MACROECONOMICS

Ninth Edition

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Richard G. Lipsey
Simon Fraser University

Peter O. Steiner
The University of Michigan

Douglas D. Purvis
Queen's University

Paul N. Courant
The University of Michigan

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MACROECONOMICS

PREFACE

Economics is a living discipline. Through nine editions of *Economics,* our basic motivation has been to provide a text that reflects the tremendous changes in that discipline over the decades.

The first major theme of this book is to reflect the movement of economics toward becoming a science and exhibiting the key characteristic that marks any science: the systematic confrontation of theory with observation. Today most economists agree that their subject is more than a stage for parading pet theories and is not just a container for collecting masses of unrelated institutional and statistical material. Economists are expanding the frontiers of knowledge about the economic environment and are learning to understand and sometimes to control it, but new problems and new events are always challenging existing knowledge. Economists are therefore continually concerned with how theory, institutions, and facts relate to each other. Every theory is subject to empirical challenge.

A second major theme of this book concerns the relationship between economic theory and economic policy. Decades of systematic observations have provided an ever-growing understanding of how things relate to one another quantitatively. This knowledge has increased economists' ability to make sensible and relevant statements about public policy. True, there remain many areas where economists' knowledge is painfully sparse, as current debates about our international competitiveness and about the nature of an appropriate monetary policy remind us.

The third major feature of the book has to do with the way we view students. We have tried to be as honest with them as possible within the limits of an introductory textbook. No subject worth studying is always easy, and we do not approve of slipping particularly hard bits of analysis past students without letting them see what is happening and what has been assumed, nor do we approve of teaching them things that they will have to unlearn if they continue their study of economics (a practice sometimes justified on the grounds that it is important to get to the big issues quickly). In short, we have tried to follow Albert Einstein's advice: *Make things as simple as possible, but not simpler.*

Effective criticism of existing ideas is the springboard to progress in science. We believe that introductory economics should introduce students to methods for testing, criticizing, and evaluating the present state of the subject. We do not believe that it is wrong to suggest to students the possibility of criticizing current economic theory. Students will always criticize and evaluate their course content, and their criticisms are more likely to be informed and relevant if they are given practice and instruction in how to challenge what they have been taught in an effective, constructive manner.

Major Revisions in This Edition

The revisions introduced in this ninth edition are the result of an extensive series of reviews and feedback from those who have used the previous editions of this book. There are a number of major additions, including several completely new chapters, but we have also strived very hard to improve the "teachability and readability" of the book. Every part of the book has been thoroughly reviewed with these two goals in mind.

Changes in Macroeconomics

This is now the fourth edition in which the macroeconomics material has relied mainly on the tools of aggregate demand and aggregate supply. Our emphasis in this revision has been on improving the teachability of this section. We have simplified the discussion in several places and have restructured the material in two chapters to provide flexibility to the instructor. The book now builds up much more systematically: The first seven macroeconomic chapters are a presentation of the model and some simple applications before the "elaboration" begins in Chapter 13. From a teaching viewpoint this is a major improvement.

Other specific macroeconomics changes include these:

1. The aggregate demand and aggregate supply curves are now introduced only as they are needed. Thus, the necessarily brief introduction of the two curves that previously occurred in the first macro chapter has been dropped. This not only simplifies the introduction to macroeconomics but also means that the whole macro development follows a much more even flow, with concepts introduced only as they become used.

2. Chapter 6 is now devoted solely to the introduction of the main macro variables, including a discussion of how some of these are measured by index numbers. Chapter 7 deals with national income accounting, while Chapter 8 covers the Keynesian expenditure-equals-income equilibrium for the goods market and the simple multiplier. Only then, in Chapter 9, are the aggregate demand *(AD)* and the short-run aggregate supply *(SRAS)* curves introduced, and macroeconomic equilibrium of the price level and national income determined.

3. Chapter 28 introduces long-run equilibrium by first showing the induced shifts in the *SRAS* curve when income diverges from its potential level. This leads to the derivation of the long-run aggregate supply *(LRAS)* curve. The distinction between the two curves is then carefully examined. We feel that it is worth the effort required to establish this distinction, because, as economists, we are concerned about the many textbooks that carry out the bulk of their analysis with a single, stable *AS* curve. This simplifies teaching, but it risks serious confusion. The alert student, faced with a fixed *AS* curve and an *AD* curve that can be shifted by policy, will wonder why anyone would hesitate to pay the price of a once-and-for-all increase in the price level in order to obtain a permanent increase in output and employment. Who, faced with such a trade-off, would hesitate to pay the price increase? To avoid such serious confusions, we introduce the shifting, short-run *AS* curve and the vertical, long-run *AS* curve at the outset.

4. Chapter 11 has been completely rewritten to better integrate it into the book and to redirect it toward its initial purpose—elucidating the role of fluctuations and cycles as motivation for studying economic policy. Chapter 12, "An Introduction to Fiscal Policy," also has been very thoroughly rewritten and shortened. Chapters 11 and 12 now appear essentially as applications of the aggregate demand and aggregate supply apparatus that the student has just mastered (or at least encountered). All extraneous material has been excised or moved to later parts of the book. For example, the detailed discussion of the debate on government budget deficits (which really requires understanding of the monetary issues in Chapters 13–15) now appears later in the book in a new chapter, Chapter 19.

5. Chapter 13, "Monetary Policy," has been revised thoroughly. There is now more focus on the external value of the U.S. dollar in the formulation and appraisal of monetary policy. A second (not unrelated) change is increased attention to the "globalization" of financial markets, including a box with that title.

6. Chapter 16, "Inflation," has been reworked and greatly simplified. The emphasis now is more on long-term inflation control and less on the issue of how to break an entrenched inflation, which was important at the time of writing the previous edition.

7. Chapter 18, "Economic Growth," has also received some revision. We now pay some notice to the new "endogenous growth" models that are currently attracting attention and also develop the modern theme that growth and cycles are really part of the same phenomenon and need to be studied in a common model.

8. In order to emphasize its continuing importance and to provide maximum flexibility for the instructor, the material on budget deficits and related political economy issues now appears in a self-contained chapter, Chapter 19. (The appendix to Chapter 18 provides a detailed discussion of the Ricardian equivalence hypothesis.) "Macroeconomic Controversies" now appears as Chapter 20; here we have added a lot of new material, including a treatment of real business cycle theory and of several aspects of the so-called New Keynesian economics.

9. Finally, the international material has been updated and revised to reflect current concerns. We have included a new chapter on the policy issues created by openness of the economy: the role of exchange rates and external balances, and their im-

pact on policy choices and the consequences of such choices. The international section has been revised and expanded to reflect the growing importance of international economic issues in American policy formation. The treatments of dynamic comparative advantage, nontariff barriers to trade, including voluntary export restrictions, and the longer-term consequences of the overvaluation of the American dollar (which is only being rectified at the time of writing) are all new or greatly expanded.

Teaching Aids

Key ideas in macroeconomics. New to this edition are two full-color insert sections that repeat important conceptual diagrams from the text with abbreviated captions as a review device for students. Each of these diagrams is intended to be a memory-jogger that says to the student, "Do you remember and understand this concept? If not, return to the proper chapter and reread it in detail."

Tag lines and captions for figures and tables. The boldface tag line below or next to a figure or a table states briefly the central conclusion to be drawn from the illustration; the lightface caption gives information needed to reach that conclusion. Each title, tag line, and caption, along with the figure or table, forms a self-contained unit, useful for reviewing.

Boxes. The boxes contain examples or materials that are relevant extensions of the main text but need not be read as part of the text sequence. They are all optional. Some have further theoretical material. Others contain expansions and applications of points already covered in the text. The boxes give flexibility in expanding or contracting the coverage of specific chapters.

End-of-chapter material. Each chapter has a Summary, a list of Topics for Review, and Discussion Questions. The questions are designed for class discussion or for "quiz sections." Answers appear in the Instructor's Manual.

Appendixes. All of the appendixes are optional, and most contain material that is less central to a first-year course than is the text material. These are designed for flexibility, rather than to suggest that the material is in some sense peripheral. The present structure allows the instructor to choose to cover either marginal utility or indifference curves, or both, or neither.

Mathematical notes. Mathematical notes are collected in a separate section at the end of the book. Since mathematical notation and derivation are not necessary to understand the principles of economics but are helpful in more advanced work, this segregation seems to be a sensible arrangement. Mathematical notes provide clues to the uses of mathematics for the increasing number of students who have some background in math, without loading the text with notes that are useless and put off other readers. Students with a mathematical background have often told us that they find the mathematical notes helpful.

Glossary. The glossary covers widely used definitions of economic terms. Words in the glossary are printed in boldface type when they are first mentioned in the text. Some words, however, that are discussed in the text but are not printed in boldface type appear in the glossary.

Supplements

Our book is accompanied by a workbook, *Study Guide and Problems,* by Fredric C. Menz, John H. Mutti, and Dascomb R. Forbush. The workbook can be used either in the classroom or by the students on their own. It offers additional study support for each text chapter, including chapter overviews, objectives, matching self-tests, exercises, review questions, additional problems, and a special case with related questions for each Part of the text. It is available in one- or two-volume editions.

An *Instructor's Manual,* prepared by us, includes an explanation of the approach used in each text chapter, along with a chapter overview, answers to all end-of-chapter questions, and additional teaching suggestions. Also provided are answers to all problems and cases in the student *Study Guide.*

Test Bank I, by Clark Ross, contains 2,500 updated multiple-choice questions, nearly one-third of which are completely new. *Test Bank II,* by Kevin O'Brien, Clark Ross, and Dereka Rushbrook, offers 2,000 completely new multiple-choice questions. Both test banks are free to adopters. The *Test Banks* are also available in a microcomputerized version, called *Harper Test,* which provides customized testing capabilities.

The Lipsey Disk 2: Key Concepts for Review, a computerized student review tool, provides 20 crucial multiple-choice questions for each chapter in the text. If an incorrect answer is given, the student is referred to specific text pages for further study. Free to adopters, it is available for use with IBM PC and compatibles. *Lipsey MACROVIEW Simulation* is a new software package that gives students hands-on experience in dealing with macro problems and variables inherited by the Bush Administration. This program is also available free to adopters for use with the IBM PC and compatibles.

For this edition, all illustrations in 15 key theory chapters are reproduced as two- or four-color transparency acetates. In addition, the remaining figures in the text are reproduced in the form of transparency masters. All of these are available free to adopters.

Using the Book

Needs of students differ: Some want material that goes beyond the average class level, but others have gaps in their backgrounds. To accommodate the former, we have included more material than we would assign to every student. Also, because there are many different kinds of first-year economics courses in colleges and universities, we have included more material than normally would be included in any single course.

Those Who Helped with This Edition

Several individuals provided reviews of the ninth edition micro chapters in various drafts: Ernest Ankrim, Pacific Lutheran University; Stephen A. Baker, Capital University; Trudy Cameron, University of California at Los Angeles; Kathleen A. Carroll, University of Maryland, Baltimore; David H. Dean, University of Richmond; Bruce Herrick, Washington and Lee University; Bruce E. Kaufman, Georgia State University; Dennis Koepke, University of Wisconsin–Whitewater; Jerome K. Laurent, University of Wisconsin–Whitewater; Thea M. Lee, University of Michigan; Richard McIntyre, University of Rhode Island; Robert C. Puth, University of New Hampshire; William Doyle Smith, University of Texas at El Paso; and Mira Wilkins, Florida International University.

Other instructors provided reviews of the ninth edition macro chapters: Willie J. Belton, Georgia Institute of Technology; George S. Bohler, Florida Community College–North Campus, Jacksonville; James L. Butkiewicz, University of Delaware; Conrad Caligaris, Northeastern University; David Denslow, University of Florida; Carl E. Enomoto, New Mexico State University; Ziad Keilany, University of Tennessee, Chattanooga; Luther D. Lawson, University of North Carolina–Wilmington; Richard McIntyre, University of Rhode Island; W. Douglas Morgan, University of California, Santa Barbara; James Nordyke, New Mexico State University; Donald H. Silva, University of Wisconsin–Whitewater; and Habib A. Zuberi, Central Michigan University.

We are most grateful to all of these people for their helpful suggestions.

The new edition has benefited greatly from the research assistance of Carolyn Betts, Heather Lathe, Patricia Casey-Purvis, David Scoones, Charlotte Mack, and Kevin O'Brien. Ellen McKay and Elaine Fitzpatrick handled with skill and patience our mountains of manuscript and innumerable revisions. Weidenfeld and Nicholson generously gave permission to use material first prepared for the sixth and seventh editions of *An Introduction to Positive Economics* by R. G. Lipsey. With this edition, we are pleased to welcome Professor Paul N. Courant of the University of Michigan to our team of authors.

Richard G. Lipsey
Peter O. Steiner
Douglas D. Purvis
Paul N. Courant

TO THE STUDENT

A good course in economics will give you insight into how an economy functions and into some currently debated policy issues. Like all rewarding subjects, economics will not be mastered without effort. A book on economics must be worked at. It cannot be read like a novel.

Each of you must develop an individual technique for studying, but the following suggestions may prove helpful. It is usually a good idea to read a chapter quickly in order to get the general run of the argument. At this first reading, you may want to skip the boxes and any footnotes. Then, after reading the Topics for Review and the Discussion Questions, reread the chapter more slowly, making sure that you understand each step of the argument. With respect to the figures and tables, be sure you understand how the conclusions that are stated in the brief tag lines with each table or figure have been reached. You should be prepared to spend time on difficult sections; occasionally, you may spend an hour on only a few pages. Paper and a pencil are indispensable equipment in your reading. It is best to follow a difficult argument by building your own diagram while the argument unfolds rather than by relying on the finished diagram as it appears in the book. It is often helpful to invent numerical examples to illustrate general propositions. The end-of-chapter questions require you to apply what you have studied. We advise you to outline answers to some of the questions. In short, you should seek to understand economics, not to memorize it.

After you have read each part in detail, reread it quickly from beginning to end. It is often difficult to understand why certain things are done when they are viewed as isolated points, but when you reread a whole part, much that did not seem relevant or entirely comprehensible will fall into place in the analysis.

We call your attention to the glossary at the end of the book. Any time that you encounter a concept that seems vaguely familiar but is not clear to you, check the glossary. The chances are that it will be there and that its definition will remind you of what you once understood. If you are still in doubt, check the index entry to find where the concept is discussed more fully. Incidentally, the glossary, along with the captions that accompany figures and tables and the end-of-chapter summaries, may prove to be very helpful when you are reviewing for examinations.

The bracketed colored numbers in the text itself refer to a series of 49 mathematical notes that are found starting on page 553. For those of you who like mathematics or prefer mathematical argument to verbal or geometric exposition, these may prove useful. Others may ignore them.

We hope that you will find the book rewarding and stimulating. Students who used earlier editions made some of the most helpful suggestions for revision, and we hope that you will carry on the tradition. If you are moved to write to us, please do.

CONTENTS

PART 1

THE NATURE OF ECONOMICS

Chapter 1

The Economic Problem

Many of the world's most pressing problems are economic. The dominant problem of the 1930s was the massive unemployment of workers and other resources that resulted from the Great Depression. The wartime economy of the 1940s solved that problem but created a new one: how to reallocate scarce resources quickly between military and civilian needs. The period from 1945 to 1955 was a time of worldwide economic growth as the major economies recovered from World War II. As the European nations tried to rebuild their war-shattered economies, a major concern was whether they could export enough to pay for all that they needed to import.

The period from 1955 to 1965 was a time of unparalleled growth in prosperity as the world experienced a period of expanding output and trade. Unemployment was a concern during some of this period, as was the inability of most economies to achieve *both* full employment and zero inflation. From 1965 to 1975 a slowdown in growth and rising inflation became matters for serious concern. The central problems of the late 1970s and early 1980s were the rising cost of energy—oil prices increased tenfold from 1974 to 1980—and the disturbing combination of rising unemployment and rising inflation, called *stagflation*.

In the United States, high unemployment was a major problem of the early 1980s, and persistent balance-of-trade deficits throughout the rest of the decade led to a concern about the threat to American jobs from foreign competition. Dramatic increases in agricultural subsidies in many advanced countries and the persistent debt crisis faced by a number of poorer countries created an uncertain international environment. Massive government deficits and the growth of the public debt cast a shadow of concern that will linger throughout the rest of the century.

Problems change over the decades, yet there are always problems. Of course, not all the world's problems are primarily economic. Political, biological, social, cultural, and philosophical issues often predominate. However, as the following examples suggest, no matter how "noneconomic" a particular problem may seem, it will almost always have a significant economic dimension.

1. The crises that lead to wars often have economic roots. Nations fight for oil and rice and land to live on, although the rhetoric of their leaders evokes God, Glory, and the Fatherland.
2. The current rate of world population growth is 2.1 persons per second, or about 65 million people a year. The economic