

Macro economics

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BRIEF CONTENTS

Part 1: Preliminaries

- 1 Introduction to Macroeconomics 3
- 2 Measuring the Macroeconomy 17

Part 2: The Long Run

- 3 An Overview of Long-Run Economic Growth 39
- 4 A Model of Production 65
- 5 The Solow Growth Model 95
- 6 Growth and Ideas 129
- 7 The Labor Market, Wages, and Unemployment 165
- 8 Inflation 189

Part 3: The Short Run

- 9 An Introduction to the Short-Run 217
- 10 The IS Curve 237
- 11 Monetary Policy and the Phillips Curve 265
- 12 Stabilization Policy and the AS/AD Framework 297

Part 4: Applications

- 13 The Government and the Macroeconomy 337
- 14 International Trade 361
- 15 Exchange Rates and International Finance 387
- 16 Parting Thoughts 417

P R E F A C E

Intermediate macroeconomics is one of my favorite classes to teach. To the new student, the macroeconomic world is a complicated place, full of arcane statistics. It is a great pleasure to witness the moments of understanding that occur throughout a course in macroeconomics: when students appreciate the tremendous economic growth that has occurred over the last century; when they first understand the state-of-the-art theories of why such growth occurs.

But there is also a practical lesson to be learned. Macroeconomics matters. Great depressions, hyperinflations, and growth miracles—enormous wealth is created, lost, and transferred by macroeconomic events. Understanding macroeconomics is not, therefore, a purely intellectual endeavor. Lives and livelihoods are at stake.

I'm extremely excited about this new macroeconomics text. I hope you will find it engaging and illuminating.

Innovations

(This section will make the most sense to readers with some familiarity with macroeconomics, especially instructors. Students new to the subject might skip to the Guided Tour.)

The most popular textbooks for teaching intermediate macroeconomics were first written fifteen or twenty years ago. Our understanding of the macroeconomy has improved substantially since then, and the time is ripe for a new, more modern treatment.

Of course, this book is by no means a revolution. Its order and structure will feel familiar to in-

structors. But the execution, examples, and pedagogy all have been updated to incorporate the best that macroeconomics instruction has to offer.

What's special about this book? Innovations occur throughout, but the key ones are described below.

RICH TREATMENT OF ECONOMIC GROWTH

Economic growth is the first major topic explored in the book. After an overview chapter describes the facts and some tools, Chapter 4 presents a (static) model based on a Cobb-Douglas production function. Students learn what a model is with this simple structure, and they see it applied to understanding the 50-fold differences in per capita GDP that we see across countries. Chapter 5 presents the Solow model—but with no technological change or population growth, which simplifies the presentation. Instead, students learn Robert Solow's insight that capital accumulation cannot serve as the engine for long-run economic growth.

Chapter 6 then offers something absent in most (all?) other intermediate macro books: a thorough exposition of the economics of ideas and of Paul Romer's insight that the discovery of new ideas can drive long-run growth.

FAMILIAR YET UPDATED SHORT-RUN MODEL

When I began this book, I was confident I had new, better ways to present the growth material. I was less sure about how to improve the presentation of short-run macroeconomics. With help from students, reviewers, and colleagues, however, I am now extremely excited about the short-run presentation.

Chapter 12 is where the payoff occurs, and we see the simple, familiar AS/AD framework. The innovation is that the graph is drawn with inflation on the vertical axis rather than the price level—perfect for teaching students about the Volcker disinflation, the Great Inflation of the 1970s, and modern monetary policy. All of the short-run analysis—including explicit dynamics—can be performed in this single graph.

Another innovation in getting to the AS/AD framework is a focus on interest rates and the absence of an LM curve. The central bank sets the interest rate directly in Chapter 11; Chapter 12 introduces a simple version of John Taylor’s monetary policy rule to get the AD curve.

A final innovation in the short-run model is that it features an open economy from the start. Business cycles in the rest of the world are one source of shocks to the home economy. To keep things simple, however, the initial short-run model does not include exchange rates.

INTERPLAY BETWEEN MODELS AND DATA

A tight connection between models and data is a feature of modern macroeconomics, and this connection pervades the book. Many exercises ask students to work with real data. Some of this is available in the book itself; some is obtained by using the online *Economic Report of the President*; and some is available in a new data tool I’ve put together: Country Snapshots. This is a pdf file available from wwnorton.com/college/econ/chad that contains a page of graphs for each country in the world. The data underlying the graphs can be obtained as a spreadsheet simply by clicking on a link at the top of each page.

WORKED EXERCISES AT THE END OF EACH CHAPTER

One of the most effective ways to learn is by working through problems, and a carefully chosen collection of exercises is included at the end of each chapter. From among these, one or two are selected and worked out in detail. Students

are encouraged to attempt these exercises on their own before turning to the full solution.

MORE EMPHASIS ON THE WORLD ECONOMY

Relative to many intermediate macro books, this text features more emphasis on the world economy. This occurs in three ways. First, the long-run growth chapters are a main emphasis in the book, and these inherently involve international comparisons. Second, the short-run model features an open economy (albeit without exchange rates) from the very beginning. Finally, the book includes two international chapters in Part 4: in addition to the standard international finance chapter that appears as Chapter 15, Chapter 14 is entirely devoted to international trade.

BETTER APPLICATIONS

Part 4 of the book includes three chapters of applications: the two international chapters just discussed and a chapter on the government and the macroeconomy, including an application to what I’ve called “The Fiscal Problem of the Twenty-First Century”—how to finance the growing health-care expenditures. These chapters are not essential, and some instructors may wish to skip one or more of them depending on time constraints.

This approach to applications differs from the more traditional approach of devoting a chapter to each of the expenditure components of GDP (consumption, investment, and so on). These components are discussed in Chapter 10 (“The IS Curve”).

A Guided Tour

The book consists of three main parts: The Long Run, The Short Run, and Applications. Surrounding these are an introductory section (Preliminaries) and a concluding chapter (Parting Thoughts).

This organization reflects an increasing appreciation in the profession of the importance of long-

run macroeconomics. In addition, it makes sense from a pedagogical standpoint to put the long run first: this way students understand what it is that the economy fluctuates *around* when we get to the short-run chapters.

A brief overview of each part follows.

Part 1: Preliminaries

We begin with an overview of macroeconomics: what kind of questions macroeconomics addresses and how it goes about its business. A second chapter then discusses the data of macroeconomics in more detail, with a focus on national income accounting.

Part 2: The Long Run

The second part of the book consists of Chapters 3 through 8, and these chapters consider the macroeconomy in the long run. Chapter 3 presents an overview of the facts and tools that economists use to study long-run macroeconomics, with special attention to economic growth. Chapter 4 introduces the Cobb-Douglas production function as a way to understand the enormous differences in standards of living that we see across countries. The interplay between theory and data that is central to macroeconomics makes a starring appearance in this chapter.

Chapter 5 considers the Solow model of economic growth, one of the workhorse models of macroeconomics. We study the extent to which the Solow model can help us understand (a) why some countries are rich while others are poor, and (b) why people in the advanced countries of the world are so much richer today than they were a hundred years ago. Somewhat to our surprise, we will see that the model does not do a good job of explaining long-run economic growth.

For this explanation, we turn in Chapter 6 to the Romer model, which emphasizes the role played by the discovery of new ideas. Thinking about the economics of ideas leads to profound changes in the way we understand many areas of economics.

Chapter 7 studies the most important market in modern economies, the labor market. We learn about the determination of the unemployment rate in the long run and discover that many readers of this book are already, in some sense, millionaires.

Chapter 8 concludes the long-run portion of the book by considering inflation. The quantity theory of money provides a long-run theory of inflation, which, according to Milton Friedman, occurs because of “too much money chasing too few goods.”

Part 3: The Short Run

Part 3 is devoted to the branch of macroeconomics that students are probably most familiar with: the study of booms, recessions, and the rise and fall of inflation in the short run. The four chapters of this part form a tight unit that develops our short-run model.

Chapter 9 provides an overview of the macroeconomy in the short run, summarizing the key facts and providing an introduction to the short-run model that will explain these facts. The next three chapters then go through the model in detail.

Chapter 10 introduces the IS curve, a key building block of the short-run model. The IS curve reveals that a fundamental determinant of output in the short run is the real interest rate. Chapter 11 shows how the central bank in an economy can move the interest rate in order to keep the economy close to full employment. Chapter 11 also provides the link between the real economy and inflation, called the Phillips curve.

Chapter 12 culminates this part of the book, viewing our short-run model in an aggregate supply/aggregate demand (AS/AD) framework. This framework allows the complete dynamics of the economy in the short run to be studied in a single graph. Using this framework, the chapter emphasizes the key roles played by expectations, credibility, and time consistency in modern macroeconomic policymaking.

Part 4: Applications

Part 4 introduces three important applications in macroeconomics. Chapter 13 studies the role played by the government in the macroeconomy, including the role of budget deficits and the government's budget constraint. The chapter also considers a key problem that governments around the world will face in coming decades: how to finance the enormous increases in health spending that have occurred for the last fifty years and that seem likely to continue.

Both the long-run and the short-run parts of the book place the study of macroeconomics in an international context. Indeed, the short-run model includes open economy forces from the very beginning. The final two applications of the book, however, go even farther in this direction.

Chapter 14 focuses on international trade. Why do countries trade? Are trade deficits good or bad? How have globalization and outsourcing affected the macroeconomy? Chapter 15 studies international finance, including the determination of the exchange rate.

Parting Thoughts

Chapter 16 concludes our study of macroeconomics. We summarize the important lessons learned in the book, and we offer a brief guide to the key questions that remain less than well understood.

Learning Aids

- *Overview:* The opening page of each chapter provides an overview of the main points that will be covered.
- *Boxes around key equations:* Key equations are boxed to highlight their importance.
- *Graphs and tables:* The main point of each figure is summarized in an accompanying text box. Tables are used to summarize the key equations of a model.
- *Guide to notation:* The inside back cover contains a guide to the notation used in the book,

listing each symbol, its meaning, and the chapter in which it first appears.

- *Case studies:* Case studies in each chapter highlight items of interest.
- *Chapter summaries in list form:* The main points of each chapter are listed for easy reference and review.
- *Key concepts:* Important economic concepts are presented in bold type when they first appear. At the end of the chapter, they are listed together for review.
- *Review questions:* Review questions allow students to quiz themselves on what they've learned.
- *Exercises:* Carefully chosen exercises reinforce the material from the chapter and are intended to be used for homework assignments. These exercises include many different kinds of problems. Some require graphical solutions, others use numbers. Some ask you to look for economic data online and interpret it in a particular way. Others ask you to write a position paper for a presidential candidate or to pretend you are advising the chair of the Federal Reserve.
- *Worked exercises:* From the exercises, one or two are selected and worked out in detail at the end of each chapter. These exercises are indicated by the “worked exercise” icon in the margin. You will find these answers most helpful if you consult them only after you have tried to work through each exercise on your own.
- *Glossary:* An extensive glossary at the end of the book defines terms and provides page numbers where more information can be found.



Supplements for Students

STUDENT STUDYSPACE

David Agrawal, University of Michigan
www.norton.com/studyspace

The student StudySpace for *Macroeconomics* is a free and open resource for students to review key concepts and test themselves prior to midterms and finals. It also contains a link to

the SmartWork homework problems. The StudySpace offers the following features:

For organizing

- Progress Reports
- Chapter Outlines

For learning

- Diagnostic Review Quizzes: multiple-choice and true/false quizzes for each chapter that test students on key concepts, data, and facts and provide diagnostic feedback
- Interactive Graphs: interactive versions of the graphs presented in the text

For connecting

- Data Plotters: exercises which use real data plotted in graphs to help students understand trends and concepts related to data models
- Interactive Concept Tutorials: interactive Flash-based tutorials where students can get extra help with the most challenging concepts in the course
- Economics in the News RSS feed
- Link to SmartWork

STUDENT STUDY GUIDE

David Gillette, Truman State University

This comprehensive learning manual includes the following for each chapter:

Overview of the chapter

Full definition of the key concepts

True/False Review Questions, with Solutions

Multiple-Choice Review Questions, with Solutions and Explanations

Exercises, with Complete Solutions

~~Worked-Out Exercises~~

~~Problems~~, with Complete Solutions

~~Worked-out Problems~~

The solutions to the exercises and problems provide unparalleled support for the student trying to master the material in the course.

Supplements for Instructors

SMARTWORK

Online Homework and Tutorial Program with an Integrated Ebook

Elias Aravantinos, Queens College, City University of New York

Developed by university educators, SmartWork is the most intuitive online tutorial and homework-management system available for the intermediate macroeconomics course. Powerful quizzing engines support a wide range of questions, including multiple-choice and those using interactive graphs and macroeconomics equations. Answer-specific feedback, tutorial questions, and hints coach students through solving problems, while links to the integrated ebook encourage active reading and provide easy reference to the concepts discussed in the text. Assigning, editing, and administering homework is easy with SmartWork's intuitive authoring tools, which allow instructors to modify existing problems or create their own.

Smartwork highlights:

An intuitive and easy-to-use interface

Extensive hinting and answer-specific feedback, including multistep guided tutorial problems

A wide range of question types, including interactive graphs, multiple-choice, and economics equations

Intuitive authoring tools that give instructors an easy-to-use environment for editing existing problems or creating their own

An easy-to-use math palette for composing graphs and mathematical expressions

Algorithmically generated variables so each student sees a slightly different version of the same problem

An at-a-glance gradebook that offers a visual summary of students' work

A full complement of tools for managing assignments and grades.

LECTURE POWERPOINTS

Ryan Edwards and Elias Aravantinos, both of Queens College, City University of New York

This set of PowerPoint slides includes every graph and table from the text, along with insightful annotations. It also contains a PowerPoint slide covering each key concept presented in the chapter, thus providing a lecture-ready resource for the instructor.

INSTRUCTOR'S MANUAL

Garett Jones, George Mason University

This valuable instructor's resource includes for each chapter an overview, a suggested approach to the chapter lecture, expanded case studies, additional case studies, and complete answers to the end-of-chapter problems.

TEST BANK

Robert Sonora, Fort Lewis College

Available on CD-ROM or for download in rich-text, Blackboard Learning System, and *ExamView*® *Assessment Suite* formats, the test bank includes over 1,400 carefully constructed true/false and multiple-choice questions.

~~COMPUTERIZED TEST BANK~~

Instructor's Resource Site

Downloadable resources will include the test bank in rich-text, WebCT/Blackboard, and *ExamView* formats, graphs in jpeg format and as PowerPoints, lecture PowerPoints, and chapter quizzes in WebCT and Blackboard format.

More information on these resources will be available soon from
www.norton.com/college/econ/chad