

S E C O N D E D I T I O N

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OLIVIER BLANCHARD



MACROECONOMICS

SECOND EDITION

Olivier Blanchard

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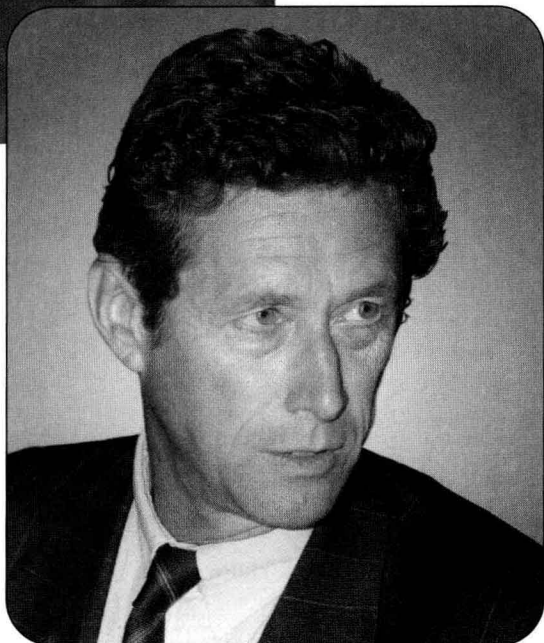
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A NOELLE



ABOUT THE AUTHOR



Olivier Blanchard is the Class of 1941 Professor of Economics at MIT. He is also Chairman of the Department of Economics at MIT. He did his undergraduate work in France, and received a Ph.D. in economics from MIT in 1977. He taught at Harvard from 1977 to 1982, and has taught at MIT since 1983. He has frequently received the award for best teacher in the department of economics, most recently in 1999.

He has done research on many macroeconomic issues, from the effects of fiscal policy, to the role of expectations, to price rigidities, to speculative bubbles, to unemployment in Western Europe, and more recently transition in Eastern Europe. He has done work for many governments and many international organizations, including the *World Bank*, the *IMF*, the *OECD*, the *EU commission* and the *EBRD*. He has published over 150 articles and edited or written over 15 books, including *Lectures on Macroeconomics* with Stanley Fischer.

He is a research associate of the National Bureau of Economic Research, a fellow of the Econometric Society, a member of the American Academy of Arts and Sciences, and a past Vice President of the American Economic Association.

He lives in Cambridge, with his wife, Noelle. He has three daughters, Marie, Serena, and Giulia.

P R E F A C E

I had two main goals in writing this second edition:

- To make close contact with current macroeconomic events.

What makes macroeconomics exciting is the light it sheds on what is happening around the world, from the introduction of a new currency in Western Europe, to the elimination of budget deficits in the United States, to the transformation of Eastern Europe, to the crisis in Asia. These events—and many more—are described in the book, not in footnotes, but in detailed boxes, each box showing how macroeconomics can be used to get an understanding of what happened. My hope is that these boxes not only convey the fun of macroeconomics, but also reinforce the lessons from the models, making them more concrete, and easier to grasp.

- To provide an integrated view of macroeconomics.

The book is built around one underlying model, a model that concentrates on the implications of equilibrium conditions in three sets of markets: the goods market, financial markets, and the labor market. Depending on the issue at hand, the parts of the model relevant to the issue are developed in more detail while the others are simplified or left in the background. But the underlying model is always the same. My hope is that, as a result, readers of this book will see macroeconomics as a coherent whole, not as a collection of models drawn from a hat.

The response to the first edition, in the United States and around the world, has shown that I share these goals with many instructors and students of macroeconomics. At the same time, feedback from teachers and students has also led me to make two important changes relative to the first edition.

- I have changed the organization of the book.

The book is now organized around two main parts, a **core** and a set of three major **extensions**. The core gives an integrated view of the short run, the medium run, and the long run. The three extensions examine the role of expectations, the implications of openness, and pathologies, from high unemployment to hyperinflation. This has two advantages:

It allows the reader to **quickly get an integrated view of macroeconomics**, from short-run fluctuations to growth.

It gives **more flexibility** to instructors in using the book. Once the core has been covered, any one of the three extensions can be taught without the need to cover the other two.

- I have tried to recreate the dialogue that takes place in the classroom, but is typically absent from textbooks.

I have done this by introducing margin notes running in parallel to the text. These notes serve many purposes: to emphasize an important point, to help with a derivation, to relate an argument to an earlier one, to summarize a series of steps, to suggest further readings, to give a related fact, or to tell a related anecdote. My belief is that these notes make reading the book and learning from it much easier.

Organization

The book has two central components, a core and the set of three major extensions. An introduction precedes the core. The set of extensions is followed by a review of the role of policy. The book ends with an epilogue (the structure of the book is highlighted by the flow-chart on the front end paper of the text).

- Chapters 1 and 2 introduce the basic facts and issues of macroeconomics. Chapter 1 offers a tour of the world, from the United States, to Europe, to Asia. Some instructors may prefer to cover it later, perhaps after Chapter 2, which introduces basic concepts, articulates the notions of short run, medium run, and long run, and gives a quick tour of the book.

While Chapter 2 gives the basics of national income accounting, I have moved a detailed treatment of national income accounts to Appendix 1 at the end of the book. This both decreases the burden on the beginning reader, and allows for a more thorough treatment in the appendix.

- Chapters 3 to 13 constitute the **core**.

Chapters 3 to 5 focus on the **short run**. They characterize equilibrium in the goods market and in the financial markets, and they derive the basic model used to study short-run movements in output, the *IS-LM* model.

(I have removed the chapter in the first edition which focused on dynamics and on the use of econometrics in macroeconomics. It came too early

in the book and proved too hard for students to master. It has been partially replaced by Appendix 3 on econometrics at the end of the book. Some instructors may want to use it to show how macroeconomists actually estimate relations between variables, how they try to distinguish between correlation and causality. This can be done at any point during the course.)

Chapters 6 to 9 focus on the **medium run**. Chapter 6 focuses on equilibrium in the labor market and introduces the natural rate of unemployment. Chapters 7 to 9 develop a model based on aggregate demand and aggregate supply, and show how that model can be used to understand movements in activity and in inflation, both in the short and in the medium run. Chapter 9, which looks at the dynamic relation between inflation and activity, is a bit harder, and is optional.

Chapters 10 to 13 focus on the **long run**. Chapter 10 describes the facts, showing the evolution of output over countries and over long periods of time. Chapters 11 and 12 develop a model of growth, focusing on the determinants of capital accumulation and technological progress and the role of each in growth. Chapter 13, which is optional, focuses on the effects of technological progress not only in the long run, but also in the short and the medium run. This topic is typically not covered in textbooks but is an important one. Also the chapter shows how one can integrate the short run, the medium run, and the long run—an example of the payoff to an integrated approach to macroeconomics.

- Chapters 14 to 24 cover the three major extensions.

Chapters 14 to 17 focus on the role of **expectations** in the short run and in the medium run. Expectations play a major role in most economic decisions, and, by implication, in the determination of output. Chapter 14, which introduces basic tools, is simplified relative to the first edition. Also, many readers rightly suggested it was both easier and more natural to start with the role of expectations in financial markets. Thus, the order of the chapters on financial and goods markets, Chapters 15 and 16, has been inverted relative to the first edition.

Chapters 18 to 21 focus on the implications of **openness** of modern economies. Much has happened in the world since the first edition: Many countries have adopted new exchange rate regimes, and a number of countries have gone through serious exchange rate crises. These developments, and

what we have learned from them, are reflected in Chapter 21, which is largely new.

Chapters 22 to 24 focus on **pathologies**, times when something in the economy appears to go very wrong. Chapter 22 looks at periods of high unemployment. Chapter 23 looks at episodes of hyperinflation. Chapter 24 looks at two of the main events of the 1990s, transition in Eastern Europe and the Asian crisis.

- Chapters 25 to 27 return to **macroeconomic policy**.

While most of the first 24 chapters discuss macroeconomic policy in one form or another, the purpose of chapters 25 to 27 is to tie the threads together. Chapter 25 looks at the role and the limits of macroeconomic policy in general. Chapters 26 and 27 review monetary and fiscal policy. Some teachers may want to use parts of these chapters earlier. For example, it is easy to move forward the discussion of the government budget constraint in Chapter 27.

- Chapter 28 serves as an **epilogue**. It puts macroeconomics in historical perspective, showing the evolution of macroeconomics in the last 50 years and discussing current directions of research.

Alternative Course Outlines

I have made the chapters shorter than is standard in textbooks and, in my experience, most chapters can be covered in an hour and a half. A few (Chapters 5 and 7 for example) may require two lectures to sink in. Within the book's broad organization, there is plenty of opportunity for alternative course organizations:

- Short courses (15 lectures or less)

A short course can be organized around the two introductory chapters and the core. Leaving aside Chapters 9 and 13, both optional, gives a total of 11 lectures. Informal presentations of one or two of the extensions, based for example on Chapters 14 and 15 for expectations, and on Chapter 18 for the open economy, can then follow, for a total of 14 lectures.

A short course may leave out instead the study of growth (the long run). In this case, the course can be organized around the introductory chapters, and Chapters 3 to 8 in the core; this gives a total of 8 lectures, leaving enough time to cover, for example, Chapters 14 to 16 on expectations, and Chapters 18 to 20 on the open economy, for a total of 14 lectures.

- Longer courses (20 to 25 lectures)

A full semester course gives more than enough time to cover the core, plus at least two extensions, and the review of policy.

The extensions assume knowledge of the core, but are otherwise mostly self contained (one exception: The analysis of the Asian crisis in Chapter 24 requires knowledge of the first two extensions). Given the choice, the order in which they are best taught is probably the order in which they are presented in the book. Starting with the study of the role of expectations is useful for example in understanding the interest parity condition, and the nature of exchange rate crises.

One of the choices facing teachers is likely to be whether to teach growth (the long run) or not. If growth is taught, there may not be enough time to cover all three extensions and have a thorough discussion of policy. In this case, it may be best to leave out the study of pathologies. If growth is not taught, there should be time to cover most of the other topics in the book.

Features

I have made sure never to present a theoretical result without relating it to the real world. For this purpose, in addition to discussions of facts in the text itself, I have introduced three types of boxes:

- **Focus** boxes, which expand on a point made in the text.
- **In Depth** boxes, which look at a particular macroeconomic episode in detail.
- **Global Macro** boxes, which look at macroeconomic episodes from around the world.

As described earlier, a major innovation in this edition is the presence of margin notes running parallel to the text. Their function is to create a dialogue with the reader, to smooth the more difficult passages, and to allow for a deeper understanding of the concepts and the results derived along the way.

For students who want to explore macroeconomics further, I have introduced the following three features:

- **Digging deeper** notes, which expand on an argument in the text, often by indicating how an implicit assumption in the text could be relaxed, and what the implications might be.
- **Short appendixes** to some chapters, which show how a proposition in the text can be derived more rigorously or expanded.
- A **Further readings** section at the end of each chapter, indicating where to find more information, including a number of key internet addresses.

Each chapter ends with three ways of making sure that the material in the chapter has been thoroughly understood:

- A **summary** of the chapter's main points.
- A list of **key terms**.
- A series of **end-of-chapter exercises**, some of them requiring access to the internet, some of them requiring the use of a spreadsheet program. More challenging exercises, web based or otherwise, are indicated by an asterisk (*).

The Teaching and Learning Package

The book comes with a number of supplements to help both students and instructors.

For instructors:

- **Instructor's Manual.** Written by Mark Moore, of University of California-Irvine, the Instructor's Manual discusses pedagogical choices, alternative ways of presenting the material, and ways of reinforcing students' understanding. For each chapter of the book, the manual has 7 sections: objectives, in the form of a motivating question; why the answer matters; key tools concepts and assumptions; summary; pedagogy; extensions; and observations and additional exercises. The Instructor's Manual also includes the answers to all end-of-chapter questions and exercises.
- **Test Item File.** Written by David Findlay of Colby College, the test bank is completely revised with an additional 25 new multiple-choice questions per chapter, for a total of over 1200 questions.
- **Prentice Hall Test Manager, Version 4.1.** This computerized version of the Test Item File allows instructors to add, delete, edit, and save custom exams, as well as create data files to store and compare student scores.
- **Transparency Masters.** A complete set of transparency masters for all of the figures and tables in the text can be downloaded by adopters from www.prenhall.com/blanchard. Contact your Prentice Hall representative for a password.
- **PowerPoint Lecture Slides.** Created by Jeffrey Caldwell and Steve Smith, these electronic slides provide outlines, summaries, equations, and graphs for each chapter, and can be downloaded from www.prenhall.com/blanchard.

For students:

- **Study Guide.** David Findlay, of Colby College, has done an outstanding job of writing a student-friendly study guide. Each chapter begins with a presentation of objectives and a review. It is organized in the form of a tutorial, covering the important points of the chapter, with learning suggestions along the way. The tutorial is followed by quick self-test questions, review problems, and multiple-choice questions. Solutions are provided for all Study Guide problems.
- **Active Graphs CD-ROM.** Stephen Perez, of Washington State University, and Gregory M. Werner, have created a series of 48 active graphs corresponding to the most important figures in the book. Each graph allows the student to change the value of a variable and look at the effects on the equilibrium. Experience indicates that using graphs in this way considerably strengthens the students' intuition and understanding of the mechanisms at work.

For both instructors and students, **Prentice Hall's Learning on the Internet Partnership and Companion Website** (www.prenhall.com/blanchard) offers Internet exercises, activities, and resources related specifically to the second edition of *Macroeconomics*. All internet resources are updated every two weeks.

For students, PHLIP includes:

- **Research Area.** A collection of tips and resources helps students to harness the research potential of the Internet through tutorials, links to virtual libraries, and a wealth of search engines.
- **Current Events Articles and Exercises.** Relevant articles fully supported by group activities, critical thinking exercises, discussion questions, reference resources, key topics, and the like, which help keep students up-to-date with today's events.
- **Companion Website Interactive Study Guide.** Written by Rashid Al-Hmoud of Texas Tech University, this on-line self-assessment offers multiple-choice, true/false, and essay questions for every chapter. Graded by the Prentice Hall server, these quizzes provide students with immediate feedback, including additional help and section references linked to the text. Results for these activities, as well as the on-line quizzes and exams, can be sent to as many as four e-mail addresses.
- **A Student Study Hall,** which helps develop study skills through:

- **Ask the Tutor.** Virtual office hours that allow students to post questions from any supported discipline and receive monitored responses from the dedicated PHLIP faculty team.
- **Talk in the Hall.** A format for students to ask each other questions on-line.
- **Writing Skills.** On-line writing assistance that provides links to on-line directories, thesauruses, writing tutors, style and grammar guides, and additional tools.
- **Study Skills.** A resource center with links to academic and professional sites dedicated to helping students achieve their college goals through good study habits.
- **Study Tips.** An area providing helpful tips designed to help students develop better study skills.
- **Career Resources.** A section to help students investigate potential employment situations on the web, get career information, view sample resumes, and even apply for jobs on-line.

For faculty, PHLIP includes:

- **Downloadable supplements.** Ancillaries include Instructor's Manual, PowerPoint presentation, and transparency masters.
- **On-line faculty support.** Includes additional cases, current events articles, links, and full support for exercises posted on the Student Page.
- **Syllabus Manager.** Easy-to-use, this program allows faculty to create on-line custom syllabi hosted on Prentice Hall server. Syllabus Manager provides instructors with an easy, step-by-step process to create and revise syllabi, with direct links into Companion Web site and other on-line content. Changes you make to your syllabus are immediately available to your students at their next log in. For more information, please visit the on-line demo located at www.prenhall.com/demo.
- **A Faculty Lounge** where you can find:
 - **Teaching Archive.** Teaching resources from professors throughout the world, that enables instructors to share tips, techniques, academic papers, and sample syllabi.
 - **Talk to the Team.** A moderated and password-protected faculty chat room that allows instructors to communicate with other professors on-line. Instructors can share new teaching ideas, make suggestions, and ask questions, which gives them the opportunity to take advan-

tage of the experiences and knowledge of other professors.

- **Computer Help.** An on-line computer-assistance section that offers tips and links to tutorials, helping instructors master spreadsheets, word processing, and presentation software.

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Olivier Blanchard
Cambridge, MIT
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