

# ECONOMICS

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## ECONOMICS

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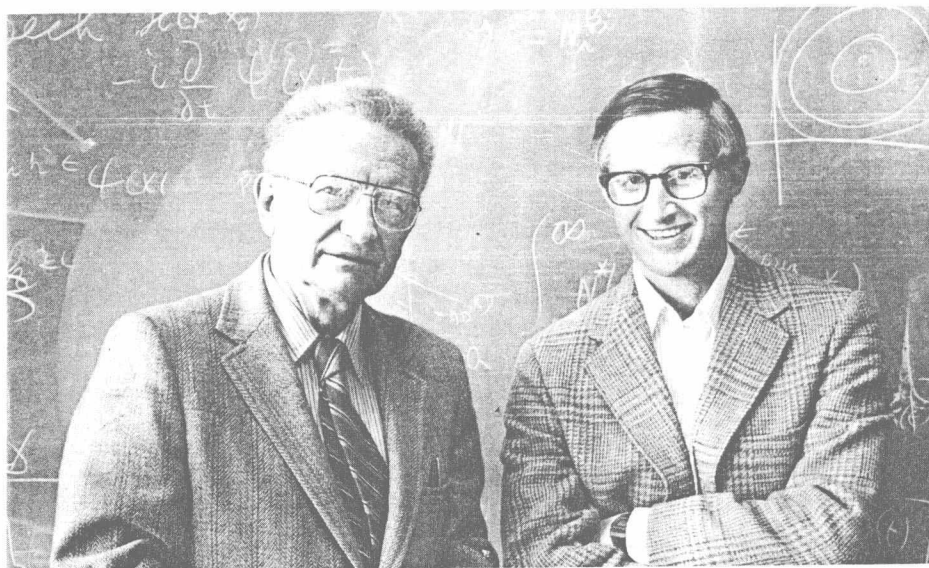
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## About the Authors

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**Paul A. Samuelson** (*left*) founder of the renowned MIT graduate department of economics, was trained at the University of Chicago and Harvard. His many scientific writings brought him world fame at a young age, and he was the first American to receive a Nobel Prize in economics (1970). One of those rare scientists who can communicate with the lay public, Professor Samuelson long wrote an economics column for *Newsweek*. He testifies often before Congress and serves as academic consultant to the Federal Reserve, the U.S. Treasury, and various private, nonprofit organizations. He was economic adviser to President John F. Kennedy. Professor Samuelson plays tennis daily, and his family's size doubled when triplets arrived.

**William D. Nordhaus** (*right*) is one of America's eminent young economists. Born in New Mexico, he was an undergraduate at Yale, received his Ph.D. at MIT, and is now the John Musser Professor of Economics at Yale University and a member of the Cowles Foundation for Research in Economics. His economic research has spanned a wide variety of topics—including inflation, energy, technological change, regulation, the "limits to growth," and trends in profits and productivity. In addition, Professor Nordhaus takes a keen interest in economic policy. He served as a Member of President Carter's Council of Economic Advisers and writes occasionally for *The New York Times* and other periodicals. Professor Nordhaus and his family live in Connecticut and share an enthusiasm for music, hiking, and skiing.

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*To Our Children and Students*

# Preface

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This is an introduction to economics, written for a half-year or full-year course. When first it was written, a few decades back, John Kenneth Galbraith forecast that the next generation would learn its economics from this work. Eleven editions, involving several millions of copies and translations into more than a score of languages, proved his prediction to be close to the mark.

Science however is a living and developing organism. The time arrived for this to become a joint work—the collaboration of two scholarly generations. And, we can both testify, it has been an exciting experience hammering out a new synthesis of modern mainstream economics, one that gives scrupulous attention to all the competing schools of economics: post-Keynesian eclecticism, monetarism, rational expectations, Chicago libertarianism, Marxism, and radical economics.

As before, our aim is to provide a clear, up-to-date, and interesting introduction to the principles of economics and the basic facts about the American and world economic systems. We would rather be right than exciting. But we would rather be interesting than dull.

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## The Twelfth Edition

This twelfth edition is the most sweeping revision since the landmark 1948 first edition. We have completely reorganized the order of presentation; the chapters on macroeconomics now use the comprehensive aggregate supply and demand approach; the microeconomics chapters have been streamlined; the applications chapters have been refocused on problems of the 1980s; and, of course, the examples and factual material have been brought right up-to-date.

But the key words we would emphasize are authoritative, comprehensive, and clear.

- These pages contain an *authoritative* statement of the accumulated knowledge of generations of economists. Do students want to gain an introductory understanding of inflation, the stock market, rational-expectations macroeconomics, the Soviet economy, or the trade deficit? All of these topics are analyzed thoroughly here.

- This text runs to 950 pages because it provides *comprehensive* coverage of modern economics. All the important areas of the discipline lie between these two covers—from absolute advantage to zero-economic growth, from Marxism to supply-side economics.

- We have tried to be as clear as possible. Nietzsche once complained about “the offensive simplicity of the style” of John Stuart Mill, the great nineteenth-century economist. That’s an offense we would love to be charged with. When short words will do, why use long ones? Abstract thoughts need plain examples.

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## MAJOR REVISIONS

Economics is inherently an evolutionary science, changing to reflect shifting trends in society and the economy. The evolutionary nature of economics is reflected in every chapter of this new edition. Let’s review the highlights.

### Macroeconomics

The most thorough, even drastic, uprooting has occurred in the chapters on macroeconomics. The 1980s are the age of high unemployment, volatile inflation and interest rates, monetarism, and soaring budget deficits. Our treatment of macroeconomics has been restructured to allow students to understand the enduring issues of macroeconomics for the 1980s. Here are some key changes:

1. We have introduced aggregate supply and demand (AS-AD) as the central approach to understanding overall movements in prices and national output. All major issues in macroeconomics are now analyzed using these new tools. We thereby integrate different schools of thought—Keynesian, classical, monetarist, supply-side, rational-expectations, and modern mainstream macroeconomics. Depressions, hyperinflations, and the crowding-out debate are encompassed in a single theoretical framework.

2. Inflation and unemployment are treated in an integrated way—fitting into both the AS-AD framework and into modern natural-rate theories. Students can easily grasp the importance of the natural rate of unemployment; why the natural rate has drifted up in recent years; and what can be done to lower the natural rate. In addition, the analysis of inflation is brought right to the frontier of current thinking. The new approach helps explain why inflation fell in the early 1980s; why this disinflation was so costly to the nation, and what is meant by the credibility hypothesis.

3. The chapters on monetary theory and policy have been extensively revised to incorporate the changing behavior of money markets. These chapters include the evolving structure and regulation of financial institutions; the theoretical basis of monetarism; the trend toward monetary targeting; the independence of the Fed; and other key topics for the 1980s.

4. We provide a complete introductory analysis of rational-expectations macroeconomics. The policy-ineffectiveness theorem, the Lucas critique, the case for fixed rules—along with critiques of rational-expectations macroeconomics—appear in a self-contained Appendix. And throughout the whole of the macroeconomics discussion, the thrust of the new school is kept in mind.

5. People the world around fear high U.S. deficits. Chapter 17 will explain why in an extensive discussion of the role of government deficits and debt. Along

the way, we examine cyclical and structural budgets, the question of crowding out, the fiscal-monetary mix, and the way government debt may displace capital. Moreover, all these will be presented in the elementary framework of supply and demand.

6. Changes can be found in every chapter of the parts on macroeconomics. New material is included on the demand for investment, the foundations of the sticky-price and flexible-price approaches, Okun's law, supply-side economics, and many other topics. But these new topics have not simply been piled on top of material from earlier editions. Much material has been removed to make room for our new synthesis of modern mainstream macroeconomics.

### Microeconomics

The core chapters on microeconomics have been revised chiefly with an eye to presenting the key ideas more clearly and simply. The central themes of microeconomics have been developed over many decades; these have withstood the test of eleven editions. But we introduce new and exciting approaches and examples to make microeconomics relevant for the 1980s. For example:

1. This new edition contains new analyses of efficiency. Consumer surplus is treated in greater depth. Allocative (or Pareto) efficiency is analyzed with both traditional tools and a new approach using the utility-possibility frontier.

2. A new section has been added on the nature and control of natural monopoly. This includes a thorough discussion of the reasons behind economic regulation—including the capture theory—along with an analysis of the deregulation movement.

3. We have updated and broadened the analysis of market structures to reflect new developments in industrial-organization economics. Oligopoly theories now include that of a dominant firm as well as collusive oligopoly. Empirical evidence on economies of scale is integrated into the discussion of the sources of market power. Recent work on bounded rationality and the Schumpeterian hypothesis rounds out the analysis of monopoly. A new appendix on game theory has been added, introducing Nash-equilibrium concepts; moreover, new developments in repeated prisoner-dilemma games are reviewed.

4. Antitrust theory and policy has been revolutionized over the last decade. New material is included on the views of the Chicago school as well as on the outcome of the AT&T and IBM antitrust cases.

5. We have reorganized the chapters on income distribution and factor pricing to reflect recent thinking and evidence. The tools and facts of income redistribution are now included alongside the theories of distribution. We cover such topics as empirical evidence on patterns of wages and earnings, the extent of labor market discrimination, and the decline of labor unions under the pressure from deregulation and foreign competition. We also present the "tragedy of the commons" as an example of inappropriate pricing of natural resources, along with a new comprehensive treatment of capital and interest.

### Applications

We have grouped chapters applying the core concepts of macroeconomics and microeconomics into two broad categories: a new Part Six on Equity, Efficiency, and Government; and a new Part Seven on Economic Growth and International Trade. The major changes are:

1. A full discussion of public choice makes up Chapter 32. This in-depth survey explains how government's role in the economy is determined. Public-choice theory is illustrated by analyzing Arrow's paradox, logrolling, and voting by unanimity and supermajorities. Chapter 32 will help students develop a balanced view of the role of government; it shows that "market failures" like monopoly must be balanced against "government failures" like short time horizons when weighing the appropriate role of government in our mixed economy.

2. Environmental concerns continue to be high on the nation's agenda. In response, we include a new treatment of externalities, including a supply-and-demand analysis. This section also discusses modern approaches to the control of externalities—including an examination of emissions taxes and the Coase theorem.

3. The material on taxes is updated, with a section on the Laffer curve in theory and practice. We include new evidence on the net fiscal impact of government.

4. The tradeoff between efficiency and equity occupies a new short chapter and is integrated with an analysis of policies to alleviate poverty.

5. We have combined the history of economic thought and a survey of alternative systems into a single chapter. The survey takes an analytical approach, asking how a command economy can solve the basic problems of economic organization. The discussion of the Soviet Union has been completely rewritten in light of recent evidence on Soviet economic performance.

6. Our revamped analysis of the international economy reflects new problems of the global economic system. A new section on "open-economy macroeconomics" includes the impact of foreign trade and of an "overvalued" exchange rate on the macroeconomy. In addition, we analyze the surprising new route for monetary policy in an open economy with flexible exchange rates, allowing an understanding of the dilemmas for the U.S. in the 1980s and beyond. Balanced evaluations of the gold standard and the flexible-exchange rate system will help students understand the dance of the dollar and proposals for the reform of the industrial monetary system.

A final word on the level of the analysis: Although we seek to teach nothing that will have to be relearned because an oversimplified presentation makes it wrong, this is not an intermediate text. It is an introduction for beginners.

### Glossary

A major addition to the twelfth edition is the Glossary. This dictionary of economics has been especially designed for the introductory student—providing a capsule summary of all the major terms encountered in this text.



The list of revisions could extend for many pages. But the meal is more important than the menu, and the proof of a revision is in the reading. A glance through any chapter will reveal the many improvements both large and small.

### Optional Matter

The spectrum of economics courses ranges broadly—from one-quarter surveys to year-long intensive honors courses. This book has been designed to fit all requirements. Some of the harder or less important topics—these are not always the same—appear in Appendices or specially labelled sections. Moreover, we label certain discussion questions as “advanced” to indicate that they may require considerable time or in some cases advanced mathematics.

If you are teaching a fast, brief course, don't be put off by this carefully planned layering of more difficult material. Experience has proved that this gives the more intensive course meat to bite into, without hampering those who work with the severest time limitations. And to those teaching the bright honors student, we may say: This book is as challenging as you care to make it. Indeed, many of today's prominent economists have written to say that they used parts of it at every stage of their pilgrimage to the Ph.D.

### Format

In addition to revisions of content, the twelfth edition has undergone many changes in format. We now use more headings to help remind the student where the analysis is leading. Students will find a helpful new Appendix on how to read graphs. We have trimmed many of the footnotes to allow for a smoother passage through the text; in addition, you will find (in gray boxes) special footnotes for those topics that are not essential for the analysis but can be mused over at the student's leisure. Many new questions have been added to each chapter.

But while many changes have been made, we have held fast to a stylistic beacon that guided earlier editions: to use simple sentences, clear explanation and informative tables and graphs.

### Auxiliary Teaching Aids

We would also call your attention to the new *Study Guide* prepared for this edition. This aid has been written by Professor Gary Yohe of Wesleyan University, who worked in close collaboration with us in our revision. Both when assigned by instructors and when bought independently by students for self-study, the *Study Guide* has proved to be an impressive success.

In addition, instructors will find the *Instructor's Manual* useful in planning for their own teaching. And McGraw-Hill has prepared a beautiful set of overhead transparencies for presenting the tabular and graphical material in the classroom.

### Which Order?

Since almost half the classes using this book are one-semester courses, we append to the Table of Contents suggested one-semester outlines. And in the *Instructor's Manual* further suggestions are given for flexible adaptation.

Forty percent of the teachers using this book prefer to cover microeconomics

before macroeconomics. A good case can be made for either ordering; experimental programs show each to have advantages. This text has been carefully designed for either program. Instructors who wish to deal first with microeconomics can skip from Part One to Part Four, knowing that the exposition and cross-references have been tailored with their needs in mind.

Moreover, the applications chapters from Chapter 31 to Chapter 40 have been carefully designed so that they can be used with courses that stress either macroeconomics or microeconomics.

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## ACKNOWLEDGMENTS

A book like this has two authors but many contributors. We are deeply grateful to colleagues, reviewers, students, and McGraw-Hill's staff for ensuring the timely updating and completion of the twelfth edition of *Economics*.

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In New York, McGraw-Hill's extraordinarily talented team included Patricia Mitchell, Mel Haber, Peggy Rehberger, and above all Elisa Adams. We cannot fail to mention Peter Dougherty, who helped launch the twelfth edition before he left McGraw-Hill in 1983.

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## To the Sovereign Reader

The first eleven editions of this book have served many millions of students over the last four decades. It can serve you well too.

One book cannot, of course, make you an expert in economics. But then, most students don't want to make a career in economics. Rather, most readers will be concerned with gaining a basic understanding of how our economy works. Therefore, we have laid out the core of economics, omitting no essentials, presenting the issues as simply as we can, but not misleading you with oversimplifications.

In preparing this twelfth edition, we have had one person uppermost in mind: *you, the beginning student*. On every page, we have asked: What are the important issues or concepts that people must know in the twenty-first century? What tools will be most helpful for women and men entering business, law, engineering, agriculture, government, and the 1001 other careers that people follow?

At every turn, we have worked to make sure that the definitions are clear, the tables and charts well-labelled, the historical examples relevant.

### A Spread of Views

In these pages, in short, you will find a fair review of the major findings of modern economic thought and debate. You will find below the thinking of intellectual giants like Adam Smith and Karl Marx, John Maynard Keynes and Milton Friedman, James Tobin and Robert Lucas.

You have probably read in the newspapers about such things as the gross national product, inflation, unemployment, interest rates, the trade deficit, economic discrimination, or labor unions. You will find each of these topics thoroughly examined and analyzed below.

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## HOW TO STUDY ECONOMICS

We have designed this book so that it can be used equally well by the average freshman as well as by scholars in the stiffest honors course. It is carefully—nay,

even cunningly—layered so that each reader can go as far with it as she or he cares to go.

### **Divide and Conquer**

No one can tell you the best way to read a textbook. And individual styles differ greatly among students. But, just as most big-league baseball players have developed similar methods for hitting a curve ball, similarly many students find the following widely used approach to studying economics will help them learn the subject quickly and well.

To begin with, this is obviously not a novel or detective story. Economics is best learned in small chunks. Start by reading a chapter quickly for perspective. Next, read the material carefully. Then you can refresh your understanding by reading the final summary and reviewing the checklist of key concepts. And on rereading and review, pay special attention to the story told by the figures and tables.

### **Read Actively**

Above all, be an active participant. Keep asking yourself, “Why is this important?” or “What is an example of this point?” Argue about the theories or examples with your roommates or classmates. Like good food, economics is most rewarding when you savor and mull over every morsel.

### **Skool!**

Our envy goes out to you, setting out to explore the exciting world of economics for the first time. This is a thrill that, alas, you can experience only once in life.

So, as you begin, may we say, *bon appetit!*

*Paul A. Samuelson  
William D. Nordhaus*

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