

John B. Taylor

*Principles of* **Macroeconomics**



# RINCIPLES OF MACROECONOMICS

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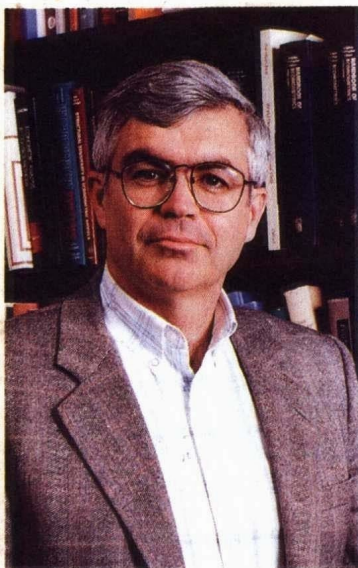
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# PRINCIPLES OF MACROECONOMICS





### About the Author

John B. Taylor is the Mary and Robert Raymond Professor of Economics at Stanford University and the director of the Stanford Center for Economic Policy Research. He received the highest teacher rating for the elementary economics course ever recorded by a Stanford faculty member, and in 1992 was awarded the prestigious Hoagland Prize, which is presented annually to Stanford's most outstanding teacher of undergraduate students.

Professor Taylor's areas of specialty are economic policy, macroeconomics, and international finance, and he has made significant contributions in the areas of fiscal and monetary stabilization policy, the role of wages and prices in macroeconomic stability, rational expectations models, international coordination in monetary policy, and economic growth models. He has written over eighty research papers and several books on these subjects. His textbook in macroeconomics is an acknowledged best seller, used at over three hundred colleges and universities in the United States and other countries.

Taylor distinguished himself as an undergraduate at Princeton University before receiving his Ph.D. at Stanford University. His broad experience as a teacher has taken him to Columbia, Princeton, and Yale Universities.

In 1989 John Taylor was nominated and confirmed to serve as a member of the President's Council of Economic Advisers, a position he held until 1991. He was responsible for assembling the administration's economic forecasts, and, as part of his international responsibilities, he was a member of the U.S. delegation to the Uruguay Round and to the U.S.-Japan trade talks.

Professor Taylor currently lives in Stanford, California with his wife and two children.

# Preface

This book is about economics. It is meant to provide an introduction to this fascinating subject for students who may have had no prior exposure to it other than what they find all around them as everyday participants in the economy. Why did I write such a book? It was a labor of three loves.

*First*, I love to teach. To me, writing a textbook is a natural extension of teaching. This textbook gradually grew out of lectures I have regularly given over the years in introductory economics, one of the courses I most enjoy teaching. Many portions of the text are written versions of presentations or dramatizations I have used in my lectures. For example, Adam Smith usually visits my class during the lecture on the division of labor; at about the same point in this book, a short biography of Adam Smith appears.

*Second*, I love to do economic research, and writing a textbook is a natural extension of research—sharing with others new developments or simply putting old developments in a new light. There is a valuable tradition in American colleges and universities that faculty research and undergraduate teaching go hand and hand, each benefiting the other. It is a tradition that I support whole-heartedly by regularly teaching the introductory economics course while continuing to do economic research.

Largely because of economic research, the subject of economics has changed radically over the fifty years since Paul Samuelson wrote his standard-setting economics textbook. Change has been especially great in macroeconomics (my own field of research), where the absorption of models of expectations and long-run fundamentals has resulted in a transformation of thinking as radical as the Keynesian revolution of fifty years ago. Progress in microeconomics and international economics has also been great, and I am fortunate to have had some of the contributors of the major ideas in these areas as colleagues over the years. I have enjoyed both learning about and finding good ways to teach these ideas at the introductory level.

*Third*, I love economic policy—the application of economics to government as well as to decision-making in business. The main purpose of economic textbooks—including the first one by Adam Smith—has been to show how economics can be used to improve government policy. My experience on the Council of Economic Advisers is reflected in the applications of economics to policy discussed in this text; even though the first person singular is not used, many of the examples in this book reflect my personal experiences—whether in international trade negotiations or budget reform procedures.

## THE PLAN OF THE BOOK

Many reviewers of this text commented on the clear and accessible way it captures many of the new ideas in economics developed during the last fifty years. While it is gratifying to hear such reviews, let me explain in what ways I think this book is different.



it might help in understanding. The goal is to show how to *use* the supply and demand model and to learn to “think like an economist,” just as in the initial treatment of this model by Alfred Marshall.

Macroeconomics is concerned with the growth and the fluctuations in the economy as a whole. Part 2 starts with an analysis of how the whole economy is measured, laying down basic principles relating to investment and saving. It explains how the level of unemployment in the economy as a whole is determined. The level of well-being in an economy depends on the capital workers have to work with and on the growth of technology, including workers’ skills. Thus, Part 2 explores the accumulation of capital and technological progress. These are the fundamental determinants of the economy’s growth path about which there is considerable agreement among economists. This text is unique in providing a complete analysis of long-run issues before going on to develop the theory of economic fluctuations. This approach has the advantage of focusing on issues about which there is general agreement among economists and in which many of the deep policy problems facing us at the end of the 20th century lie: high structural unemployment and low long-term growth. Moreover, this ordering helps the student understand short-term economic fluctuations.

But the economy does fluctuate as it grows over time. Declines in production and increases in unemployment (characteristics of the recessions of the early 1980s and early 1990s) have not vanished from the landscape as the problems of low long-term growth have come to the fore. Part 3 of the book, therefore, delves into the causes of these fluctuations and an analysis of why they end. Money and inflation play a significant role in both the beginning and the end of economic fluctuations. Part 3 begins with money and inflation; the part centers around a graphical approach that traces out the close link between fluctuations in inflation and fluctuations in output and employment.

Countries have tried a variety of approaches to deal with economic growth and economic fluctuations. For example, some have kept strict control over money and government spending while others have been more concerned with the exchange rate. Part 4 of the book examines these different approaches to policy. There are differences of opinion on these policy issues and I have tried to explain these as clearly and as objectively as I can. But there are also areas of agreement, which are stressed. Part 4 also looks into the international aspects of policy, especially in Chapter 21 on international finance. Chapter 22 examines alternative approaches to converting economies from central planning to more market-oriented systems, a task that confronts a large segment of the world’s population today.

**Part 2:**  
**Foundations of Macroeconomics:**  
**Measurement and Long-Run**  
**Fundamentals**

**Part 3:**  
**Money and Economic**  
**Fluctuations**

**Part 4:**  
**Government Policy**

## PEDAGOGICAL ADVANTAGES

In my classroom experience, I have observed that students find the following pedagogical features of this book helpful in learning economics.

***Applications of economic models within the text.*** This feature emphasizes that learning *how to use* models in real world situations is as important as learning *about* models. Just to mention one example, the application of the supply and demand model to a recent drought in the U.S. peanut market is found in the text of Chapter 3.

***Motivating students to study economic models through puzzles to be explained.*** Most chapters begin with a description of real world phenomena; by the end of the chapter the theory is developed that explains the phenomena. Examples include: the role of technology in the Industrial Revolution (Chapter 9) and the behavior of real output and inflation during the 1981–1982 recession and the 1990–1991 recession (Chapter 15).

***Integrating new material in the context of substantive economic problems*** rather than in separate chapters. This approach demonstrates the relevance of the new ideas and keeps the text to a manageable size.

***Brief reviews at the end of each major section*** (about four per chapter) summarize the key points in abbreviated form as the chapter evolves; these reviews are useful for preliminary skim reading as well as for review.

***Boxes to give both current-event and historical perspectives.*** Many of the text's boxes (all written by the author of the text) explain how to decipher recent news stories about economic policy. Others examine the contributions of the great economists such as Alfred Marshall and John Maynard Keynes; the history of great ideas such as the multiplier; and key historical events such as the recovery from the Great Depression.

***Functional use of full color*** to distinguish between curves and to show how the curves shift dynamically over time. Examples of the effective use of multiple colors are found in the discussion of increasing opportunity costs in Chapter 2 and the determination of the equilibrium interest rate in Chapter 8.

***Complete captions and small conversation boxes in graphs.*** There are approximately 250 figures. The captions and the small yellow-shaded conversation boxes, which show the steps in the derivation of graphs, make many of the figures completely self-contained. By sequentially numbering these conversation boxes, the dynamic nature of the curves is stressed.

***Use of photos and cartoons to illustrate abstract ideas.*** Special care has gone into the search for and selection of photos to illustrate difficult economic ideas such as the production function and the multiplier. Each text photo (many consisting of two or three parts) has a short title and caption to explain its relevance to the text discussion.

***Key term definitions*** are placed in the margin, and a listing of the terms appears at the end of every chapter and appendix. There is also an alphabetized *glossary* at the end of the book.

***Questions for review*** are found at the end of every chapter and appendix. These are tests of recall and require only short answers; they can be used for oral review or as a quick self-check.

***Problems***, an essential tool in learning economics, have been carefully selected and tested. An ample supply of these appear in every chapter and appendix. Some of these problems ask the reader to work out examples that are slightly different from the ones in the text; others require a more critical thinking approach. The most challenging ones are placed at the very end of each list.

## A COMPLETE PACKAGE OF TEACHING AND LEARNING AIDS

A highly effective teaching and learning package has been prepared to accompany the text. It provides a full range of support for instructors and students.

**Study Guide.** David Papell of the University of Houston and John Solow of the University of Iowa have prepared the study guide for the text. In my view, this study guide provides a wonderful learning opportunity that many students will value. Each chapter contains an overview, informal chapter reviews, and a section called *Zeroing In*, which harnesses student intuition to explain the chapter's most important concepts. The study guide also provides ample means for practice in using the economic ideas and graphs introduced in each text chapter. There is a mix of question types, including many graph-based questions and problems as well as a twenty-question multiple-choice practice test. A section called *Working it Out* provides worked problems that take the student step by step through the analytical process needed to solve real-world applications of core concepts covered in the chapter. These are followed by practice problems that require students to use the same analytical tools. Detailed answers are provided for all review and practice questions.

In addition, the study guide includes end-of-part sections that emphasize the way economic concepts are woven together to explain large social and economic systems. Each end-of-part section includes a brief recap of the main concepts covered in the part, a quiz covering material from the entire part, and a section called *Looking Beyond the Exam: Using Economics Outside the Classroom*, which includes excerpts from newspapers and journals and from government documents such as the *Economic Report of the President* with questions that relate the examples to ideas in the text.

**The Houghton Mifflin Tutorial and Simulation Software.** A flexible, interactive computerized tutorial is available for students to review basic concepts covered in the text. Students are directed back to the text for extra review of concepts they are having difficulty mastering, and a glossary and context-sensitive help are always available. The simulation component of the software extends the study of selected modules, allowing students to manipulate real-life data and make decisions based on a host of complex, interrelated factors.

**Test Bank.** A reliable test bank is the most important resource for efficient and effective learning and teaching. A test bank to go along with the text has been prepared by Stuart Glosser of the University of Wisconsin, Whitewater, J. Byron Schlomach of Texas A & M, and myself. It contains more than 4,500 test questions—including multiple choice, true/false, short answer, and problems—many of which are based on graphs. The questions are coded for correct answer, question type, level of difficulty, and text topic. At the end of each test bank chapter is a set of problems that parallels the carefully selected end-of-chapter problems from the text. The test bank is available in both printed and computerized form.

**Computerized Test Program.** A sophisticated and user-friendly program called ESA Test is available so that instructors can quickly create tests 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. The program is available in DOS, Windows, and Mac versions.

***Instructor's Resource Manual.*** Prepared by Clifford B. Sowell of Berea College, William Stewart Mounts, Jr., of Mercer University, and myself, The Instructor's Resource Manual provides both first-time and experienced instructors with a variety of additional resources for use with the text. Each chapter contains a brief overview, teaching objectives, key terms from the text, a section that orients instructors to the text's unique approach, and a suggested lecture outline with teaching tips that provide additional examples not found in the text and hints for teaching more difficult material. Discussion topics and solutions to end-of-chapter text problems are also provided.

***Overhead Transparencies.*** A set of full-color transparencies for all the numbered figures used to describe the economic models or theories in the text are available for those who are using the text. I usually use two overhead projectors in class so that more than one figure or table can be shown simultaneously.

***Electronic Lecture Manager.*** This Windows-based software developed by Houghton Mifflin allows instructors to create customized lecture presentations that can be displayed on computer-based projection systems. The software makes available the figures, tables, and key equations from the text and also allows for access to laser disc sequences and screens from other Windows-based software. With the Electronic Lecture Manager, instructors can quickly and easily integrate all these components—and create their own screens as well—to prepare a seamless classroom presentation with minimal in-class tinkering.

***Experimental Economics Lab Manual.*** I have regularly used experiments in my introductory economics classes—both small sections and large lectures—to illustrate how markets work. For those instructors who would like to do similar experiments, a lab manual has been prepared by Greg Delemeester of Marietta College and John Neral of Frostburg State University. Written with the first-time user in mind, the lab manual includes an overview of each experiment and detailed step-by-step instructions for conducting the experiment.

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John B. Taylor  
Stanford, California  
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