

MACRO ECONOMICS

Theory, Performance, and Policy

SECOND EDITION

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MACRO- ECONOMICS

THEORY, PERFORMANCE, AND POLICY



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Preface

THE ENTHUSIASTIC response given to the first edition of this book heartened us, and was soon countered by the sobering responsibility of success. Nowhere in economics does research develop as rapidly as in macroeconomics, so our goal—to capture the spirit and content of the new work in a form that is manageable in the intermediate-level course—requires steady revision. Also, while our fellow researchers have given us major discoveries to contend with, the tens of thousands of students who have used the book have made many useful suggestions about how to fine tune the presentation. And because teaching the macroeconomics course at Stanford has benefited enormously from the MacroSolve software, we are pleased that with this edition our publisher makes it available to all our readers.

The late 1980s have seen the complete assimilation of the big idea of the 1970s: rational expectations. The results can be seen in every chapter of this book. Our discussion of consumption, investment, foreign trade, and money embraces rational expectations at many points. Even in areas—notably the sluggish adjustment of prices—where our model has properties disputed by leading rational expectations theorists such as Robert Lucas or Thomas Sargent, our analysis adopts rational expectations.

Recent years have seen an upsurge of interest in models where only real factors influence real variables. We devote more attention in this edition to the real business cycle view in its several forms, although the main thrust of our analysis is toward a view in which both real and monetary factors shape the economy in the short run.

With all this attention to new developments, however, it remains our conviction that there is much that is worth retaining in traditional Keynesian and monetarist macroeconomics. In particular, two key ideas remain important in our thinking. First, output, not prices, responds strongly in the short run to shifts in demand; in the long run, prices adjust, returning the economy towards its potential level determined by the supply of labor and capital. Second, as a consequence of this, the level of employment and hence of disposable income is a given to households in the short run, so it is useful to look at the propagation of spending through the consumption function. In other words, we have not banished the expenditure process of elementary macroeconomics, though we move beyond it early in the book.

Price adjustment, of course, is a basic fact of macroeconomics, and this book puts demand, supply, and price adjustment on an equal footing. There is more to the subject than IS-LM and aggregate demand, so we try not to spend so much time on the details of aggregate demand that aggregate supply and price adjustment become an addendum covered late in the course. Students get the basics of aggregate supply and price adjustment in the first few chapters of the book; later chapters uncover their origins in microeconomics and the stickiness of wages and prices that develops at the microeconomic level.

Chapters 4–7 constitute a complete macro model, capable of analyzing all the major concerns of macroeconomics including inflation. In the second edition, we have strengthened and augmented this mini-course. Now we have separate chapters—Chapters 4 and 5—on spending and on financial markets, which allow a fuller development of the IS-LM model. Another advantage of this change is that the crucial topic of foreign trade now appears earlier, as an integral part of the presentation of consumption and investment in Chapters 4 and 5.

Other significant changes are the streamlining of the investment model in Chapter 9, fuller treatment of trade in Chapter 10, simplification of monetary economics in Chapter 12, a more familiar treatment of the flexible-price IS-LM model in Chapter 13, and a discussion of real business cycle models in Chapter 14.

In almost every chapter, we have added topic boxes, a well-received feature of the first edition. They now include such new topics as “Does a Tax Cut Pay for Itself?” (Chapter 4), “Portfolio Investment and Macro Investment” (Chapter 5), “IS-LM in the Business Pages” (Chapter 5), “How the Real Business Cycle School Views Supply” (Chapter 6), “Three Oil Price Shocks” (Chapter 7), “Why Is the Saving Rate Higher in Japan Than in the U.S.?” and “Does Consumption Take a Random Walk?” (Chapter 8), “The Effect of the Tax Reform Act of 1986” (Chapter 9), “The Budget Deficit and the Trade Deficit” (Chapter 10), “Deficit Control: The Gramm-Rudman-Hollings Approach” (Chapter 11), “What Does a Union Contract

Look Like?” (Chapter 15), “What Would an Optimal Policy Have Been in 1979–86?” (Chapter 17), and “The Annual Economic Summits” (Chapter 18).

Distinctive Features at a Glance

What, in our experience, makes this book work well as a class text? A short list includes the following features, most of which set this book apart from others in the field:

- Development early on of a *complete working macro model* with aggregate demand, aggregate supply, and price adjustment.
- Treating the *price level as a predetermined variable* consistently throughout the book for expositional simplicity.
- Repeated use of *intertemporal budget constraints* that link savings to the accumulations of assets for consumers, firms, and government.
- Introduction to the *open economy* early in the book and integration of this into the macro model.
- A comprehensive treatment of the *microeconomic foundations of macroeconomic theory*.
- Careful exposition of the *empirical regularities* of the macroeconomy at the start of each chapter on micro foundations.
- Review of the *policy implications* of micro foundations for IS, LM, or price adjustment at the end of each chapter on micro foundations.

Pedagogical Features at a Glance

There are several strictly pedagogical features in the text that we have found enhance presentation of the material.

- *Summary boxes* draw together key ideas at appropriate places within each chapter. They serve a reinforcing function by allowing readers to check their understanding of one aspect of the analysis before tackling new material. And they also serve a review function, helping readers locate the building blocks of the analysis without rereading entire chapters.
- *Topic boxes* introduce special concepts related to the discussion in the text, including computing growth rates, quarterly GNP statistics, budget projections, indexing taxes, and the relationship between graphs and algebra. They also present discussion of historical examples, current policy issues, and other illustrations of points in the text.
- *Problems*. At the end of each chapter there are two types of problems: nu-

merical and analytical. The numerical problems require the use of a hand calculator and usually take more time. We have found these useful for special projects. The analytical questions can be done with graphs or simple algebra. In addition, there are short questions for review.

- *References.* We have tried to keep footnotes to a minimum. Footnotes are used mainly to document a specific statement or reference in the text.
- *Parallel graphical and algebraic presentation.* In most cases arguments are presented in both graphical and algebraic form. We have found that some students learn better with graphs and some learn better with algebra, especially if the algebra is presented in a way that does not intimidate. Graphical arguments are not necessarily easier for all students and the algebra is provided to help those with a preference for algebra. Of course, graphical presentation usually helps with the intuition and we would expect even the less graphically inclined students to learn basics such as the Keynesian cross or IS-LM. A special effort has been made to demonstrate that graphs and algebra are just two ways to describe the same economic concepts. See especially the topic box on page 75.
- *Real-world examples.* Showing how economic theory works in practice is the best way to learn. Too often, however, these lessons of experience are placed at some distance from the analysis, with the result that students often sense that a barrier exists between macroeconomic models and the real world from which they are drawn. We have chosen to make the performance of the economy an integral aspect of the exposition, with new concepts constantly illuminated by examples.
- *Teaching supplements.* An *Instructor's Manual* that we have prepared jointly with Gary W. Yohe of Wesleyan University is available from the publisher. This *Instructor's Manual* contains many teaching "tricks" to prompt students to become actively involved in the subject. These include macro-forecasting contests, policy projects on Federal Reserve monetary targeting and federal budget projections, debate formats for lectures, classroom skits to illustrate the forward-looking theory of consumption and other models, and class participation in financial decision-making. There are also references to more complicated material related to the text and a large number of test questions. An excellent *Study Guide* prepared by David H. Papell of the University of Houston to go with the text is also available. A *Test-Item File* of roughly 700 questions has been prepared by Gary W. Yohe and is available either in printed form as part of the *Instructor's Manual* or on diskette for most personal computers.
- *Computer software.* The MacroSolve package, written by Stephen R. King and Rick M. McConnell, embodies the IS-LM and price adjustment equations developed in the text. The user can shift curves on the graphical display and see immediately how the economy reacts.
- *Data sources.* Whenever possible the data in charts and tables are taken from the most recently available *Economic Report of the President*. This

makes it easy to look up additional related data, or to keep lectures up-to-date.

A Guided Tour

The book starts with a mini-course in macroeconomic analysis in Part I that covers many important topics. We review the basic facts of macroeconomic fluctuations and develop a simple but complete model of the macroeconomy. Our approach to aggregate demand is standard, through the IS-LM apparatus. We include trade even in the first development of the IS curve. We have chosen to use the term aggregate supply in its classical sense—a vertical line in the output-price diagram, showing the full-employment, or potential, level of output. The long-run equilibrium of the economy occurs at the intersection of aggregate demand and potential output.

The path to long-run potential is governed by the price-adjustment process. But the price level is unresponsive in the short run—output occurs where the aggregate demand curve intersects the predetermined-price level. We do not drop the predetermined-price assumption when we bring the supply side into the picture. IS-LM remains our theory of output determination in each period of the dynamic analysis. Price adjustment comes into play the period after a policy or other change has affected output.

The expositional simplification we achieve in this way is enormous. We do not feel that the empirical evidence justifies the complexity of simultaneous determination of prices and output in each period. There is certainly no contradiction to the predetermined-price assumption if the period is a quarter of a year, and the assumption is valid as a close approximation if the period is a full year.

The adaptation of price adjustment to inflation ranks high among the ideas that have evolved in macroeconomics over the past two decades. We avoid characterizing this adaptation solely as a matter of changing expectations. Even with rational expectations, price adjustment depends partly on recent inflation experience since contracts and other rigidities prevent quick adjustments. We discuss how the adaptation of expectations to inflation depends on how prices and wages are set.

After the short course in macroeconomic analysis, we go on to develop the micro foundations of aggregate demand in Part II. At the start of each chapter we present the key facts or puzzles that need to be explained. At the end of each chapter we look at the implications for IS-LM. The consumption chapter (8) develops a forward-looking theory of consumption based on the life cycle and permanent income formulations, emphasizing the role of rational expectations. By establishing an intertemporal budget constraint, we avoid present discounted values and forbidding summations. Chapter 9, on investment, focuses on Dale Jorgensen's model. The foreign trade

chapter (10) focuses on flexible exchange rates, with a rational expectations model of the exchange rate as its centerpiece. Chapter 11, on government, contains more material on the deficit and government debt than is customary alongside a standard treatment of automatic stabilizers and related subjects. When the intertemporal budget constraint for the government is presented, the idea is already familiar to the student from consumption and investment. Chapter 12, on the monetary system, takes up money demand and describes the role of the Federal Reserve using financial balance sheets developed in Part I. We emphasize the credit, or intermediation, role of banks in addition to their role in determining the money supply.

Part III contains much that we think is novel for an intermediate text. It is here that we develop the micro foundations of aggregate supply and price adjustment. Chapter 13 sets the stage with perfect price flexibility, long-term growth, and inflation. An appendix deals with the algebra of rational expectations models. Chapter 14 takes a careful look at the real business cycle model and development in the area—the imperfect information model of aggregate supply developed by Robert Lucas. Chapter 15 deals with micro foundations and macro implications of overlapping wage setting. It also discusses markup pricing and the optimal contract model of Costas Azariadis, Martin Baily, and others. Chapter 16 discusses the implications of price adjustment for the dynamic behavior of the macroeconomy and compares these implications with actual experience.

Part IV pulls the analysis together into a comprehensive treatment of macroeconomic policy evaluation. Chapter 17 takes up general policy issues such as time inconsistency, multiplier uncertainty, targets and instruments, and the rational expectations critique of policy evaluation. The emphasis is on policy rules, rather than on one-time policy changes. The inflation-unemployment trade-off appears as a policy frontier between output stability and price stability. Chapter 18 then considers the problem of macroeconomic policy in the world economy including a review of how the international monetary system evolved from Bretton Woods and how policy works in countries with fixed exchange rates.

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