—a price that better reflects the true social cost of using this common resource.

Source: *Economic Report of the President*, 1993, p. 207.

Economic Insight

Economically Speaking

This feature pairs current newspaper articles with original commentary by Boyes and Melvin. *Economically Speaking* prepares students to think critically about the economic principles, models, and policies they read about in the news, and provides a springboard for further research and discussion.

Economically Speaking

Car Sector Braces for Stiffer Competition

The Malaysian automotive sector is bracing for the stiffer competition that will come in 2005 when tariff barriers come down for the sector under the Asian Free Trade

But to assume that the underdog would definitely be trampled upon by the stronger team would not be a correct statement, even diminutive David beat the brawn

ensure that the products they sell are at least of similar standards, quality and performance with the competitors.

Otherwise, they would be

Commentary

Free trade means that restrictions such as tariffs and barriers are eliminated. A tariff is a tax applied to imported goods or services that raises the price of foreign-made items. The tariff allows inefficient local producers to compete locally with more efficient foreign producers. But when the tariff is reduced or eliminated, the local producers must be as efficient as the foreign producers in order to compete with them. Malaysia's automobile industry fears it may not be as efficient. It is hoping that the loyalty of the local population coupled with

consumers can consume less than they could with trade. Malaysian consumers would be restricted to the nation's own PPC, represented by point A or any point on or inside the PPC. Trade restrictions would mean that Malaysian consumers have an opportunity cost of amount A to B; they forgo the additional amount of goods and services that trade would allow. There is no doubt that free trade will benefit Malaysian consumers. But, the transition from a restricted trade to free trade, from A to B, may involve the loss of jobs in one area of the economy

In the first edition of *Macroeconomics* we integrated the global perspective with the traditional economic principles to give students a framework to understand the globally developing economic world. Events since then have made this approach even more imperative. The Soviet Union has disintegrated, newly independent nations have emerged, and markets have been established where none had existed before. Students and instructors embraced the idea that the economies of countries are interrelated and that this should be made clear in the study of economics. *Macroeconomics* gives students the tools they need to make connections between the economic principles they learn and the now-global world they live in.

Current users of *Macroeconomics* report that their students find the book “very interesting,” “really easy to understand,” and “easy to learn from.” We have also discovered that this book has well served students from many different backgrounds and with varying future plans—from those who major in business, psychology, education, engineering, English, and other fields to those who choose to pursue economics.

Now, in the fifth edition, we continue to refine and improve the text as a teaching and learning instrument while expanding its international base by updating and adding examples related to global economics throughout.

CHANGES IN THE FIFTH EDITION

The fifth edition of *Macroeconomics* has been thoroughly updated and refined. A detailed account of all the additions, deletions, and modifications can be found in the Transition Guide in the *Instructor's Resource Manual* and on the web site at: college.hmco.com.

Revised Macroeconomic Coverage

The macroeconomic chapters have been updated to include the latest available economic statistics. In many chapters, numerical examples have been revised

to provide greater clarity in the graphical presentations. These chapters stress one model—aggregate demand and aggregate supply. The Keynesian aggregate expenditures material is available and thoroughly covered in Chapters 10 and 11 and then is integrated into the aggregate demand model at the end of Chapter 11. Other noteworthy changes in the 5th edition include simplification of the calculation of chain-type real GDP in Chapter 6; a new figure and discussion on the 24-hour nature of foreign exchange trading in Chapter 7; extensive revision of Federal Reserve policy discussion to reflect recent actions in Chapter 14; revision and extension of the comparative advantage presentation in Chapter 20 to match the approach taken in Chapter 2—with emphasis on outputs rather than inputs; a new discussion of different exchange rate arrangements existing in the world today in Chapter 22; and throughout the text, the euro has been integrated into all discussions involving Western European countries.

Modern Topics and Features Throughout

Modern topics continue to be the emphasis of the text. The economics of personnel, strategic behavior, and the economics of information are maintained but are restructured and reemphasized. The effects of corruption on economic growth and development is now included in the economic development chapter to mirror the current policy emphasis in multinational organizations on this topic.

Each chapter contains approximately fifteen exercises that challenge students, test their retention and understanding of the material, and extend their knowledge. Internet Exercises on the accompanying web site, at least three per chapter, ask students to investigate a topic, make comparisons, and use Internet researching skills to answer questions keyed to the Chapter topics. For example, in Chapter 1, students can access our web site and examine statistics of people attending college in the United States. Students are then asked several questions about the data.

SUCCESSFUL FEATURES RETAINED FROM THE FOURTH EDITION

In addition to the considerable updating and revising we've done for the fifth edition, there are several features preserved from the previous edition that we think instructors will find interesting.

Enhanced Student Relevance

With all the demands on today's students, it's no wonder that they resist spending time on a subject unless they see how the material relates to them and how they will benefit from mastering it. We incorporate features throughout the text that show economics as the relevant and necessary subject we know it to be.

Real-World Examples Students are rarely intrigued by unknown manufacturers or service companies. Our text talks about people and firms that students recognize. We describe business decisions made by McDonald's and Pizza Hut, by Kodak and Fuji, and by the local video store or café. We discuss the policies of U.S. presidents and other world leaders. These examples grab students' interest. Reviewers have repeatedly praised the use of novel examples to convey economic concepts.

Economic Insight Boxes These brief boxes bring in contemporary material from current periodicals and journals to illustrate or extend the discussion in the chapter. By reserving interesting but more technical sidelights for boxes, we lessen the likelihood that students will be confused or distracted by issues that are not critical to understanding the chapter. By including excerpts from articles, we help students learn to move from theory to real-world examples. And by including plenty of contemporary issues, we guarantee that students will see how economics relates to their own lives. New topics covered in the fifth edition include features of the new \$20 bill, currency trading around the world, and winner-takes-all and market inefficiency.

Economically Speaking Boxes The objective of the principles course is to teach students how to translate to the real world the predictions that come out of economic models and to translate real-world events into an economic model in order to analyze and understand what lies behind the events. The Economically Speaking boxes present students with examples of this


kind of analysis. Students read an article that appears on the left-hand page of a two-page spread at the end of each chapter. The commentary on the right-hand page shows how the facts and events in the article translate into a specific economic model or idea, thereby demonstrating the relevance of theory. Nearly two-thirds of the articles and commentaries are new to the fifth edition, covering such current events as the 2000/2001 gas price increases, the effects of a "hard landing" in the U.S. on Asia, surpluses in the U.S. budget, and college dropouts and dotcoms.

An Effective and Proven System of Teaching and Learning Aids

This text is designed to make teaching easier by enhancing student learning. Tested pedagogy motivates students, emphasizes clarity, reinforces relationships, simplifies review, and fosters critical thinking. And, as we have discovered from reviewer and user feedback, this pedagogy works.

In-Text Referencing System Sections are numbered for easy reference and to reinforce hierarchies of ideas. Numbered section heads serve as an outline of the chapter, allowing instructors flexibility in assigning reading, and making it easy for students to find topics to review. Each item in the key terms list and summary at the end of the chapter refers students back to the appropriate section's number.

The section numbering system appears throughout the Boyes/Melvin ancillary package; the *Test Banks*, *Study Guides*, and *Instructor's Resource Manual* are organized according to the same system.

 **Fundamental Questions** These questions help to organize the chapter and highlight those issues that are critical to understanding. Each related fundamental question also appears in the margin by the text discussion and, with brief answers, in the chapter summaries. A fuller discussion and answer to each of these questions may be found in the *Study Guides* available as supplements to this text. The fundamental questions also serve as one of several criteria used to categorize questions in the *Test Banks*.

Preview This motivating lead-in sets the stage for the chapter. Much more than a road map, it helps students identify real-world issues that relate to the concepts that will be presented.

RECAP

Recaps Briefly listing the main points covered, a recap appears at the end of each major section within a chapter. Students are able to quickly review what they have just read before going on to the next section.

Summary The summary at the end of each chapter is organized along two dimensions. The primary organizational device is the list of fundamental questions. A brief synopsis of the discussion that helps students to answer those questions is arranged by section below each of the questions. Students are encouraged to create their own links among topics as they keep in mind the connections between the big picture and the details that make it up.

Comments Found in the text margins, these comments highlight especially important concepts, point out common mistakes, and warn students of common pitfalls. They alert students to parts of the discussion that they should read with particular care.

Key Terms Key terms appear in bold type in the text. They also appear with their definition in the margin and are listed at the end of the chapter for easy review. All key terms are included in the Glossary at the end of the text.

Friendly Appearance

Economics can be intimidating; this is why we've tried to keep *Macroeconomics* looking friendly and inviting. The one-column design and ample white space in this text provide an accessible backdrop. Over 150 figures rely on well-developed pedagogy and consistent use of color to reinforce understanding. Striking colors were chosen to enhance readability and provide visual interest. Specific curves were assigned specific colors, and families of curves were assigned related colors.

Annotations on the art point out areas of particular concern or importance. Students can see exactly which part of a graph illustrates a shortage or a surplus, a change in consumption or consumer surplus. Tables that provide data from which graphs are plotted are paired with their graphs. Where appropriate, color is used to show correlations between the art and the table, and captions clearly explain what is shown in the figures and link them to the text discussion.

The color photographs not only provide visual images but make the text appealing. These vibrant photos tell stories as well as illustrate concepts, and lengthy captions explain what is in the photos, again to draw connections between the images and the text discussion.

Thoroughly International Coverage

Students understand that they live in a global economy; they can hardly shop, watch the news, or read a newspaper without stumbling on this basic fact. International examples are presented in every chapter but are not merely added on, as is the case with many other texts. By introducing international effects on demand and supply in Chapter 3 and then describing in a non-technical manner the basics of the foreign exchange market and the balance of payments in Chapter 7, we are able to incorporate the international sector into the economic models and applications wherever appropriate thereafter. Because the international content is incorporated from the beginning, students develop a far more realistic picture of the national economy; as a result they don't have to alter their thinking to allow for international factors later on. The three chapters that focus on international topics at the end of the text allow those instructors who desire to delve much more deeply into international issues to do so.

The global applicability of economics is emphasized by *using traditional economic concepts to explain international economic events and using international events to illustrate economic concepts that have traditionally been illustrated with domestic examples.* Instructors need not know the international institutions to introduce international examples since the topics through which they are addressed are familiar, for example, price ceilings, price discrimination, expenditures on resources, marginal productivity theory, and others. (See the back endpapers for some examples.)

Uniquely international elements of the text include:

- The treatment of the international sector as one of the economic participants and the inclusion of net exports as early as Chapter 4
- The early description of the foreign exchange market and the balance of payments in Chapter 7
- International elements in the development of aggregate demand and supply
- An extended treatment of macroeconomic links between countries in Chapter 17

Modern Macroeconomic Organization and Content

Macroeconomics is changing and textbooks must reflect that change. We begin with the basics—GDP, unemployment, and inflation. These are the ongoing concerns of any economy, for they have a significant influence on how people feel. These are the issues that don't go away. Added to these core topics is an easy-to-understand, descriptive introduction to the foreign exchange market and the balance of payments. We provide a critical alternative for those instructors who believe that it is no longer reasonable to relegate this material to the final chapters, where coverage may be rushed.

Armed with these basics, students are ready to delve into the richness of macroeconomic thought. Macro models and approaches have evolved over the years, and they continue to invite exciting theoretical and policy debates. The majority of instructors we asked voiced frustration with the challenge of pulling this rich and varied material together in class and stressed that a coherent picture of the aggregate demand and supply model was critical. We have structured the macro portion to allow for many teaching preferences while assuring a clear delineation of the aggregate demand/aggregate supply model.

To help instructors successfully present a single coherent model, we present aggregate demand and aggregate supply first, in Chapter 9, immediately following the chapter on inflation and unemployment. This sequence allows for the smooth transition from business cycle fluctuations to aggregate demand/aggregate supply (AD/AS). The Keynesian income and expenditures model is presented in full in Chapters 10 and 11 as the fixed-price version of the AD/AS model (with a horizontal aggregate supply curve). Those who want to use the AD/AS model exclusively will have no problem moving from the Chapter 9 presentation of it to the fiscal policy material in Chapter 12. The policy chapters rely on the AD/AS model for analysis.

The macroeconomic policy chapters begin with a thorough presentation of fiscal policy, money and banking, and monetary policy, with international elements included. Chapter 15 covers contemporary policy issues, and various schools of thought are treated in Chapter 16, when students are ready to appreciate the differences and can benefit from a discussion of new Keynesian and new classical models as well as of their precursors. Chapter 17 develops macroeconomic links between countries. This chapter helps students under-

stand why economies cannot function in isolation from each other and clearly demonstrates why policy actions undertaken by one government affect not only that government's citizens but citizens and businesses of other countries as well.

Part IV, "Economic Growth and Development," brings together the concepts and issues presented in the core macro chapters to explain how economies grow and what factors encourage or discourage growth. Most of the world's population live in poor countries. Growth and development are critical to those people. The material in these chapters also addresses issues of importance to industrial countries, such as the slowdown of productivity growth in the United States.

A COMPLETE TEACHING AND LEARNING PACKAGE

In today's market no book is complete without a full complement of ancillaries. Those instructors who face huge classes find good transparencies (acetates) to be critical instructional tools. Others may find that computer simulations and tutorials are invaluable. Still others use projection technology and want *PowerPoint* slides. All of these are available. And to foster the development of consistent teaching and study strategies, the ancillaries pick up pedagogical features of the text—like the fundamental questions—wherever appropriate.

Transparencies Available to adopters are over 100 color acetates showing the most important figures in the text. Over 10 percent of these figures have one to three overlays, which in addition to adding clarity and flexibility to the discussion, allow instructors to visually demonstrate the dynamic nature of economics.

Instructor's Resource Manual (IRM) Patricia Diane Nipper has produced a manual that will streamline preparation for both new and experienced faculty. Preliminary sections cover class administration, alternative syllabi, and an introduction to the use of cooperative learning in teaching the principles of economics.

The *IRM* also contains a detailed chapter-by-chapter review of all the changes made in the fifth edition. This Transition Guide should help instructors more easily move from the use of the fourth edition to this new edition.

Each chapter of the *IRM* contains:

- Overview and objectives that (1) *describe the content and unique features of the chapter* and (2) *provide a list of concrete objectives that students will need to master in order to succeed with later chapters*.
- The fundamental questions
- The key terms
- A lecture outline with *teaching strategies*—general techniques and guidelines, essay topics, and other hints to enliven your classes
- Opportunities for discussion
- Answers to every end-of-chapter exercise
- Answers to *Study Guide* homework questions
- Active learning exercises

Study Guides Janet L. Wolcutt and James E. Clark of the Center for Economic Education at Wichita State University have revised the *Macroeconomics* and *Microeconomics Study Guides* to give students the practice they need to master this course. Initially received by students and instructors with great enthusiasm, the guides maintain their warm and lively style to keep students on the right track. For each chapter:

- Fundamental questions are answered in one or several paragraphs. For students who have trouble formulating their own answers to these questions after reading the text, the *Study Guides* provide an invaluable model.
- Key terms are listed.
- A Quick Check Quiz is organized by section, so any wrong answers send the student directly to the relevant material in the text.
- Practice Questions and Problems, which is also organized by section, includes a variety of question formats—multiple choice, true/false, matching, and fill in the blank. They test understanding of the concepts and ask students to construct or perform computations.
- Thinking About and Applying . . . uses newspaper headlines or some other real-life applications to test students' ability to reason in economic terms.
- A Homework page at the end of each chapter contains five (two factual, two applied, and one synthesis/analysis) questions that can be answered on the sheet and turned in for grading. Answers are included in the *IRM*.

- Sample tests appear at the end of each *Study Guide* part and consist of 25 to 50 questions similar to *Test Bank* questions. Taking the sample tests helps students determine whether they are prepared for exams.
- Answers are provided for all questions except the Homework questions. Students are referred back to the relevant sections in the main text for each question.

Test Banks Test Banks for both *Macroeconomics* and *Microeconomics* are available. More than 8,000 test items, approximately 30% of which are new to this edition, provide a wealth of material for classroom testing. Features include:

- Multiple choice, true/false, and essay questions in every chapter
- Questions new to this edition are marked for easy identification
- An increased number of analytical, applied, and graphical questions
- The identification of all test items according to topic, question type (factual, interpretive, or applied), level of difficulty, and applicable fundamental question
- A *Study Guide* section of the test bank that includes five test items taken directly from the *Study Guide* and five test items that parallel *Study Guide* questions, for the instructor who is interested in rewarding students for working through the *Study Guide*

Computerized Test Bank A new sophisticated and user-friendly program called HMTTesting is available to help instructors quickly create tests from over 7,000 test bank items according to various selection criteria, including random selection. The program prints graphs as well as the text part of each question. Instructors can scramble the answer choices, edit questions, add their own questions to the pool, and customize their exams in various other ways. HMTTesting provides a complete testing solution, including classroom administration and online testing features in addition to test generation. This program is available for Windows and Macintosh users.

Tutorial and Simulation Software Tutorial/simulation software, extensively revised to parallel this fifth edition, is now packaged with every new student

copy of the text. A tutorial for each text chapter provides an opportunity for students to review graphing concepts and models and chapter-specific content and then to test themselves on what they've learned. A glossary and context-sensitive help are always available. The simulation component of the software includes over 60 years of data on more than twenty key economic indicators, allowing students to plot data, compare various measurement instruments, and print out their results.

HMClassPrep CD-ROM This supplement contains all the resources you need to prepare lessons based on the fifth edition of the text, including lecture outlines and teaching strategies, chapter overviews and objectives, and in-class discussion ideas. This wealth of resources is organized by chapter and resource type for easy reference and class planning.

PowerPoint Slides All the figures from the text are provided on electronic slides created for Microsoft's popular *PowerPoint* presentation software. *PowerPoint* allows instructors to create customized lecture presentations that can be displayed on computer-based projection systems. The slides are produced as a complete presentation, but using *PowerPoint*, presenters can also insert their own slides into the presentation or use specific slides in sets that they create themselves. The slides are available to instructors on the website and on the Instructor ClassPrep CD-ROM.

Web Site The fifth edition web site provides an extended learning environment for students and a rich store of teaching resources for instructors. To jump directly to the Boyes text site, go to *college.hmco.com*, choose *Instructor* or *Student*, and then type "Boyes" in the "Jump to Textbook Sites" box. Instructors will need a username and password (available from their Houghton Mifflin sales representative) to get onto the password protected parts of the site. Included on the student site are key economic links for every chapter, extended web-based assignments, and on-line quizzes—all intended to help students test their mastery of the chapter content. The instructor site contains economic and teaching resource links, teaching tips, answers to end-of-chapter exercises, and access to demonstrations of other components of the teaching package.

Smarthinking Online Tutoring Service Instructors adopting the fifth edition of Boyes/Melvin *Macroeconomics* can choose to provide their students

with free access to Smarthinking. If this option is chosen, students with Internet access may interact live online with an experienced Smarthinking "e-structor" (online tutor) between 9 P.M. and 1 A.M. EST, every Sunday through Thursday. Smarthinking provides state-of-the-art communication tools, such as chat technology and virtual whiteboards designed for easy rendering of economic formulas and graphs, to help your students practice key concepts and learn to think economically.

WebCT e-Pack and Blackboard Course Cartridge These resources provide text-specific student study aids in customizable, Internet-based education platforms. Both platforms provide a full array of content delivery and course management features for instructors who wish to incorporate educational technology in their traditional classrooms or for those who are creating distance learning courses.

ACKNOWLEDGMENTS

Writing a text of this scope is a challenge that requires the expertise and efforts of many. We are grateful to our friends and colleagues who have so generously given their time, creativity, and insight to help us create a text that best meets the needs of today's students.

We'd especially like to thank the many reviewers of *Macroeconomics* listed on the following pages. Their comments have proved invaluable in revising this text. In particular, we wish to thank Chin-Chyuan Tai of Averett College, who reviewed the text for accuracy in the last stages of production.

Unsolicited feedback from current users has also been greatly appreciated. We'd like to thank Nancy Roberts and Elmer Gooding of Arizona State University, and John Somers of Portland Community College for their very useful feedback.

Thanks go to Eugenio Dante Suarez for his work on the *Test Banks* for this edition and the fourth edition. Thanks also to Bob Cunningham of Alma College and Davis Folsom and Rick Boulware of University of South Carolina, Beaufort, who reviewed the *Test Banks* for accuracy. The important contributions of Melissa Hardison on the third edition *Test Banks*, Bettina Peiers and Karen Thomas-Brandt on the second edition *Test Banks*, and Michael Couvillion on the first edition *Test Banks* must also be acknowledged.

We would also like to thank James E. Clark and Janet L. Wolcott of Wichita State University for their continued contributions to the *Study Guides* and

Patricia Diane Nipper of Southside Virginia Community College for her work on the fifth and previous editions of the *Instructor's Resource Manual*. Thanks also to Chin-Chyuan Tai of Averett College for reviewing this important supplement. Thanks, too, go to Paul S. Estenson of Gustavus Adolphus College and Edward T. Merkel of Troy State University for their contribution in preparing the second edition *Instructor's Resource Manual*.

We want to thank the many people at Houghton Mifflin Company who devoted countless hours to making this text the best it could be, including Ann West, Jennifer DiDomenico, Bob Greiner, Carol Merrigan, Marie Barnes, Tonya Lobato, and Angma Jhala. We are grateful for their enthusiasm, expertise, and energy.

Finally, we wish to thank our families and friends. The inspiration they provided through the conception and development of this book cannot be measured but certainly was essential.

Our students at Arizona State University continue to help us improve the text through each edition; their many questions have given us invaluable insight into how best to present this intriguing subject. It is our hope that this textbook will bring a clear understanding of economic thought to many other students as well. We welcome any feedback for improvements.

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8	8		Unemployment and Inflation
9	9		Macroeconomic Equilibrium: Aggregate Demand and Supply
10	10		Aggregate Expenditures
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