THIRD EDITION

MACROECONOMIC THEORY AND POLICY

William H. Branson

MACROECONOMIC THEORY AND POLICY

THIRD EDITION

William H. Branson
Princeton University

1817
HARPER & ROW, PUBLISHERS, New York
Grand Rapids, Philadelphia, St. Louis, San Francisco,
London, Singapore, Sydney, Tokyo

Sponsoring Editor: John Greenman
Project Editor: Ellen MacElree
Cover Design: Joseph Cavalieri
Text Art: Fineline Illustrations Inc.
Production Manager: Jeanie Berke
Production Assistant: Beth Maglione
Compositor: TAPSCO, Inc.
Printer and Binder: R. R. Donnelley & Sons Company
Cover Printer: Phoenix Color Corp.

Macroeconomic Theory and Policy, Third Edition

Library of Congress Cataloging in Publication Data

Branson, William H.
Macroeconomic theory and policy / William H. Branson. — 3rd ed.
p. cm.
Includes bibliographies and index.
ISBN 0-06-040932-0
1. Macroeconomics. I. Title.
HB172.5.B73 1989
339—dc19 88-32622
CIP

89 90 91 92 9 8 7 6 5 4 3 2 1

MACROECONOMIC THEORY AND POLICY

Preface

The first edition of *Macroeconomic Theory and Policy* grew out of my lectures at the advanced undergraduate and graduate levels, in the late 1960s, at Princeton University. Similarly, the new and revised material in the second edition was developed as a result of teaching macroeconomic courses at Princeton, and as a visitor at the University of Stockholm and the Institute for Advanced Studies in the Social Sciences in Vienna during the turbulent 1970s. The new material and extensive revisions in the third edition reflect the rise in importance of rational expectations and intertemporal maximization in the 1980s. The basic objectives and methodology of the first two editions are retained, but the third edition is thoroughly revised, with two new chapters, to reflect the macroeconomic events and theoretical developments of the 1980s.

In this third edition, I still try to meet three objectives concerning substance (*what* material is presented), while adhering to three principles concerning methodology (*how* the material is presented). Concerning substance, I want first to give the reader a fairly thorough discussion of the structure of the macroeconomic system and the theoretical questions and controversies concerning this basic structure before getting down to the details of empirical estimates of the precise shape of the economy. So the first substantive objective is to display to the reader the skeleton of the macroeconomy and how its parts interact, before we get into controversies concerning the precise measurement of the body. This basic theoretical overview is accomplished in Part Two, after three brief introductory chapters deal with the national income accounts and basic multiplier models from the principles course.

The second substantive objective is to provide a fairly thorough review of the empirical work that has been done to date on the various sectors of the economy that we discuss in skeletal form in Part Two. This review includes development of alternative theories concerning consumer behavior, investment demand, and so on; the empirical estimates that have been developed on the basis of these theories; and the modifications of the basic structure that these estimates require. This basic empirical review, which is meant to acquaint the student with typical quantitative relationships in the U.S. economy, is accomplished in Part Three.

Finally, I have integrated the static theory of income determination with modern growth theory and with the recent work in medium-term dynamics.

In Part Four, several of the dynamic mechanisms that take the economy from the short-run equilibrium of Part Two to the long-run growth paths of Part Five are discussed. In Part Five, I introduce the readers to some of the important results from growth theory, such as the "turnpike theorems" of optimal growth, and also to some of the problems of growth theory, such as the unexplained "residual" in economic growth. Thus, integration of static general equilibrium theory and growth models comes in Parts Four and Five.

Concerning methodology, my first principle is to present a general equilibrium view of the macroeconomy, in which we analyze supply and demand in several aggregate markets, impose the equilibrium condition that supply equals demand at the equilibrium price, and then study the interrelationships between the sectors as policy variables change. This approach is clear in Part Two, where the macroeconomy is developed from the single market model of the Keynesian multiplier (in which only the product market for goods and services is considered), to a multisector model which includes product, money, and labor markets. At the end of Part Two, in the new Chapter 11, the behavior of the model with rational expectations, is explicitly contrasted to the case of adaptive expectations. Near the end of Part Three we add a foreign exchange market and the exchange rate in developing the foreign sector.

The second methodological principle I follow is to develop the aggregate macroeconomic functions from basic microeconomic principles. For example, in Chapter 12 the aggregate consumption function is developed from the microeconomic theory of consumer behavior. This principle is followed both to give the reader an intuitive feeling for the relation of the macroeconomic functions to observed individual behavior and to erase the imaginary boundary between micro- and macroeconomics that develops in many economics curricula.

The final methodological, or expositional, principle is to juxtapose verbal (or literary), graphical, and algebraic discussions of the material. This technique developed naturally in the Princeton lectures in response to a division among the students roughly into one group with a good economics background but little mathematics and another—mostly engineers—with mathematical training but little economics. This kind of parallel development makes the material easily accessible to students with or without mathematical training. At the same time, this technique may help to interest nonmathematicians in mathematical modes of analysis, while permitting students with a mathematical background to develop new insights into "real-world" economics.

The book focuses on policy questions and the current "state of the art" in macroeconomics, bringing in doctrinal controversies only where they are relevant to current problems. I have not footnoted references in the text; whenever theories or results associated with particular individuals are discussed, the appropriate references are included in the selected readings.

Revisions in the second edition reflected both advances in macroeconomic theory and the macroeconomic events of the 1970s. The major macroeconomic events were the deep worldwide recession of 1974–1975 and the subsequent "stagflation"—persistence of inflation with high unemployment. This led macroeconomic research to shift to an emphasis on the supply side of the economy, and the second edition reflected this shift. An important theoretical development in macroeconomics during the 1970s was the reinterpretation of the static equilibrium model of Part Two as a short-run model of general equilibrium with price rigidities, nonclearing markets, and quantity rationing. A complete exposition of the model when markets do not clear is retained in Chapter 18, adapted by John Muellbauer and Richard Portes from their paper published in the *Economic Journal*. I want to thank them for the care they took in integrating this new approach into the text.

The revisions in the third edition reflect mainly the increase in importance of expectations and intertemporal decision making in macroeconomic theory in the 1980s. Time and expectations are introduced explicitly in the new Chapter 6 on labor markets, and adaptive expectations in the new Chapter 7 on aggregate supply. These split Chapter 6 of the second edition into two. A completely new Chapter 11, on rational expectations, appears in the third edition. There rational and adaptive expectations are compared, and the role of multiperiod wage contracts is discussed. Chapter 20 on wage dynamics and unemployment discusses the expectations-augmented Phillips curve, and applies it to an analysis of the inflation cycle in the United States from 1960 to 1988.

Intertemporal choice problems are discussed explicitly in Chapters 12 and 13 on consumption and investment in the third edition. The discussion of the transactions model of money demand is updated in Chapter 14, and the choice between the money stock and the interest rate as instruments of monetary policy is analyzed in Chapter 15. Finally, all the discussion of trend growth in Chapters 1, 22, and 27 is updated to reflect the slowdown in productivity growth in the United States since the mid-1970s.

In preparing the third edition, I have incorporated suggestions from correspondents too numerous to mention here. I want to thank them all. I have, of course, learned a lot from colleagues and students at Princeton who have used the text. Among my colleagues, particular thanks go to Stephen Goldfeld, Dwight Jaffee, and Alan Blinder. Special thanks go to Heidi Schmitt and Lenore Denchak, who prepared the manuscript, and to Princeton graduate students Yoonjae Choe, Daniel Hardy, and Elie Canetti, who provided valuable assistance at various stages of the revision. The editors at Harper & Row have been helpful and expert, as ever. The third edition remains dedicated to my children Kris, Bill, and Emily; may they finish college and prosper in the world!

William H. Branson

Contents

Part Two
NATIONAL INCOME DETERMINATION: THE STATIC EQUILIBRIUM MODEL 53

one

AN INTRODUCTION TO MACROECONOMICS

chapter 1

Actual and Potential GNP: Fluctuations and Growth

In *micro*economic theory, full employment of resources is generally assumed, so that the focus of the analysis is on the determination of relative prices and the allocation of scarce resources among alternative uses. On the other hand, *macro*economics focuses on the level of utilization of resources—especially the level of employment—and the general level of prices. In addition, within macroeconomics we consider the question of what determines the rate of growth of resources—the growth of potential output—as well as the determinants of their level of utilization at any one time.

The focus of classical microeconomics on the allocation of scarce resources for their best uses implicitly assumes that full employment—scarcity of resources—is the normal state of the economy. If the economy is operating at substantially less than full employment, resources are, at least temporarily, really not scarce, and the opportunity cost of additional output of almost any kind is about zero—more total output can be produced by simply reducing unemployment. Because the U.S. economy, for example, suffered major recessions or depressions with high unemployment in the years 1907–1908, 1920–1921, and 1930–1939, the relevance of classical microeconomics was bound to be questioned by more than just the hard-core skeptics.

THE DEVELOPMENT OF MACROECONOMICS

Partly as a reaction to the Great Depression—that's what the historians call it, even though one suspects the people living then didn't think it was so