MACROECONOMICS

PRINCIPLES AND POLICY

WILLIAM J. BAUMOL ALAN S. BLINDER SIXTH EDITION

MACROECONOMICS



PRINCIPLES AND POLICY

WILLIAM J. BAUMOL

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PRINCETON UNIVERSITY



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About the Cover The curve in the left-hand corner represents a production possibilities frontier. As Chapter 3 tells us, any point on or inside this frontier is attainable. Notice that the icons representing the Twelve Ideas for Beyond the Final Exam are outside the frontier. It is the mission of this text to help each student move these important ideas into his or her frontier. Within this text, students will find the resources and technology to master core economic concepts and expand their frontier.

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ABOUT THE AUTHORS

William J. Baumol was born and raised in New York City. He received his undergraduate degree in economics with a minor in art from the City University of New York and his Ph.D. in economics from the London School of Economics.

He taught at Princeton University for over forty years, and he is now at New York University where he is the director of the C. V. Starr Center for Applied Economics.

Professor Baumol has published over five hundred scholarly articles and more than twenty books that have been translated into a dozen languages.

He has been president of four professional societies, including the American Economic Association. He is also a member of the Board of Trustees of the Joint Council on Economic Education and a member of the National Academy of Sciences.

He is married and has two children and two grandchildren. Besides courses in economics, Professor Baumol also taught wood sculpture at Princeton University.

Alan S. Blinder was born in New York City and earned his A.B. at Princeton University, his M.Sc. at the London School of Economics, and his Ph.D. at Massachusetts Institute of Technology—all in economics.

Since 1971, he has taught at Princeton University, where he is now the Gordon S. Rentschler Memorial Professor of Economics. Professor Blinder chaired the department of economics from 1988 to 1990, and he is also the founder and director of Princeton's Center for Economic Policy Studies.

Professor Blinder is the author of ten books and scores of scholarly articles. He is currently a member of the Council of Economic Advisers and president-elect of the Eastern Economic Association.

Professor Blinder is married, has two sons, and currently lives in Washington, D.C.

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Emery
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Emery Intermediate Microeconomics To my four children, Ellen, Daniel, and now Sabrina and Jim W.J.B.

For Scott, who is now
Beyond the Final Exam,
and William, who is on his way
A.S.B.

Conomic analysis has continued to progress since the writing of the previous edition; but it has produced no revolutionary upheavals requiring major changes in this book. However, the world about us has changed in ways that were beyond belief just a few years ago. Who would have dreamed five years ago that the Berlin Wall would be chopped up and sold as souvenirs in shops throughout the world, that the Soviet Union would disintegrate, and that Europe—and even Russia itself—would be headed by leaders eager to declare their commitment to the market mechanism?

For us, the fundamental importance of these events stems not only from their negative verdict on the workability of central planning, nor from the fact that the free market has won the competitive struggle with "Marxism," sensational though that victory clearly is. Perhaps equally important for the long run is the fact that these cataclysmic developments are sure to affect our economy in a variety of ways. U.S. military spending is being cut substantially, under powerful public pressure. The reunification of Germany has implications for the U.S. balance of payments and for American competitiveness in world markets. U.S. business is now offered substantial marketing and investment opportunities in the newly reopened economies of Eastern Europe that competition does not permit it to ignore.

These and other related developments hammer home the fact that American workers and American firms carry out their economic activities in a market that is fundamentally international. Half a century ago, the rest of the world mattered far less to the U.S. economy than it does today. Back then, General Motors was primarily concerned with competition from Ford and Chrysler; foreign cars were hardly worth worrying about. In almost all industries, the bulk of U.S. production was sold to other Americans. Imports and exports constituted a far smaller share of GDP than they do today. But all this has changed. American producers of computers, airplanes, and TV programs make a large proportion of their sales and profits outside our borders. Television sets in U.S. homes come almost entirely from abroad, and Japanese cars are the primary competitive threat to our automobile industry.

For these reasons, it made sense in the past for most of the pages of an *American* textbook to treat the U.S. economy as an isolated world complete in itself, and, for the sake of expository simplicity, that is how most books were written. Only in later chapters were international economic linkages introduced as a necessary but troublesome complication, modifying somewhat the isolated-country analysis of the remainder of the volume.

Accordingly, in this Sixth Edition, our book continues the reorientation introduced in the Fifth Edition, seeking to provide the reader with a depiction of the workings of an economy firmly intertwined with many others. The international interconnections of our economy are embedded throughout the book rather than appended as an afterthought. Illustrative cases, descriptive factual materials, analytic tools, and end-of-chapter problems have all been modified in this way. We

trust the result will give the reader an enhanced sense of pertinence, and offer him or her more illuminating insights into the way the economy really works.

This edition, however, continues the basic philosophy of its predecessors. In particular, we avoid the fiction, so popular among textbook writers, that everything is of the utmost importance—a pretense that students are sufficiently intelligent to see through in any event. We try, instead, to highlight those important ideas that are likely to be of lasting significance—principles that students will want to remember long after the course is over because they offer insights that are far from obvious, because they are of practical importance, and because they are widely misunderstood by intelligent laymen. A dozen of the most important of these ideas are selected as 12 Ideas for Beyond the Final Exam and are called to the reader's attention when they occur through the use of the book's logo.

All modern economics textbooks abound with "real world" examples. We try to go beyond this by elevating the examples to preeminence for, in our view, the policy issue or everyday economic problem ought to lead the student naturally to the economic principle, not the other way around. For this reason, many chapters start with a real policy issue or a practical problem, sometimes drawn from our own experience, that may seem puzzling or paradoxical to noneconomists. We then proceed to describe the economic analysis required to remove the mystery.

In so doing, we use technical terminology and diagrams only where there is a clear need for them, never for their own sake. Still, economics is a technical subject and so this is, unavoidably, a book for the desk, and not for the bed. We make, however, strenuous efforts to simplify the technical level of the discussion as much as possible without sacrificing content. Fortunately, almost every important idea in economics can be explained in plain English, and this is what we try to do.

Finally, in addition to a host of minor changes throughout the volume, we have, with some invaluable help (see below) gone over the book with considerable care, seeking to emphasize issues related to discrimination against minority groups and women. It should be emphasized that this is no attempt to impart political correctness into the book. We frankly do not care whether what we have written is or is not deemed "politically correct" by any particular observer. Moreover, we are deeply dedicated to academic freedom, meaning that we are prepared to defend the right of any writer on economics to take positions, political and economic, very different from our own. However, we also believe that the economic issues raised by discrimination against women or the members of any minority group are of profound significance and, in addition, our own value judgments emphatically call for the devotion of effort to the elimination of all such discrimination. We have sought to act accordingly in the revision of the book, while meticulously seeking to avoid any attempt to foist our own political views or value judgments upon anyone.

As a last personal note, we must mention that completion of the work has had to be carried out under the handicap of a divorce between the coauthors. Happily, their separation entails neither disagreement nor rancor, and there is every reason to expect it to be temporary. However, when Alan Blinder left for Washington to join President Clinton's Council of Economic Advisers, though that undoubtedly contributed to the relevance of this book's materials to the real world, it made communication between us far more challenging. Besides, we simply miss one another.

However, there is a silver lining to this inconvenience. Blinder reports renewed and enhanced respect for Herb Stein's observation that "most of the economics that is usable for advising on public policy is at about the level of the introductory undergraduate course."

NOTE TO THE STUDENT

We would like to offer one suggestion for success in your macroeconomics course. Unlike some of the other courses you may be taking, macroeconomics is cumulative—each week's lesson builds on what you have learned before. You will save yourself both a lot of frustration and a lot of work by keeping up on a week-to-week basis. To help you do this, there is a chapter summary, a list of important terms and concepts, and a selection of questions to help you review at the end of each chapter. Making use of these learning aids will increase your success in your macroeconomics course. For additional assistance, see the following list of ancillary materials.

ANCILLARIES

As economic education incorporates new technologies, our extensive learning package has been expanded to accommodate the needs of students and instructors. Each of the following items can be ordered through your bookstore or your local Dryden representative.

Study Guide by Craig Swan, University of Minnesota (for students)

- Available in macro or micro splits, as well as a combined version.
- Chapter reviews and "Basic Exercises" have been updated and revised.
- More multiple-choice questions in "Self Test for Understanding."
- New "Economics in Action" sections in all chapters.
- New "Supplementary Exercises" based on external reading that emphasize critical thinking.

Instructor's Manual by John Isbister, University of California-Santa Cruz

Each chapter corresponds to a text chapter and opens with a brief summary, pointing out highlights and principal goals. Each chapter contains the following instructional elements:

- The "Chapter Outline" section contains major and minor headings. Instructors can use this to get a quick and comprehensive overview.
- Two "Major Ideas" are listed and explained.
- "On Teaching the Chapter" contains ideas for presenting the material. It helps the instructor think about new pedagogical strategies.
- An additional set of "Problems" requires numerical, graphical or theoretical answers.
- "Discussion Questions" are available which may be assigned for written responses or for classroom discussion.
- Available in micro, macro, and combined versions.

New Test Bank A by Peter Schwarz and Julia Mobley, University of North Carolina–Charlotte

- Consists of 2,700+ questions of True/False, Multiple Choice, and 10 essay questions per chapter with an emphasis on problem solving.
- Combined micro/macro versions are available.

Computerized Test Bank A by Peter Schwarz and Julia Mobley, University of North Carolina–Charlotte

- Appears in combined version.
- Available in IBM 3.5, 5.25, and Mac versions.
- EXAMASTER⁺ allows you to add and edit your own questions, create and edit graphics, print scrambled versions of tests, convert multiple-choice questions to open-ended questions, plus much more.

New Test Bank B by John Dodge, Sioux Falls College

- Available in micro and combined versions.
- For instructors who want additional questions.
- Consists of 2,700+ questions of True/False, Multiple Choice, and 10 essay questions per chapter with an emphasis on problem solving.

Computerized Test Bank B by John Dodge, Sioux Falls College

Available in IBM 3.5, 5.25, and Mac versions.

Transparency Acetates and Masters

- Full color acetates provide exact graphics from the text.
- One color Transparency Masters for all text figures can be duplicated for students.
- "Sequenced" acetates allow the instructor to build in curve shifts and changes, facilitating student understanding.

Economics in Focus Videos by Media Solutions

- Facilitate multi-level learning and critical thinking through its up-to-date coverage of current events in our society, while focusing on economic issues important to students and their understanding of the economy.
- Recent segments from MacNeil/Lehrer's *News Hour* program are updated quarterly.
- Economics in Focus looks at three major themes:
 - International Economic Scene covers free trade, foreign policy, and other related issues.
 - Economic Challenges and Problems explores such topics as declining incomes, the budget deficit, and inflation.
 - The Political Economy looks at the role of the government, free enterprise, and economic stabilization.
 - Each issue of Economics in Focus closes with a special feature story or oneto-one interview with a noted economist.

Laser Discs

This package contains both a microeconomics disc and a macroeconomics disc. Each focuses on the core principles and presents the information interactively. A brief 5–7 minute video from CBS begins each learning section. Related animated graphics then follow. With an understanding of the concepts, the student is challenged with critical thinking questions. A printed *Media Instructor's Manual explains* how the laser discs coordinate with *Macroeconomics: Principles and Policy, Sixth Edition*.

TAG Software (Tututorial and Graphing) Software by Todd Porter and Teresa Riley, Youngstown State University (for students)

■ This award-winning software has been significantly enhanced to contain an extensive chapter-by-chapter tutorial, a hands-on graphing section where students are actually required to draw curves (with key strokes or a mouse) and a practice exam for each section. Students receive feedback on their answers. Available in IBM versions.

Macintosh Tutorial Software (for students)

■ This user-friendly interface allows students to revisit and apply concepts from the text.

Lecture Presentation Software

- Menu-driven presentation software.
- Each video clip and still frame image on laser disc has a specific page and/or figure reference to the text.
- Allows instructor to add lecture notes, video, and laser disc material.
- Available in IBM Windows and Apple Macintosh formats, with supporting documentation.

Mathematics Supplement by Denise Kummer, St. Louis Community College—Meramec

- Walks the student through basic math and algebra.
- Structured lessons allow for review and practice with variables, averages, ratios, percentages, and simple equations.
- A real help to students with varied math backgrounds.

Dryden's News-by-Fax by John Isbister, University of California-Santa Cruz

- Provides instructors with updates regarding current issues on a monthly basis.
- Includes source of the article under discussion, a brief summary of the article, and questions for classroom discussion.
- Establishes close links to the text by providing page/topic references to the text.

NOTE TO THE INSTRUCTOR

This book contains about half of the chapters found in our book, *Economics: Principles and Policy*, Sixth Edition. Throughout *Macroeconomics* we occasionally

refer to chapters in *Microeconomics*, which contains the other half of the materials in *Economics*.

In trying to improve the book from one edition to the next, we rely heavily on our experiences as teachers. But our experience using the book is minuscule compared with that of the hundreds of instructors who use it nationwide. If you encounter problems, or have suggestions for improving the book, we urge you to let us know by writing to either one of us in care of The Dryden Press, 301 Commerce Street, Suite 3700, Fort Worth, TX 76102. Such letters are invaluable, and we are glad to receive them, even if they are critical (but not *too* critical!). Many such suggestions accumulated over the past three years found their way into the Sixth Edition.

What follows are suggested course outlines for a one-semester and a one-quarter course in macroeconomics.

OUTLINE FOR A ONE-SEMESTER COURSE IN MACROECONOMICS

NL

CHAPTER

IAPTER UMBER	TITLE
1	What Is Economics?
2	A Profile of the U.S. Economy
3	Scarcity and Choice: The Economic Problem
4	Supply and Demand: An Initial Look
5	The Realm of Macroeconomics
6	Unemployment and Inflation: The Twin Evils of Macroeconomics
7	Income and Spending: The Powerful Consumer
8	Demand-Side Equilibrium: Unemployment or Inflation?
9	Changes on the Demand Side: Multiplier Analysis
10	Supply-Side Equilibrium: Unemployment and Inflation?
11	Managing Aggregate Demand: Fiscal Policy
12	Money and the Banking System
13	Monetary Policy and the National Economy
14	The Debate over Monetary Policy
15	Budget Deficits and the National Debt: Fact and Fiction
16	The Trade-Off between Inflation and Unemployment
17	Productivity and Growth in the Wealth of Nations
18	International Trade and Comparative Advantage
19	The International Monetary System: Order or Disorder?
20	Macroeconomics in a World Economy
21	Growth in Developed and Developing Countries

OUTLINE FOR A ONE-QUARTER COURSE IN MACROECONOMICS

NUMBER TITLE	
1	What Is Economics?
2	A Profile of the U.S. Economy
3	Scarcity and Choice: The Economic Problem
4	Supply and Demand: An Initial Look

- 5 The Realm of Macroeconomics
- 6 Unemployment and Inflation: The Twin Evils of Macroeconomics
- 7 Income and Spending: The Powerful Consumer
- 8 Demand-Side Equilibrium: Unemployment or Inflation?
- 9 Changes on the Demand Side: Multiplier Analysis
- 10 Supply-Side Equilibrium: Unemployment and Inflation?
- 11 Managing Aggregate Demand: Fiscal Policy
- 12 Money and the Banking System
- 13 Monetary Policy and the National Economy
- 14 The Debate over Monetary Policy
- 15 Budget Deficits and the National Debt: Fact and Fiction
- 16 The Trade-Off between Inflation and Unemployment

WITH THANKS

Finally, and with great pleasure, we turn to the customary acknowledgments of indebtedness. Ours have been accumulating now through six editions. In these days of specialization, not even a pair of authors can master every subject that an introductory text must cover. Our friends and colleagues Albert Ando, Charles Berry, Rebecca Blank, William Branson, the late Lester Chandler, Gregory Chow, Avinash Dixit, Robert Eisner, Stephen Goldfeld, Claudia Goldin, Ronald Grieson, Daniel Hamermesh, Yuzo Honda, Peter Kenen, Melvin Krauss, Herbert Levine, the late Arthur Lewis, Burton Malkiel, Edwin Mills, Janusz Ordover, Uwe Reinhardt, Harvey Rosen, Laura Tyson, and Martin Weitzman have all given generously of their knowledge in particular areas over the course of six editions. We have learned much from them, and only wish we had learned more.

In this Sixth Edition we owe a particularly heavy debt to Professor Susan Feiner of Hampton University who went over the book with terrifyingly meticulous and thoughtful care, catching errors, pointing out expository shortcomings, and suggesting fundamental revisions. She was also enormously helpful in suggesting places where the book did not deal adequately or appropriately with issues relating to discrimination by sex or ethnic group. In all matters we have adopted most of her suggestions. Perhaps it would have been a better book if we had adopted all of them.

Many economists and students at other colleges and universities offered useful suggestions for improvements, many of which we have incorporated into the Sixth Edition. We wish to thank Robert C. Stuart, Rutgers University; David Aschaur, Bates College; Tom Beveridge, North Carolina State University; Ivan Keith Cohen, Trinity College; Norman L. Dalsted, Colorado Sate University; Larry DeBrock, University of Illinois-Urbana-Champaign; John Edgren, Eastern Michigan University; Robert Eisner, Northwestern University; Chris Ellis, University of Oregon; Shelby Gerking, University of Wyoming; Ami Glazer, University of California-Irvine; Doug Greenley, Moorhead State University; Harry Holzer, Michigan State University; Michael Kupilik, University of Montana; Woo Bong Lee, Bloomsburg University; Charles Okeke, Community College of Southern Nevada; Kevin Rask, Colgate University; Bob Sharp, Eastern Kentucky University; Ernst Stromsdorfer, Washington State University; Roy Van Til, University of Maine at Farmington; Walter Wessels, North Carolina State University; Louise Wolitz, University of Texas at Austin; Prof. Wong, California State University-Fullerton; Ali Zadeh, Susquehanna University; and Michael Zweig, SUNY-Stony Brook.

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Obviously, the book you hold in your hand was not produced by us alone. An essential role was played by the fine people at The Dryden Press including Rick Hammonds, Daryl Fox, Linda Miller, Mandy Manzano and Elizabeth Banks. In particular, our very capable manuscript editor, Margie Rogers, who has, we feel, become a friend, again worked hard and well to turn our manuscript into the book you see. We appreciate all their efforts.

We also thank our intelligent and delightful secretaries and research co-workers at Princeton and New York University. Phyllis Durepos and Janeece Roderick struggled successfully with the chaos of manuscript exchange, management of proofs, and the simple but difficult task of keeping track of the myriad and all too easily scattered pieces of the uncompleted work. Above all, one of us owes an unrepayable debt to his longstanding partner in crime, Sue Anne Batey Blackman, who carried out much of the updating of materials and who contributed draft paragraphs, illustrative items, and far more with her usual insight and diligence. By now, she undoubtedly knows more about the book than the authors do.

And finally there are our wives, Hilda Baumol and Madeline Blinder. They have now participated and helped in this project for eighteen years. Over that period, if possible, our affection has grown.

WILLIAM J. BAUMOL ALAN S. BLINDER