

MACROECONOMICS

Michael Parkin



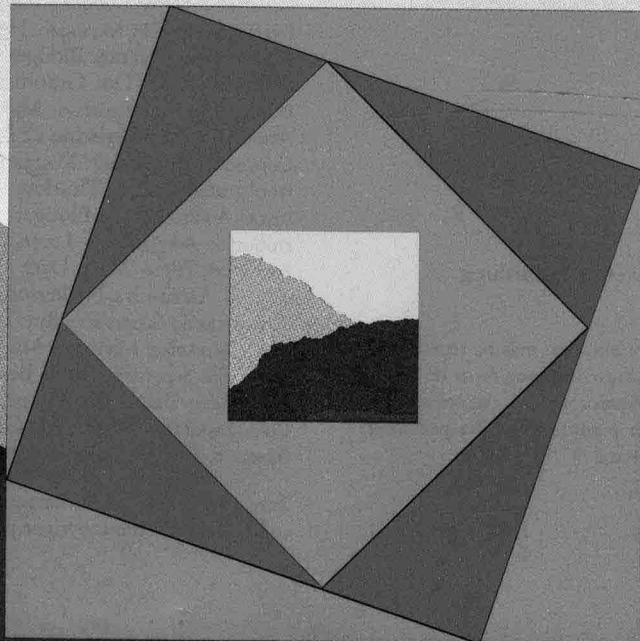
MACROECONOMICS

Michael Parkin

University of Western Ontario

Addison-Wesley Publishing Company

*Reading, Massachusetts • Menlo Park, California • New York
Don Mills, Ontario • Wokingham, England • Amsterdam
Bonn • Sydney • Singapore • Tokyo • Madrid • San Juan*



Library of Congress-in-Publication-Data

Parkin, Michael, 1939-
Macroeconomics / Michael Parkin
p. cm.
ISBN 0-201-09445-2
1. Macroeconomics. I. Title.

HB172.5.P36 1989

339—dc20

89-28035
CIP

Reprinted with corrections April, 1990.

Copyright © 1990 by Addison-Wesley Publishing
Company, Inc.

All rights reserved. No part of this publication may be reproduced,
stored in a retrieval system, or transmitted, in any form or by any
means, electronic, mechanical, photocopying, recording, or
otherwise, without the prior written permission of the publisher.
Printed in the United States of America.

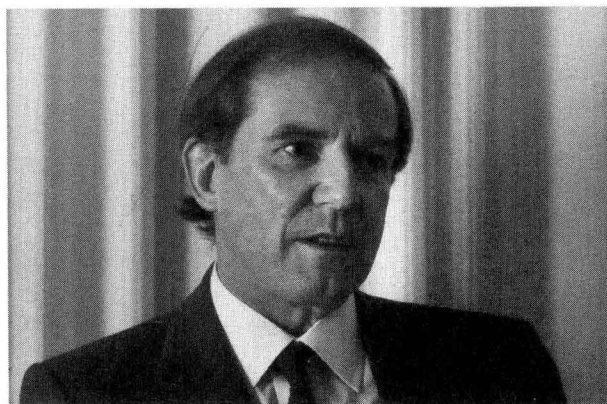
BCDEFGHIJ-DO-9543210

Senior Sponsoring Editor: **Barbara Rifkind**
Development Manager: **Sue Gleason**
Development Editors: **Janice Byer, Robert McGough**
Managing Editor: **Mary Clare McEwing**
Senior Production Supervisor: **Kazia Navas**
Art and Design Director: **Marshall Henrichs**
Cover and Interior Designer: **Karen Gourley-Lehman**
Production Services Manager: **Herb Nolan**
Art Supervisor: **Nancy Blodget**
Illustrators: **Black Dot Graphics, George Nichols**
Photographer for Interviews: **Marshall Henrichs**
Associate Editor: **Christine O'Brien**
Copyeditor: **Stephanie Magean**
Proofreader: **Cecilia Thurlow**
Layout Artists: **Nancy Blodget, Karen Gourley-Lehman**
Production Administrator: **Loren Stevens**
Permissions Editor: **Mary Dyer**
Indexer: **Alexandra Nickerson**
Manufacturing Supervisor: **Roy Logan**
Senior Marketing Manager: **Mac Mendelsohn**
Promotions Supervisor: **Julia Berkley**
Composer: **Black Dot Graphics**
Color Separator: **Black Dot Graphics**
Printer: **R.R. Donnelley & Sons**

Text and photo credits appear on p. I-10, which constitutes a
continuation of the copyright page.

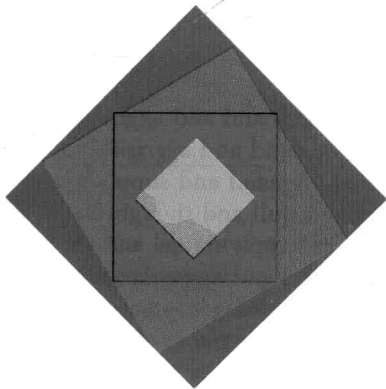
About Michael Parkin

Michael Parkin received his training as an economist at the Universities of Leicester and Essex in England. Currently in the Department of Economics at the University of Western Ontario, Canada, Professor Parkin has held faculty appointments at Brown University, the University of Manchester, and the University of Essex. He has served on the editorial boards of the *American Economic Review* and the *Journal of Monetary Economics* and as managing editor of the *Canadian Journal of Economics*. He is the author of *Macroeconomics* (Prentice-Hall). Professor Parkin's research on macroeconomics, monetary economics, and international economics has resulted in 160 publications in journals and edited volumes including the *American Economic Review*, the *Journal of Political Economy*, the *Review of Economic Studies*, the *Journal of Monetary Economics*, and the *Journal of Money, Credit and*



Banking. It became most visible to the public with his work on inflation that discredited the use of wage and price controls. Michael Parkin also spearheaded the movement toward European monetary union. Professor Parkin is an experienced and dedicated teacher of introductory economics.

Preface



To change the way students see the world: this is my goal in teaching economics and in writing this book.

Economics teaches students to use the economist's lens to view the world more clearly. At every point in the writing, development, and production of this book, I have tried to put myself in the student's place. I have repeatedly recalled my own early struggles to master this discipline, and I have drawn on the learning experiences of the several thousand principles students whom I have been privileged to teach over the past twenty-five years.

Three assumptions (or are they facts?) about students have been my guiding principles in determining the content, organization, features, and visual appearance of this book. First, students are eager to learn, but they are overwhelmed by the seemingly endless claims on their time, interests, and energy. As a result, they want to be told—and in a convincing way—just *why* they are being asked to study a particular body of material. They want to be motivated by a demonstration of its relevance to their everyday experience. Second, once motivated, students want to be presented with a thoughtful, clear, and logical explanation, so that they can understand and begin to apply what they have learned. They do not want to be handed loosely related facts and anecdotes. Third,

students are more interested in the present and future than in the past. They want to learn the economics of the 1980s so that, as they enter the 1990s and the twenty-first century, they will be equipped with the most up-to-date tools available to guide them.

Content and Organization

The core of the principles course has been around for more than one hundred years, and other important elements, especially parts of the theory of the firm and Keynesian macroeconomics, have been with us for more than fifty years. But economics has also been developing and changing rapidly during the past few decades. Although all principles texts pay some attention to these more recent developments, they have not succeeded in integrating the new and the traditional. They have created a patchwork quilt rather than a seamless web. I have worked hard to avoid this patchwork approach and to present new ideas in a new way, incorporating them into the body of timeless principles so as to weave a coherent pattern.

Among the many recent developments that you will find in this book are rational expectations, efficient markets, game theory, the principal-agent problem, public choice theory, aggregate demand and aggregate supply, and real business cycle theory. Yet the presence of modern topics does not translate into “high level.” Nor does it translate into “bias.” The presentation has been crafted to make recent developments in economics thoroughly accessible to the beginning student. Furthermore, where these modern theories are controversial, the more traditional models are also presented and the two (or more) approaches evaluated and compared. Thus, for example, in macroeconomics, all the alternative “schools”—Keynesian, monetarist, rational expectations, and real business cycle—are given an evenhanded treatment.

But this book does have a point of view. It is that economics is a serious, lively, and evolving science—a science that seeks to develop a body of theory powerful enough to explain the economic world around us and that pursues its task by building, testing, and rejecting economic models. In some areas the science has succeeded in its task, but in others it has some way to go and controversy persists. Where matters are settled, I present what we know in the clearest possible light; where controversy persists, I present the alternative viewpoints.

The existence of controversy has implications for the organization of the principles course. As a consequence, I have paid special attention to ensuring that this book can be used in a variety of ways.

Flexibility

Most fundamentally, there is disagreement about the best order in which to present microeconomics and macroeconomics. I have chosen to do microeconomics first, but the book has been written to accommodate courses that are sequenced in either order. The microeconomics and macroeconomics chapters do not depend on each other; concepts and terms are defined and ideas are developed independently in each of the two halves.

I have also tried to accommodate a wide range of teaching approaches by building flexibility and optionality into the book. In addition to the techniques mentioned below, there are several optional chapter sections, which are indicated with an asterisk (*) on the section title and in the table of contents. These may be omitted with no loss of continuity.

Macroeconomics In recognition of the diversity in approaches to teaching macroeconomics—and believing strongly that diversity is appropriate in unsettled parts of the discipline—I have paid special attention to writing these chapters so that they can be used in a variety of ways. I think that the most natural way to teach macroeconomics is that in which it is presented here. But several other sequences also work well.

I have long been puzzled by the way principles texts present the aggregate demand and aggregate supply model. *Aggregate* demand and *aggregate* supply analysis is harder than demand and supply analysis. Yet most books devote a full and thoughtful chapter to the demand and supply model and then present the aggregate demand and aggregate supply model in a scant few pages. I have recognized the inherently more difficult nature of the aggregate model and have tried to present an equally careful development of that model, which parallels the development of the microeconomic demand and supply model in Chapter 4. Chapter 24 on aggregate demand and aggregate supply serves as an overview of the rest of the macroeconomics material. Alternately, it can be read as a synthesis of the individual components of aggregate demand and aggregate supply, and can be studied after Chapter 30.

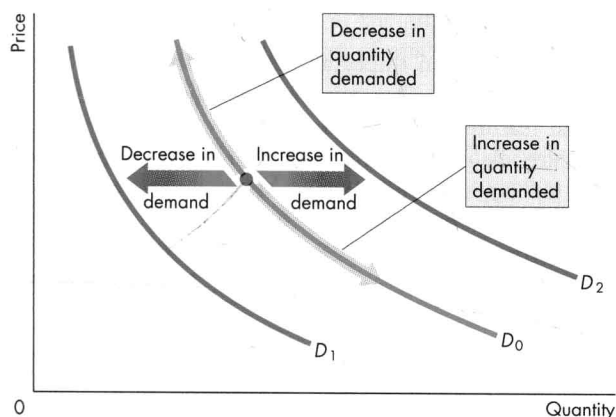
For those instructors who like to teach the *IS-LM* model, it is presented in an appendix, but one that is, I hope, more teachable than is commonly found.

Special Features

Art Program

One of the most important tools for economists is graphical analysis, yet this is often a real stumbling block for students. The development and art editors at Addison-Wesley and I kept this challenge always in mind as we developed the art program.

We began by observing a distinction between diagrams that represent models and those that display data. Model-based diagrams emphasize analysis and abstraction, whereas empirical graphs emphasize shapes, patterns, and visual correlations. It makes good pedagogical sense to differentiate these two kinds of figures in order to help students work with them better. As a signal to students, we set our



model-based diagrams on a white background, and the empirical graphs on a manila background.

Our goal in the model-based art (see the representative figure above) is to show clearly “where the economic action is.” To achieve this, we observe a consistent protocol in style, notation, and use of color, including

- Highlighting shifted curves, points of equilibrium, and the most important features in red.
- Using arrows in conjunction with color to lend directional movement to what are usually static presentations.
- Pairing graphs with data tables from which the curves have been plotted.
- Using color consistently to underscore the content, and referring to such color in the text and captions.
- Labeling key pieces of information in graphs with boxed notes.
- Rendering each piece electronically, so that precision is achieved.

The entire art program has been developed with the study and review needs of the student in mind. We have set up the following features, including:

- Marking the most important figures and tables with a red “key” and listing them at the end of the chapter as “Key Figures and Tables.”
- Using complete, informative captions that encapsulate major points in the graph so that students can preview or review the chapter by skimming through the art.

We undertook extensive tests of the quality of our art program. For example, we had two art re-

viewers evaluate every graph. Once a style had been developed, we also conducted informal discussions on the use of color and on the rendering technique. And since accuracy of illustrations and their in-text references is vital, we engaged five economists as accuracy reviewers of the manuscript and three of the galleys and page proofs to check words, numbers, and illustrations. These economists assisted the publisher’s in-house development editors and proofreaders, who checked every line, point, label, and cross-reference for clarity and accuracy.

The Interviews

An important goal of the principles course is to develop in students the ability to reason like economists. To aid this process, this book enables students to eavesdrop on a series of conversations that I conducted with twelve eminent economists who have changed the way we think about the world. These interviews open each of the book’s parts. It has been a great joy to learn something of how these economists view their area of specialization, of their unique contributions to economics, and also of their general insights which are relevant to beginning students.

Each interview has been carefully edited to be self-contained, and the necessary concepts and terms are defined informally within each one. Since each interview discusses topics that are introduced formally in the following chapters, students can use it as a preview to some of the issues they are about to encounter. A more careful reading afterwards will give students a fuller appreciation of the discussion. Finally, the whole series of interviews can be approached as an informal symposium on the subject matter of economics as it is practiced today.

Reading Between the Lines

Another common goal of the principles course is to develop the student’s ability to use economics to analyze current events reported in the media. Recognizing this need, I have developed a feature that may, I hope, be a fruitful model. Each “Reading Between the Lines” spread contains three passes at a story. It begins with a facsimile of an actual (sometimes abbreviated) newspaper or magazine article. It then presents a digest of the article’s essential points. Fi-


nally, it provides an economic analysis of the news story, based on the economic methods presented in that chapter. It is my intention that students, using this feature, will learn how to do more than just notice the relevance of economics to modern life. I hope that they will also develop the ability to ask good questions, to evaluate the quality of information presented in the media, and to use economic models to deepen their understanding of the economic world.

Our Advancing Knowledge

Another group of special essays reveals the birth and development of economic ideas, not just as abstract models, but as intimately tied to the people and circumstances that formed them.

Learning Aids

We have developed a careful pedagogical plan to ensure that this book complements and reinforces classroom learning. Each chapter contains the following pedagogical elements:

- **Objectives.** A list of chapter objectives that enables students to set their goals before embarking on a chapter.
- **Chapter openers.** Economic vignettes, questions, puzzles, or metaphors that motivate the analysis and that are resolved in the chapter.
- **Highlighted in-text reviews.** Succinct summaries at the end of many main sections.
- **Key terms.** Highlighted within the text, these concepts form the first part of a three-tiered review of economic vocabulary. These terms are repeated with page references at chapter ends and compiled in the end-of-book glossary.
- **Key figures and tables.** Identified with the “key” logo and listed at chapter ends. 
- **End-of-chapter study material.** Summaries organized around major headings; lists of key terms with page references; lists of key figures and tables with page references; review questions; and problems. We have worked hard to make the problems meaningful and useful for students.

Design

The design has an important place in the overall pedagogical plan. Our mission with the design of special features was to evoke the colorful feeling of nontextbook print media, notably magazines and annual reports, thus reinforcing the connection of economics to the real world. In the text itself, we strove for a scrupulously clear and honest look that would let the models being presented speak for themselves.

The Teaching and Learning Package

The authors of the supplements, Addison-Wesley, and I have put a tremendous amount of effort into ensuring that each component of the package will help students and instructors derive the maximum benefit from the textbook.

Chapter and Page Numbering System We have given great thought to the best way to enumerate the chapters and paginate the hardcover and split paperback versions of the book so that they work well with all the supplements. Our solution to the problem of confusing numbering systems for chapters in the hardcover and paperback versions was to renumber the pages of each paperback (beginning with page 1) but to keep the chapter numbers the same throughout the three books. This system permits the three books and all of the teaching and learning supplements to work together without confusion.

Study Guide Prepared by David Spencer of Brigham Young University, the Study Guide has been carefully coordinated with the main textbook. Each chapter contains: Chapter in Perspective; Learning Objectives; Helpful Hints; Self-Test (concepts review; true/false, multiple-choice, short-answer questions, and problems) and Answers to Self-Test; and Key Figures and Tables.

Economics in the News This supplement, prepared by Saul Pleeter and Philip Way of the University of Cincinnati, is a unique workbook that extends the “Reading Between the Lines” feature of the textbook. The book includes eighty-five recent news articles organized according to the topical outline of the textbook. An introductory paragraph, objectives, and

preview precede a facsimile of the article itself. After the article, two or more pages of analytical questions actively engage students.

Answers to Economics in the News This booklet provides answers to the problems in the supplement above and is available to instructors upon request from the Business and Economics Group at Addison-Wesley.

Test Item File Prepared by Patricia Euzent of the University of Central Florida and David Spencer of Brigham Young University, this file offers over 4000 multiple-choice questions. Each chapter includes a separate section of questions directly from the Study Guide and a section of questions that parallel those in the Study Guide.

Computerized Test Item File This software for qualified adopters is available for IBM-PC and compatible microcomputers and Macintosh microcomputers.

Instructor's Manual Prepared by Patricia Euzent of the University of Central Florida, the Instructor's Manual includes detailed chapter outlines and teaching suggestions, a list of acetates, answers to all review questions and problems in the textbook, and a flexibility guide prepared by Michael Parkin.

Acetates All of the text's key figures are rendered in full color on the acetates. There are 109 acetates for *Microeconomics* and 95 acetates for *Macroeconomics*, and are available to qualified adopters of the textbook by contacting Addison-Wesley.

Grapplecon II Software This software for IBM-PC and compatible microcomputers, prepared by Cols. James R. Golden and L. Donne Olvey of the United States Military Academy at West Point, are menu-driven interactive tutorial and quizzing programs that allow students to work with economic graphs.

Student Edition Software Full-function versions of leading software adapted for educational use are available from Addison-Wesley, including Student Edition Software for Lotus[®] 1-2-3[®], Second Edition, MathCAD[®] 2.0, and MINITAB[®].

Acknowledgments

One of the great pleasures of writing an introductory text is the opportunity it affords to learn from so many generous friends and colleagues. Although the extent of my debts cannot be fully acknowledged here, it is nevertheless a joy to record my gratitude to the many people who have helped, some without realizing just how helpful they were.

I want to thank those of my colleagues at the University of Western Ontario who have taught me a great deal that can be found in these pages: Jim Davies, Jeremy Greenwood, Ig Horstmann, Peter Howitt, Greg Huffman, David Laidler, Phil Reny, Chris Robinson, John Whalley, and Ron Wonnacott. I want to extend a special thanks to Glenn MacDonald, who worked well beyond the call of duty discussing this project with me from its outset, helping me develop many of its pedagogical features, and reading and commenting in detail on all the micro chapters.

I also want to acknowledge my debt to those who have had a profound influence on my whole view of and approach to economics and whose influence I can see in these pages. Although I never sat in their classrooms, they are in a very real sense my teachers. I am especially grateful to John Carlson (Purdue University), Carl Christ (Johns Hopkins University), Robert Clower (University of South Carolina), Ed Feige (University of Wisconsin at Madison), Herschel Grossman (Brown University), and Sam Wu (University of Iowa). I also want to place on record my enormous debt to the late Karl Brunner. The energy, drive, and entrepreneurship of this outstanding economist provided me and my generation of economists with incredible opportunities to interact and learn from each other in a wide variety of conference settings both in the United States and in Europe.

It is also a pleasure to acknowledge my debt to the several thousand students to whom I have been privileged to teach introductory economics. The instant feedback that comes from that look of puzzlement or enlightenment has taught me, more than anything else, how to teach economics.

Producing a text such as this is a team effort, and the members of the Addison-Wesley "Parkin Team" are genuine co-producers of this book. I am especially grateful to and have been truly inspired by

my sponsoring editor, Barbara Rifkind. Barbara discovered this book when it was no more than an idea in my mind, while she was working as an Addison-Wesley sales representative in Florida. After two promotions, she came onto the project when Addison-Wesley had already designed the book and when I thought I had finished writing it. Barbara liked what she saw, but saw more in its potential than in its realization. She coaxed me into rewriting the entire book one more time and coaxed Addison-Wesley into another complete overhaul of the design. Because of Barbara, this book is really the second edition of *Economics*! Sue Gleason as development editor has had an enormous influence on both the words and the art program. Sue and I have developed cauliflower ears as a result of working with each other on the telephone over the past two years. Kazia Navas, the production editor, has coordinated the entire production process, keeping us all on track and coping cheerfully with my numerous and sometimes outrageous demands. Great thanks go to Stephanie Magean, Sherry Berg, Nancy Blodget, Janice Byer, Marshall Henrichs, Mary Stuart Lang, Karen Lehman, Mary Clare McEwing, Dick Morton, Christine O'Brien, Loren Stevens, Christine Shuster, and the more than eighty economists (whose names appear separately) who have acted as reviewers or members of focus groups. It is a pleasure to acknowledge my debt to Steven Mautner, the Sponsoring Editor who initiated this project, and to Will Ethridge, who played an important role in the early stages of development. I also wish to express my gratitude to Bob McGough, a superb financial

and economic journalist, who provided a thorough and creative edit of my second draft and who also taught me a great deal about how to write more clearly and effectively. David Spencer, Patricia Euzent, Saul Pleeter, and Philip Way were the primary authors of the supplements package and graciously shared their professional insights and teaching expertise with me. I also want to thank the many secretaries who have helped at various stages of this book, typing and retyping its countless drafts and redrafts. They are Yvonne Adams, Lynda Sollazzo, Kendra McKague, and, most recently, Barbara Craig.

I have left until last four people to whom I want to give special thanks. First, my colleague and best friend Robin Bade has been almost a co-author of this work. She has read every word that I have written, commented in detail on every draft of the work, and has helped manage the project from its conception to its conclusion. Without the anticipation of her help and its availability, I could never have contemplated embarking on this project. Finally, I want to acknowledge the help and inspiration of my children, Catherine, Richard, and Ann. Through the years that I have been developing and writing this work, they have been going through various stages of high school and college. They have forced me to craft a book that they can understand and find interesting.

The empirical test of this textbook's value will be made in the classroom. I would appreciate hearing from instructors and students about how I might improve the book in future editions.

Michael Parkin

*Department of Economics
University of Western Ontario
London, Ontario N6A 5C2*

Reviewers

Manuscript Reviewers

Berhanu Abegaz

College of William and Mary

Lee J. Alston

University of Illinois

Ted Amato

University of North Carolina
at Charlotte

Richard K. Anderson

Texas A & M University

Mohsen Bahmani-Oskooee

University of Wisconsin—Milwaukee

Ian R. Bain

Minnegasco, Inc.

Peter S. Barth

University of Connecticut

Brian R. Binger

University of Arizona

Bruce R. Bolnick

Northeastern University

M. Neil Browne

Bowling Green State University

Clive Bull

Paine Webber

Michael R. Butler

Texas Christian University

Steven Caudill

Auburn University

Steven L. Cobb

University of North Texas

John D. Coupe

University of Maine

Paul N. Courant

University of Michigan

Larry DeBrock

University of Illinois

David Denslow

University of Florida

Donald Dutkowsky

Syracuse University

Nathan Edmonson

Georgia State University

Kenneth G. Elzinga

University of Virginia

Patricia J. Euzent

University of Central Florida

Roger E. A. Farmer

University of California
at Los Angeles

Kevin F. Forbes

Catholic University of America

Lynn G. Gillette

Texas A & M University

Edward Greenberg

Washington University

John Grobey

Humbolt State University

Timothy J. Gronberg

Texas A & M University

John R. Hanson II

Texas A & M University

Stephen Happel

Arizona State University

Elizabeth Hoffman

University of Arizona

Glenn Hueckel

Purdue University

Dennis W. Jansen

Texas A & M University

Bruce E. Kaufman

Georgia State University

Arjo Klamer

University of Iowa

Levis A. Kochin

University of Washington

Don N. MacDonald

Northeast Louisiana University

Michael Magura

University of Toledo

George J. Mailath

University of Pennsylvania

Steven J. Matusz

Michigan State University

Sam Mirmirani

Bryant College

W. Douglas Morgan

University of California,
Santa Barbara

Anthony L. Ostrosky

Illinois State University

Harold Petersen

Boston College

Frank Petrella

Holy Cross College

Thomas J. Pierce

California State University,
San Bernadino

Mark W. Plant

U.S. Department of Commerce

Andrew J. Policano

State University of New York at
Stony Brook

Robert Puth

University of New Hampshire

Krishnamurthy Ramagopal

University of Vermont

J. David Reed

Bowling Green State University

Robert Rosenman

Washington State University

Mark Rush

University of Florida

Allen R. Sanderson

The University of Chicago

Michael P. Shields

Southern Illinois University
at Carbondale

Ronald Soligo

Rice University

David E. Spencer

Brigham Young University

Robert W. Thomas

Iowa State University

Marie Thursby

Purdue University

Arthur L. Welsh

Pennsylvania State University

Walter J. Wessels

North Carolina State University

James N. Wetzel

Virginia Commonwealth University

Jeffrey Wolcowitz

Harvard University

William C. Wood

James Madison University

Gavin Wright

Stanford University

Peter A. Zaleski

Villanova University

Gary Zarkin

Research Triangle Institute

Art Reviewers

Donald Dutkowsky

Syracuse University

Willard W. Radell, Jr.

Indiana University of Pennsylvania

Accuracy Reviewers

Eugene Bland

National Education Center's
Tampa Technical Institute

Robert P. Edwards

County College of Morris (NJ)

Edward Monkman

County College of Morris (NJ)

David Spencer

Brigham Young University

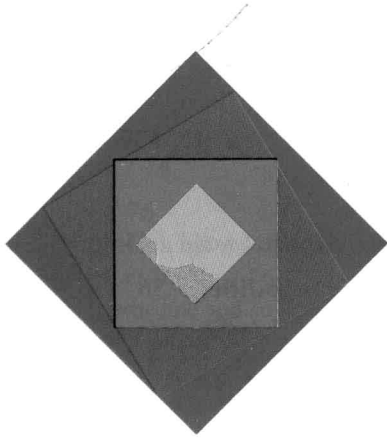
Jeffrey Wrase

Arizona State University

Brief Contents

- Part 1** Introduction 1
- Chapter 1 What Is Economics? 5
- Chapter 2 Making and Using Graphs 27
- Chapter 3 Production, Specialization, and Exchange 49
- Chapter 4 Demand and Supply 69
- Part 8** Introduction to Macroeconomics / 97
- Chapter 22 Inflation, Unemployment, Cycles, and Deficits / 101
- Chapter 23 Measuring Output and the Price Level / 124
- Chapter 24 Aggregate Demand and Aggregate Supply / 148
- Part 9** How the Macroeconomy Works / 175
- Chapter 25 Expenditure Decisions / 179
- Chapter 26 Expenditure and Income / 210
- Chapter 27 Money, Banking, and Prices / 237
- Chapter 28 The Federal Reserve, Money, and Interest Rates / 263
- Chapter 29 Aggregate Demand Fluctuations / 291
- Chapter 30 Unemployment and Aggregate Supply / 325
- Chapter 31 Expectations and Inflation / 352
- Chapter 32 Recessions and Depressions / 378
- Part 10** Macroeconomic Policy / 399
- Chapter 33 Stabilizing the Economy / 403
- Chapter 34 The Deficit / 426
- Part 11** International Economics / 449
- Chapter 35 Trading with the World / 453
- Chapter 36 The Balance of Payments and the Dollar / 478
- Part 12** Growth and Comparative Systems / 509
- Chapter 37 Growth and Development / 513
- Chapter 38 Comparing Economic Systems / 534

Contents



Chapter 1 *What Is Economics?* 5

Seven Big Questions / 6

- Production, consumption, and technological change / 6
- Wages and earnings / 7
- Unemployment / 7
- Inflation / 7
- Government / 7
- International trade / 8
- Wealth and poverty / 8
- Big questions with no easy answers / 8

Scarcity / 9

- Economic activity / 9
- Choice / 10
- Opportunity cost / 10
- Competition and cooperation / 10

The Economy / 11

- What is an economy? / 12
- The economy's working parts / 12
- Coordination mechanisms / 14
- Closed and open economies / 16

Economic Science / 17

- What is and what ought to be / 17
- Observation and measurement / 18
- Economic theory / 18
- Economic model / 18
- Microeconomic and macroeconomic models / 20
- Model, theory, and reality / 21

Our Advancing Knowledge

Adam Smith and the Birth of Economic Science / 22

Summary † / 24

Key Concepts / 25

Review Questions / 26

Problems / 26

†Summary, Key Concepts, Review Questions, and Problems appear at the end of each chapter.

Chapter 2 Making and Using Graphs 27*Three Kinds of Lies / 28***Graphing Data / 29**

Two-variable graphs / 29

Time-series graphs / 30

Scatter diagrams / 35

Graphs Used in Economic Models / 38

Things that go up and down together / 38

Things that move in opposite directions / 39

Things that have a maximum and a minimum / 39

Things that are independent / 40

The Slope of a Relationship / 41

The definition of slope / 41

Calculating slope / 41

Graphing Relationships Among More Than Two Variables / 44

Other things being equal / 44

Chapter 3 Production, Specialization, and Exchange 49*Making the Most of It / 50***The Production Possibility Frontier / 51**

A model economy / 51

On the frontier is best? / 52

Opportunity Cost / 53

The best alternative forgone / 53

Measuring opportunity cost / 54

Increasing opportunity cost / 54

The shape of the frontier / 55

Production possibilities in the real world / 55

Changing Production Possibilities / 56

The cost of shifting the frontier / 56

Capital accumulation and technological change / 56

The real world again / 57

Gains from Trade / 59

Comparative advantage: Jane meets Joe / 59

Reaping the gains from trade / 60

Absolute advantage / 61

Exchange in the Real World / 62

Property rights / 62

Money / 63

Reading Between the Lines*Overcoming Obstacles to the Gains from Trade / 64*

Chapter 4 Demand and Supply

69

*Slide, Rocket, and Roller Coaster / 70***Demand / 71**

What determines the quantity demanded? / 71

The law of demand / 71

Demand schedule and demand curve / 72

Willingness to pay / 72

A change in demand / 73

Movement along versus a shift in the demand curve / 74

Supply / 76

What determines the quantity supplied? / 76

The law of supply / 76

Supply schedule and supply curve / 76

Minimum supply price / 77

A change in supply / 77

Movement along versus a shift in the supply curve / 78

Price Determination / 80

Price as a regulator / 80

Equilibrium / 80

Predicting Changes in Price and Quantity**Traded / 82**

A change in demand / 83

A change in supply / 86

Changes in both supply and demand / 87

Walkmans, apartments, and coffee / 87

Our Advancing Knowledge*Discovering the Laws of Demand and Supply / 84***Reading Between the Lines***Demand and Supply in Action:**A Temporary Increase in Demand / 90***Reading Between the Lines***Demand and Supply in Action:**An Increase in Supply / 92***Chapter 22 Inflation, Unemployment, Cycles, and Deficits**

101

*Shopping Cart Blues / 102***Inflation / 103**

The inflation rate and the price level / 103

The recent inflation record / 104

Inflation and the value of money / 104

Is inflation a problem? / 105

The problem of unanticipated inflation / 105

The problem of anticipated inflation / 107

Indexing / 108

Unemployment / 108

What is unemployment? / 108

Measuring unemployment / 108

The unemployment record / 109

The benefits and costs of unemployment / 109

Gross National Product / 111

Nominal GNP and real GNP / 112

Real GNP—The record / 112

The importance of real GNP / 113

The Business Cycle / 115

Unemployment and the business cycle / 116

The stock market and the business cycle / 116

Inflation and the business cycle / 118

Government Deficit and International Deficit / 119

Government deficit / 119

International deficit / 120

Chapter 23 <i>Measuring Output and the Price Level</i>	124	Chapter 24 <i>Aggregate Demand and Aggregate Supply</i>	148
<i>Reading the Tea Leaves</i> / 125		<i>What Makes Our Garden Grow?</i> / 149	
The Circular Flow of Expenditure and Income / 126		Aggregate Demand / 150	
Circular flows in a model economy / 126		Why the aggregate demand curve slopes downward / 151	
Income and expenditure accounts / 130		Money and the real balance effect / 151	
U.S. National Income and Product Accounts / 131		Changes in aggregate demand / 153	
The expenditure approach / 131		Shifts of the aggregate demand curve / 156	
The factor incomes approach / 132		Aggregate Supply / 156	
The output approach / 134		Long-run aggregate supply / 157	
Measured and actual gross national product / 136		Short-run aggregate supply / 158	
The Price Level and Inflation / 137		Changes in both long-run and short-run aggregate supply / 160	
Consumer price index / 137		Changes in short-run aggregate supply / 161	
GNP deflator / 139		Shifts in the aggregate supply curves / 161	
Inflation and relative price changes / 141		Macroeconomic Equilibrium / 162	
The consumer price index and the cost of living / 142		Determination of real GNP and the price level / 162	
Reading Between the Lines		Macroeconomic equilibrium and full employment / 163	
<i>Consumer Prices in July Increased by a Modest 0.2%</i> / 144		The effects of a change in aggregate demand / 164	
		The effects of a change in short-run aggregate supply / 166	
		Trends and Cycles in the U.S. Economy / 167	
		The economy in 1988–89 / 167	
		Growth, inflation, and cycles / 170	
		Reading Between the Lines	
		<i>The Tightrope Between Inflation and Recession</i> / 168	

Chapter 25 Expenditure Decisions 179*Fear and Trembling in the Shopping Aisles* / 180**The Components of Aggregate****Expenditure** / 181

Relative importance of the components of aggregate expenditure / 181

Volatility of the components of aggregate expenditure / 181

Consumption Expenditure and Saving / 182

The consumption function and the saving function / 184

The average propensities to consume and to save / 185

The marginal propensities to consume and to save / 186

The U.S. consumption function / 188

Shifts in the consumption function / 189

The aggregate consumption function / 189

Investment / 191

What determines investment? / 191

Investment demand / 197

Accelerator principle / 197

Investment demand in the United States / 199

Net Exports / 201

Exports / 201

Imports / 202

Net export function / 203

Our Advancing Knowledge*Consumption and Saving* / 192**Appendix: Net Present Value and Investment** 207

Calculating Net Present Value / 207

Expected Inflation and Real Interest Rate / 208

Investment Demand / 209

Chapter 26 Expenditure and Income 210*Economic Amplifier or Shock Absorber?* / 211**Aggregate Expenditure and Real GNP** / 212

Aggregate expenditure schedule / 212

Aggregate expenditure curve / 213

Autonomous and induced expenditure / 214

Slope of the aggregate expenditure curve / 214

Equilibrium Expenditure / 215

When planned expenditure equals real GNP / 215

Convergence to equilibrium / 215

Fluctuations in Expenditure and in Real GNP / 217

A change in autonomous expenditure / 218

A change in the marginal propensity to spend / 218

The effects of a change in the marginal propensity to spend / 220

The paradox of thrift / 221

The Multiplier / 222

The multiplier and the marginal propensity to spend / 222

Why is the multiplier greater than 1? / 224

Fiscal policy multipliers / 226

The multiplier in recession and recovery / 228

Aggregate Expenditure and Aggregate Demand / 229

Aggregate planned expenditure and the price level / 229

Aggregate demand curve and autonomous expenditure / 231

Equilibrium GNP and the price level / 232