PRINCIPLES OF MACRO-CONOMICS

JOSEPH E. STIGLITZ

SECOND EDITION

STANFORD

W · W · NORTON & COMPANY · NEW YORK · LONDO

Copyright © 1997, 1993 by W. W. Norton & Company, Inc. All rights reserved.

Printed in the United States of America.

The text of this book is composed in Zapf Book with the display set in Kabel Composition by TSI Manufacturing by Quebecor Hawkins Book design by Antonina Krass Cover painting: Laszlo Moholy-Nagy, LIS, 1922 Oil on canvas, 131 × 100 centimeters Courtesy of the Kunsthaus, Zurich Special thanks to Hattula Moholy-Nagy

Library of Congress Cataloging-in-Publication Data

Stiglitz, Joseph E.

Principles of macroeconomics / Joseph E. Stiglitz. — 2nd ed.
p. cm.
Includes index.
1. Macroeconomics. I. Title.

HB172.5.S75 1996
339—dc20

95-21272 CIP

ISBN 0-393-96838-3 (pbk.)

W. W. Norton & Company, Inc., 500 Fifth Avenue, New York, N.Y. 10110 http://web.wwnorton.comW. W. Norton & Company Ltd., 10 Coptic Street, London WCIA IPU

1234567890

PREFACE

Introductory students should know the vitality of modern economics, and this book is intended to show it to them. When I set out to write the First Edition, I felt that none of the available texts provided an adequate understanding of the principles of *modern* economics—both the principles that are necessary to understanding how modern economists think about the world, and the principles that are required to understand current economic issues. Apparently, my feelings were shared by many, as indicated by the resounding success of the First Edition. Not only was the book widely adopted in colleges and universities throughout the world, it was also rapidly translated into many languages—from major editions in Spanish, German, Italian, Japanese, and Chinese, to small editions in countries such as Latvia. This Second Edition builds on the initiatives of its predecessor. With the benefit of a wealth of feedback from the market, I have made a painstaking effort to improve the book from cover to cover. I believe both students and their instructors will be pleased with the result.

This Second Edition is also informed by my recent professional activities. During the last two years I have enjoyed a direct role in U.S. policy making as Chairman of the President's Council of Economic Advisers and as a member of the cabinet. This experience reinforced my conviction that the traditional principles course is too far removed from our national policy concerns and the modern advances in economics that can illuminate them. Moreover, my service on the council afforded me the opportunity to discuss key economic problems with leaders throughout the world, both in the major industrialized countries, and in India, China, Russia, and elsewhere. It was thus with a

unique perspective that I set to work on the revision during the last two years, carving out time on weekends and during countless hours before dawn.

Economics is the science of choice and writing a textbook involves many choices. As I began work on the Second Edition, I was convinced that the choices I had made in the First Edition—for instance, the attention to new topics such as technological change and finance, and the increased emphasis on international concerns—were moves in the right direction. However, I had become even more convinced that an understanding of these new topics had to be based on solid foundations in established fundamentals, such as the law of supply and demand, the theory of the firm, and traditional perspectives on unemployment, inflation, and economic growth. Thus, in the revision I simultaneously faced several challenges, not the least of which was to reinforce the exposition of the fundamentals at the same time as I strengthened the discussion of new topics.

As I began the revision, several of the dramatic changes that had loomed so large in the early 1990s seemed still to occupy center stage, but new issues and new perspectives had emerged. The Cold War has ended, with the political and economic system of Communism the clear loser. The economies of the former Soviet Union and Eastern Europe are making a slow and painful transition to market economies. The countries of East Asia have experienced unprecedented growth, in some cases at rates in excess of 10 percent, year after year; they have shown that development is indeed possible. Japan became an economic powerhouse, while Korea, Taiwan, and the other Asian "tigers" went from being poor, backward countries to major players in the international arena. Their growth was based on international trade; and trade throughout the world, including the United States, became increasingly important. Huge private capital flows helped finance the development of many countries as well as the huge deficits that the United States and other countries began to mount. When investors lost confidence in a country, as they did in Mexico in 1995, these same capital flows precipitated an economic crisis that quickly spread, and was only arrested through strong international cooperation.

The success of East Asia during the 1970s and 1980s stands out as an exception in a world economy facing disappointment; the countries of Africa saw their desperate economic conditions worsen. Beginning around 1973, growth in the industrialized countries, including the United States, slowed markedly. Europe, where unemployment rates in the 1960s had fallen to extremely low rates, saw them soar, often to double-digit levels, and stubbornly remain there; while in the United States, where growth had been benefiting all groups, but especially the poor, inequality increased, with those at the bottom actually seeing their living standards deteriorate.

Within the United States, the mid-1990s brought signs of a reversal of some of these trends. Unemployment and inflation rates fell to low levels that had not been seen for a quarter of a century. The poverty rate began to decline, and incomes of all groups, especially those at the bottom, began to rise. American manufacturing experienced rapid productivity growth, with matching success in the international arena—U.S. car production again became the largest in the world. But among many workers, anxiety remained high; while

their real wages and incomes had begun to rise, they still had not recovered to their earlier peaks, and no one was sure these trends would continue. Overall productivity growth also remained below its previous levels. Though the soaring deficit was brought under control—it had been the largest experienced in the United States during peacetime, with the national debt quadrupling between 1981 and 1992—the long-run prospects appeared daunting; the aging of the baby boomers would put unprecedented strains on the Social Security and health care systems.

As the world has changed, expectations have changed as well. While there has been enormous improvement in the quality of air in cities like Pittsburgh and Gary, Indiana, and while Lake Erie has been rescued from becoming polluted to the point where life could not survive, our expectations about the environment have grown even faster; we have become increasingly aware of environmental costs. Longevity has increased, but our knowledge of how to prolong life has grown more rapidly, and rising medical costs have become a major political issue. The economic role of women has changed: not only have they taken a more active part in the labor force, there has been a revolution in expectations concerning the kinds of jobs women can hold.

And in virtually every one of the major issues facing the economy, there is a debate about the role of government. Government in the United States has grown enormously. Before World War II, government took less than one out of every five dollars; today it takes one out of three. Still, government in the United States is proportionately smaller than in most other industrialized countries. At one level, there is remarkable agreement about what the government should do: it has, for instance, a responsibility to help the economy remain at full employment with stable prices, to protect the environment, to support education, and to provide for the national defense. But how the government should fulfill its responsibilities in each of these areas is highly contentious. Issues concerning the responsibility, capability, and strategies of government in economics have come to the center of the political debate.

These are exciting issues and events, and they fill the front pages of our newspapers and the evening television news shows. Yet in the past, as a teacher of the introductory course in economics, I felt frustrated: none of the textbooks really conveyed this sense of excitement. Try as they might, none seemed to prepare students adequately for interpreting and understanding these important economic events.

As I thought about it more, one of the reasons for this became clear: the principles expounded in the classic textbook of Alfred Marshall of a hundred years ago, or that of Paul Samuelson, now almost fifty years old, were not the principles for today. The way we economists understand our discipline had changed to reflect the changing world, but the textbooks had not kept pace. Our professional discourse was built on a *modern* economics, but these new developments simply were not adequately reflected in any of the vast array of textbooks that were available to me as a teacher.

Indeed, changes in the economics discipline over the past half century have been as significant as the changes in world events. The basic competitive model of the economy was perfected in the 1950s. Since then, economists have gone beyond that model in several directions as they have come to better understand its limitations. Earlier researchers had paid lip service to the importance of incentives and to problems posed by limited information. However, it was only in the last two decades that real progress was made in understanding these issues. The 1996 Nobel Prize was awarded to two economists who pioneered our understanding of the role of information and incentives in the economy. Their work, and the work of others in this field, have found immediate applications. Both the collapse of the former Soviet bloc economies and the failure of the American S & L's can be viewed as consequences of the failure to provide appropriate incentives. A central question in the debate over growth and productivity has been, how can an economy provide stronger incentives for innovation? The debate over pollution and the environment centers around the relative merits of regulation and providing incentives not to pollute and to conserve resources.

The past fifty years have also seen a reexamination of the boundary between economics and business. Subjects like finance and management used to be relegated to business schools, where they were taught without reference to economic principles. Today we know that to understand how market economies actually work, we have to understand how firms finance and manage themselves. Tremendous insights can be gleaned through the application of basic economic principles, particularly those grounded in an understanding of incentives. Stories of corporate takeovers have been replaced on the front page by stories of bankruptcies as acquiring corporations have found themselves overextended. The 1990 Nobel Prize was awarded to three economists who had contributed most to the endeavor to integrate finance and economics. Yet the introductory textbooks had not yet built in the basic economics of finance and management.

We have also come to better appreciate the virtues of competition. We now understand, for instance, how the benefits of competition extend beyond price to competition for technological innovation. At the same time, we have come to see better why, in so many circumstances, competition appears limited. Again, as I looked over the available textbooks, none seemed to provide my students with a sense of this new understanding.

Samuelson's path-breaking textbook is credited with being the first to integrate successfully the (then) new insights of Keynesian economics with traditional microeconomics. Samuelson employed the concept of the neoclassical synthesis—the view that once the economy was restored to full employment, the old classical principles applied. In effect, there were two distinct regimes to the economy. In one, when the economy's resources were underemployed, macroeconomic principles applied; in the other, when the economy's resources were fully employed, microeconomic principles were relevant. That these were distinct and hardly related regimes was reflected in how texts were written and courses were taught; it made no difference whether micro was taught before macro, or vice versa. In the last few decades, economists came to question the split that had developed between microeconomics and macroeconomics. The profession as a whole came to believe that macroeconomic behavior had to be related to underlying microeconomic principles; there was one set of economic principles, not two. But this view simply was not reflected in any of the available texts.

This book differs from most other texts in several ways. Let me highlight some of the most prominent distinctions.

- Reflecting my recent involvement in policy making, throughout the text I
 have introduced examples to relate economic theory to recent policy discussions. In each chapter, there is a policy perspective box providing a
 vignette on one particular issue. These policy discussions both enliven the
 course and enrich the student's command over the basic material.
- Economists are a contentious lot, yet on most issues, differences between economists pale in comparison to differences between noneconomists.
 Indeed, there is a high degree of consensus among economists, and I have drawn attention to this throughout the book with 14 points of consensus in economics.
- The organization of the macroeconomic presentation has been changed to reflect more closely the microeconomic foundations of macroeconomics. It begins in Part Two with an analysis based on perfect markets—a full-employment model with perfectly flexible wages and prices. This model has the virtue of being pedagogically simple, and yet remarkably powerful. From there I move to the other extreme—and the focus of traditional macroeconomics—an unemployment model with rigid wages and prices (Part Three). This leads to a discussion of the dynamics of adjustment. Here I present the analysis of an economy in which wages and prices are neither perfectly flexible, nor perfectly rigid, and in which a principal concern is the rate of inflation (Part Four).
- One of the virtues of the new organization is that I can turn, in Chapter 7, to
 the important topics of economic growth and fiscal deficits, as applications
 of the full-employment model. Later, in Chapters 17 and 18, I return to consider economic growth and the deficit in greater detail. Students are eager
 to learn about these fundamental macroeconomic subjects, which are the
 focus of considerable attention in current policy debates.
- Throughout the book, I integrate the insights of modern advances in economics—such as those provided by endogenous growth theory, rational expectations, and theories of credit rationing and credit availability—with the more traditional topics. This approach lends insights into both the modern advances and the traditional perspectives.
- I have gone further to integrate international considerations into the macroeconomic analysis. For instance, after I set forth the full-employment model in Chapter 6, I use it to explain international capital flows and the determination of exchange rates in Chapter 7. Then, in presenting the models of unemployment (Part Three) and the dynamics of adjustment (Part Four), international dimensions are carefully addressed, especially in relation to monetary theory and policy.
- In addition to the extensive integration of international concerns throughout the book, I have added a new chapter on international trade policy (Chapter 19), focusing on various trade practices, including commercial policy, "fair trade" laws, and the role of bilateral trade agreements such as the North American Free Trade Agreement (NAFTA) and the World Trade Organization (WTO).

I emphasize in this book that most economic tasks are beyond the scope of any one individual. This lesson certainly applies to the writing and revision of a textbook. In writing the First Edition, I benefited greatly from the reactions of my students in the introductory courses at Princeton and Stanford who class-tested early drafts. Their enthusiastic response to the manuscript provided much-needed boosts to motivate me at several critical stages. The reception of the First Edition showed that the venture was well worth the effort. Similarly, the revision has benefited from the experience of the thousands of students who have used the book and their teachers who offered invaluable feedback.

This edition, and the previous, have benefited from numerous reviewers. The book has been improved immeasurably by their advice—some of which, quite naturally, was conflicting. In particular, I would like to thank Robert T. Averitt, Smith College; Mohsen Bahmani-Oskooee, University of Wisconsin, Milwaukee; H. Scott Bierman, Carleton College; John Payne Bigelow. University of Missouri; Bruce R. Bolnick, Northeastern University; Adhip Chaudhuri, Georgetown University; Michael D. Curley, Kennesaw State College; John Devereux, University of Miami; K. K. Fung, Memphis State; Christopher Georges, Hamilton College; Ronald D. Gilbert, Texas Tech University; Robert E. Graf, Jr., United States Military Academy; Glenn W. Harrison, University of South Carolina; Marc Hayford, Loyola University; Yutaka Horiba, Tulane University; Charles Howe, University of Colorado; Sheng Cheng Hu, Purdue University; Glenn Hubbard, Columbia University; Allen C. Kelley, Duke University; Michael M. Knetter, Dartmouth College; Stefan Lutz, Purdue University; Mark J. Machina, University of California, San Diego; Burton G. Malkiel, Princeton University; Lawrence Martin, Michigan State University; Thomas Mayer, University of California, Davis; Craig J. McCann, University of South Carolina; Henry N. McCarl, University of Alabama, Birmingham; John McDermott, University of South Carolina; Marshall H. Medoff, University of California, Irvine; Peter Mieszkowski, Rice University; W. Douglas Morgan, University of California, Santa Barbara; John S. Murphy, Canisius College; William Nielson, Texas A&M University; Neil B. Niman, University of New Hampshire; David H. Papell, University of Houston; James E. Price, Syracuse University; Daniel M. G. Raff, Harvard Business School; Christina D. Romer, University of California, Berkeley; Richard Rosenberg, Pennsylvania State University; Christopher J. Ruhm, Boston University; Suzanne A. Scotchmer, University of California, Berkeley; Richard Selden, University of Virginia; Andrei Shleifer, Harvard University; John L. Solow, University of Iowa; George Spiva, University of Tennessee; Mark Sproul, University of California at Los Angeles; Frank P. Stafford, University of Michigan; Raghu Sundaram, University of Rochester; Hal R. Varian, University of Michigan; Franklin V. Walker, State University of New York at Albany; James M. Walker, Indiana University; Andrew Weiss, Boston University; Gilbert R. Yochum, Old Dominion University.

It is a pleasure also to acknowledge the help of a number of research assistants. Many of them went well beyond the assigned tasks of looking up, assembling, and graphing data to providing helpful criticism of the manuscript. These include Edwin Lai, now at Vanderbilt University; Chulsoo Kim, now at

Rutgers University; Alexander Dyck, now at Harvard University; Patricia Nabti and Andres Rodriguez, now at University of Chicago; Marcie Smith; and Kevin Woodruff. I am particularly indebted to John Williams, who supervised and coordinated the final stages of preparation of the manuscript for the First Edition, and who assisted me on the entire preparation of the second. But John did more than this: he has been a sounding board for new ideas, new organizational structures, and new expositions.

I have been indeed fortunate in both editions in enlisting the help of individuals who combined a deep understanding of economics with an editor's fine honed pen: Timothy Taylor in the first edition and Felicity Skidmore in the second. Both have remarkable editorial skills; both have long been committed to the notion that it is important that modern economic ideas be communicated widely and that they can be, in a way that is both enlightening and enjoyable. Timothy, John, and Felicity all gave their energy and creativity to the enterprise, and the book is immeasurably better as a result.

This is the second book I have published with Norton, a company that reflects many of the aspects of organizational design that I discuss in the text. This book would not be nearly the one it is without the care, attention, and most important, deep thought devoted to my work by so many there. A few deserve special mention. Donald Lamm, chairman of the board at Norton, managed not only to keep the incentives straight within his firm, but also found time to read early drafts of the First Edition at several critical stages and offered his usual insightful suggestions. I cannot sufficiently acknowledge my indebtedness to Drake McFeely, who served as my editor on the First Edition (and succeeded Don Lamm as president of Norton) and Ed Parsons, who served as my editor on the Second Edition. Both have been concerned about the ideas and their presentation, and both have been tough, but constructive, critics. The work of Kate Barry, the manuscript editor, was as energetic as it was cheerful. All four made my work harder, so that readers of this book would have an easier time. Several others at Norton also deserve mention: Rosanne Fox for her outstanding proofreading, Ashley Deeks and Claire Acher, for their work on the photographs, Antonina Krass for the splendid design of the book, and Roy Tedoff and Jane Carter for coordinating its production. Finally, Stephen King, Steve Hoge, and Linda Puckette have contributed their unique talents in the creation of innovative electronic ancillaries for the text.

I owe a special thanks to those who prepared the ancillary materials that accompany the text. Given the fact that this book represents a departure from the standard mold of the past, the tasks they faced were both more important and more difficult. Their enthusiasm, insight, and hard work have produced a set of truly superb ancillaries: Lawrence Martin of Michigan State University prepared the print Study Guide and oversaw its transformation into an electronic counterpart, Ward Hanson of Stanford has developed an on-line version of the Instructor's Manual, and Alan Harrison of McMaster University prepared the text bank for the Second Edition.

It is common practice at this point in the preface to thank one's spouse and children, who have had to sacrifice so much (presumably time that the author would otherwise have spent with them). My debt goes beyond these common-places. My wife and children have motivated me, partly by the thirst for eco-

nomic understanding they have evidenced by their questions about the rapidly changing economic scene, and partly by their challenging spirit—easy explanations, making heavy use of standard economics jargon, would not satisfy them. Moreover, in their perspective, the only justification for diverting my attention away from them and from my principal job as a teacher and researcher was the production of a textbook that would succeed in communicating the basic ideas of modern economics more effectively than those already available. I hope that what I—together with all of those who have helped me so much—have produced will please them.

OUTLINE FOR A SHORT COURSE

This book is suitable for short courses offered under a quarter system or other abbreviated schedules. Below I offer a provisional outline for such a short course, omitting several chapters. Naturally, to a large extent, *which* topics get omitted is a matter of taste. The following is my selection for a short course using fifteen chapters.

Chapter Number	Chapter Title
1	The Automobile and Economics
2	Basic Premises
3	The Price System
4	Macroeconomic Goals and Measures
5	Microfoundations
6	The Full-Employment Model
8	Overview of Unemployment Macroeconomics
9	Aggregate Demand
11	Money, Banking, and Credit
12	Monetary Theory
13	Fiscal and Monetary Policy
14	Inflation: Wage and Price Dynamics
16	Inflation vs. Unemployment: Approaches to Policy
17	Growth and Productivity
18	Deficits and Deficit Reduction

To Jane,

my harshest critic and best friend, from whom I have learned the strengths and limits of economics;

and to

Julia, Jed, Michael, and Siobhan in the hope, and belief, that a better understanding of economics will lead to a better world for them to inherit.



ABOUT THE AUTHOR:

nternationally recognized as one of the leading economists of his generation, Joseph Stiglitz has made important contributions to virtually all of the major subdisciplines of economics: macroeconomics, monetary economics, public and corporate finance, trade, development, and industrial organization. After teaching at Yale, Princeton, and

Oxford, in 1988 he accepted a position at Stanford University, where he has taught a wide variety of courses reflecting his broad interests, including Economics 1, one of the most popular courses on campus. In 1995, President Clinton asked him to serve as his chief economic adviser, appointing him Chairman of the Council of Economic Advisers and a member of the cabinet.

In early 1997, Joseph Stiglitz will become the chief economist at the World Bank. Professor Stiglitz is the author and editor of hundreds of scholarly articles and books, including the best-selling undergraduate text *Economics of the Public Sector* (Norton) and, with Anthony Atkinson, *Lectures in Public Economics*. He is founding editor of the *Journal of Economic Perspectives*, established in 1987 to lower the barriers of specialization erected by other major economic journals, and a former vice president of the American Economic Association. Among his many prizes and awards, Professor Stiglitz has received the American Economic Association's John Bates Clark Award, given to the economist under forty who has made the most significant contributions to economics. Joe Stiglitz lives in Washington, D.C. with his wife and four children.

$\mathcal C$ ontents in $\mathsf B$ rief

PART ONE INTRODUCTION

- 1 | THE AUTOMOBILE AND ECONOMICS 1
- 2 | BASIC PREMISES 27
- 3 | THE PRICE SYSTEM 61

PART TWO | FULL-EMPLOYMENT MACROECONOMICS

- 4 | MACROECONOMIC GOALS AND MEASURES 91
- 5 | MICROFOUNDATIONS 118
- 6 | THE FULL-EMPLOYMENT MODEL 150
- 7 | USING THE FULL-EMPLOYMENT MODEL 177

PART THREE | UNEMPLOYMENT MACROECONOMICS

- 8 | OVERVIEW OF UNEMPLOYMENT MACROECONOMICS 199
- 9 AGGREGATE DEMAND 222
- 10 | CONSUMPTION AND INVESTMENT 250

- 11 | MONEY, BANKING, AND CREDIT 277
- 12 | MONETARY THEORY 306
- 13 | FISCAL AND MONETARY POLICY 332

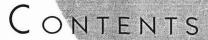
PART FOUR | DYNAMICS AND MACRO POLICY

- 14 | INFLATION: WAGE AND PRICE DYNAMICS 351
- 15 | UNEMPLOYMENT: UNDERSTANDING WAGE RIGIDITIES 381
- 16 | INFLATION VS. UNEMPLOYMENT: APPROACHES TO POLICY 403

PART FIVE | ISSUES IN MACROECONOMIC POLICY

- 17 | GROWTH AND PRODUCTIVITY 433
- 18 DEFICITS AND DEFICIT REDUCTION 463
- 19 | TRADE POLICY 484
- 20 | ALTERNATIVE ECONOMIC SYSTEMS 507
- 21 | DEVELOPMENT 531

GLOSSARY · A1



PREFACE

PART ONE

INTRODUCTION

CHAPTER THE AUTOMOBILE AND
ECONOMICS • 1

THE AUTOMOBILE: A BRIEF HISTORY • 2 CRISIS IN THE AMERICAN AUTOMOBILE
INDUSTRY • 4 CHRYSLER: GOVERNMENT TO THE RESCUE • 5 POLICY PERSPECTIVE: WHEN IS A
TRUCK A CAR? • 6 PROTECTION FROM FOREIGN COMPETITION • 7 THE REBIRTH OF THE
AMERICAN AUTOMOBILE INDUSTRY • 8 THE HISTORY OF THE AUTOMOBILE IN
STATISTICS • 8 WHAT IS ECONOMICS? • 9 MARKETS AND GOVERNMENT IN THE MIXED
ECONOMY • 12 MARKETS • 13 THE ROLE OF GOVERNMENT • 13 THE THREE MAJOR
MARKETS • 14 CLOSE-UP: A FAILED ALTERNATIVE TO THE MIXED ECONOMY • 15 TWO
CAVEATS • 17 MICROECONOMICS AND MACROECONOMICS: THE TWO BRANCHES OF
ECONOMICS • 17 THE SCIENCE OF ECONOMICS • 18 DISCOVERING AND INTERPRETING

RELATIONSHIPS • 19 CAUSATION VERSUS CORRELATION • 19 EXPERIMENTS IN

ECONOMICS • 20 WHY ECONOMISTS DISAGREE • 21 CLOSE-UP: ECONOMISTS AGREE! • 22

DISAGREEMENTS WITHIN POSITIVE ECONOMICS • 23 DISAGREEMENTS WITHIN NORMATIVE

ECONOMICS • 23 CONSENSUS ON THE IMPORTANCE OF SCARCITY • 24 REVIEW AND

PRACTICE • 24

CHAPTER BASIC PREMISES • 27

THE BASIC COMPETITIVE MODEL • 28 RATIONAL CONSUMERS AND PROFIT-MAXIMIZING FIRMS • 28 COMPETITIVE MARKETS • 29 PRICES, PROPERTY RIGHTS, AND PROFITS:
INCENTIVES AND INFORMATION • 30 INCENTIVES VERSUS EQUALITY • 32 CONSENSUS ON INCENTIVES • 32 RATIONING • 32 OPPORTUNITY SETS • 33 BUDGET AND TIME CONSTRAINTS • 34 THE PRODUCTION POSSIBILITIES CURVE • 36 COST • 39
OPPORTUNITY COSTS • 39 SUNK COSTS • 40 MARGINAL COSTS • 41 POLICY
PERSPECTIVE: POLICY AT THE MARGIN • 42 USING ECONOMICS: USING MARGINAL ANALYSIS TO SET SAFETY STANDARDS • 43 TRADE AND EXCHANGE • 43 "FEELING JILTED" IN TRADE • 44
ECONOMIC RELATIONS AS EXCHANGES • 45 TRADE BETWEEN COUNTRIES • 45
COMPARATIVE ADVANTAGE • 48 CLOSE-UP: THE COMPARATIVE ADVANTAGE OF THE UNITED STATES • 51 CONSENSUS ON THE BENEFITS OF TRADE • 52 REVIEW AND PRACTICE • 52
USING ECONOMICS: CALCULATING THE GAINS FROM TRADE • 53 APPENDIX: READING GRAPHS • 56

CHAPTER THE PRICE SYSTEM . 61

DEMAND • 62 THE INDIVIDUAL DEMAND CURVE • 63 THE MARKET DEMAND CURVE • 64
SHIFTS IN DEMAND CURVES • 66 SOURCES OF SHIFTS IN DEMAND CURVES • 67 SHIFTS IN
A DEMAND CURVE VERSUS MOVEMENTS ALONG A DEMAND CURVE • 68 SUPPLY • 69
MARKET SUPPLY • 71 SHIFTS IN SUPPLY CURVES • 72 SOURCES OF SHIFTS IN SUPPLY
CURVES • 72 SHIFTS IN A SUPPLY CURVE VERSUS MOVEMENTS ALONG A SUPPLY
CURVE • 74 LAW OF SUPPLY AND DEMAND • 74 CLOSE-UP: THE STRUCTURE OF ECONOMIC
MODELS • 76 USING DEMAND AND SUPPLY CURVES • 77 CONSENSUS ON THE
DETERMINATION OF PRICES • 77 QUANTIFYING THE EFFECTS OF PRICE CHANGES • 78
THE PRICE ELASTICITY OF DEMAND • 78 THE DETERMINANTS OF THE ELASTICITY OF
DEMAND • 80 THE PRICE ELASTICITY OF SUPPLY • 81 SHORTAGES AND SURPLUSES • 83
USING ECONOMICS: CALCULATING RESPONSES TO OIL PRICE CHANGES • 84 POLICY PERSPECTIVE:
THE 1996 FARM BILL • 85 REVIEW AND PRACTICE • 85

PART TWO

FULL-EMPLOYMENT MACROECONOMICS

CHAPTER AMACROECONOMIC GOALS
AND MEASURES • 91

THE THREE MACROECONOMIC ILLS • 92 GROWTH • 93 MEASURING OUTPUT • 94
POTENTIAL GDP • 95 MEASURING GDP: THE VALUE OF OUTPUT • 97 POLICY PERSPECTIVE:
A SLOWDOWN IN ECONOMIC GROWTH • 99 ALTERNATIVE MEASURES OF OUTPUT • 102
MEASURING THE STANDARD OF LIVING • 102 UNEMPLOYMENT • 103 THE MAGNITUDE OF
THE PROBLEM • 104 UNEMPLOYMENT STATISTICS • 104 PROBLEMS WITH THE
UNEMPLOYMENT STATISTICS • 106 FORMS OF UNEMPLOYMENT • 107 INFLATION • 108
MEASURING INFLATION • 108 THE AMERICAN EXPERIENCE WITH INFLATION • 109 THE
IMPORTANCE OF INFLATION • 110 USING ECONOMICS: CALCULATING THE CONSUMER PRICE
INDEX • 111 POLICY PERSPECTIVE: THE PRICE INDEX MAKES A DIFFERENCE! • 112 ALTERNATIVE
MEASURES OF INFLATION • 113 CONNECTING THE THREE MAJOR VARIABLES • 114
FLOWS AND STOCKS • 114 REVIEW AND PRACTICE • 114

CHAPTER MICROFOUNDATIONS • 118

HOUSEHOLDS IN THE BASIC COMPETITIVE MODEL • 119 THE HOUSEHOLD'S CONSUMPTION DECISION • 119 Using Economics: Income Elasticities • 120 THE Household's Saving Decision • 121 The Household's Labor Supply DECISION • 123 FIRMS IN THE BASIC COMPETITIVE MODEL • 123 THE FIRM'S SUPPLY DECISION • 124 THE FIRM'S DEMAND FOR LABOR AND CAPITAL • 126 MARKET EQUILIBRIUM IN THE BASIC COMPETITIVE MODEL • 128 THE LABOR MARKET • 128 THE PRODUCT MARKET • 128 THE CAPITAL MARKET • 128 GENERAL EQUILIBRIUM • 129 THE INTERRELATEDNESS OF MARKETS • 129 CIRCULAR FLOWS • 130 THE ROLE OF GOVERNMENT • 133 THE EFFICIENCY OF MARKETS • 134 LIMITATIONS OF THE BASIC COMPETITIVE MODEL • 135 IMPERFECTIONS OF COMPETITION • 135 IMPERFECT INFORMATION • 138 MISSING MARKETS • 139 CLOSE-UP: AUTOMOBILE BROKERS AND IMPERFECT INFORMATION • 140 TECHNOLOGICAL CHANGE • 141 EXTERNALITIES AND PUBLIC GOODS • 141 CLOSE-UP: IBM-FROM THE EDGE OF MONOPOLY TO THE EDGE OF COMPETITION • 142 ADJUSTMENTS • 142 INCOME DISTRIBUTION • 143 GOVERNMENT FAILURES • 143 THE BASIC MODEL COMPARED WITH THE REAL WORLD: A SUMMARY • 144 **REVIEW AND PRACTICE** • 147