

# MICROECONOMICS

# Third Edition

## DAVID C. COLANDER

Middlebury College



Dedicated to the memory of Frank Knight and Thorstein Veblen, both of whose economics have significantly influenced the contents of this book.

## Irwin/McGraw-Hill

A Division of The McGraw-Hill Companies

Copyright © 1998 by The McGraw-Hill Companies, Inc. All rights reserved. Previous editions © 1994 and 1995 by Richard D. Irwin, a Times Mirror Higher Education Group, Inc. company. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a data base or retrieval system, without the prior written permission of the publisher.

This book is printed on acid-free paper.

23457890 VH/VH9098

ISBN 0-256-17273-0

Editorial director: Michael W. Junior

Publisher: Gary Burke

Senior developmental editor: Tom Tompson Developmental editor: Catherine Schwent Senior project manager: Denise Santor-Mitzit Senior production supervisor: Bob Lange

Art director: Keith McPherson

Photo research coordinator: Keri Johnson

Compositor: Shepard Poorman Communications Corp.

Typeface: 10/12 Times Roman Printer: Von Hoffmann Press, Inc

## Library of Congress Cataloging-in-Publication Data

```
Colander, David C.
```

http://www.mhhe.com

```
Microeconomics / David C. Colander.—3rd ed.
p. cm.
Includes index.
ISBN 0-256-17217-X.—ISBN 0-07-115226-1 (international ed.).—
ISBN 0-256-26614-X (Wall St. Journal ed.)
1. Microeconomics. I. Title.
HB172.C558 1997
338.5—dc21
```

## **Preface**

One of the first lessons of writing is: Know for whom you are writing. This book is written for students; this preface, however, is written for professors. Why? The answer is simple—the students for whom this book is written don't read prefaces; they don't read anything in a textbook unless it is assigned (and sometimes they don't read that). Their interests lie in the real world, not in texts. The style and structure of the body of this text is made to turn on such students, as much as they can be turned on, to economic ideas. Alas, I recognize that I will fail with many, but I sincerely believe that my success rate of actually getting students to read this textbook will likely be higher than will be the success rate for other economics textbooks written in standard professorial style.

I also recognize that students will never get a chance to read this text unless the professor chooses the book, which is why I write this preface for professors—they read prefaces. (If you're one of those rare students who read textbook prefaces, read on; it will give you a sense of what will be coming in the course.)

## Excerpts from Preface to the First Edition

Before I started writing this book I had done quite a bit of research on economics education. As part of that research, Arjo Klamer and I had surveyed and interviewed graduate students in a number of top graduate programs. Two of the most disturbing things we discovered were that economic institutions and economic literature were being given short shrift in graduate economics education. For example, in response to the question, "How important is a knowledge of economic literature to being successful as an economist?" only 10 percent of the students responded that it was very important, while 43 percent said it was unimportant. In response to the question, "How important to achieving success as an economist is having a thorough knowledge of the economy?" only 3 percent said it was very important, while 68 percent said it was unimportant.

I believe that the majority of the profession is concerned with these results. Certainly the students we interviewed were concerned. They said they believe that institutions and literature were very important. Their survey responses simply indicated their perception of how people succeed in the profession, not that the current situation was the way it should be. Almost all economists I know believe that students need to know economic literature and have a thorough knowledge of the institutions. Without the appropriate background knowledge of institutions and literature, all the technical skills in the world aren't going to provide one with the economic sensibility necessary to understand what's going on in the economy or to decide whether or not a model is relevant.

As I thought about these results and considered my own teaching, I realized that the problem was not only in graduate schools; it had filtered down to undergraduate texts. As I looked through the texts, I saw excellent discussions of technical issues and of models, but little discussion of economic sensibility. These books didn't even try to provide the intellectual context within which those models developed or the institutional context to which these models were to be applied. The standard texts had settled into teaching technique for the sake of technique and had shifted away from teaching economic sensibility.

I decided that if I were serious about playing a role in reinstituting economic sensibility and a knowledge of institutions and literature in economics education, I would have to write an introductory textbook that did that. I took it as a challenge. Meeting that challenge was what drove me to write this book; it is what kept me going when all my rational instincts told me it was too much time and too much work.

## Teaching Economic Sensibility

The question I faced was: How do you incorporate economic sensibility into a textbook? Economic sensibility is more than a knowledge of modeling techniques; it is a

mindset in which one's lens of the world is a latticework of ascending cost/benefit frameworks in which one is deciding on the optimal degree of rationality. Economic sensibility is an enforced reasonableness that provides insight into complicated issues; it is a perspective, not a technique. The argument I heard in favor of teaching technique was that economic sensibility could not be taught. I reject that argument. Economic sensibility may be hard to teach because it does not come naturally for most people, but it can and must be taught. The question is: How do you teach it? The answer I came to: Enthusiastically.

### Economics with Passion

I am first and foremost an economics teacher; I am excited by economics. I find economic ideas relevant, challenging, and exciting. In my lectures, I try to convey that excitement, and if the lecture is going right, I can feel the excitement in my students. Then off they go to read the text. All too often when they return to class, the fire in their eyes is gone; the textbook has lulled them into complacency. Those who know me know that I can put up with many things (not quietly, but nonetheless put up with), but one of those things isn't complacency. I want students to think, to argue, to challenge, to get passionate about the ideas. I encourage this reaction from students not just because economists' ideas deserved to be treated passionately, but also because, through a combination of passion and reason, eventually students achieve economic sensibility. I decided what was missing from most textbooks was the passion. I promised myself my book would retain the passion.

Now there's no way I'm going to get passionate about Slutsky equations, phase diagrams, indifference curves, or an AS/AD model. Mathematicians may get passionate about such things, I don't. I do get passionate about the insight economics gives one into the problems we, as individuals and as society, must face: the budget deficit, TANSTAAFL, the environment, and agricultural subsidies. If the techniques help in understanding the ideas, fine, but if they don't, goodbye to the techniques.

#### Passion without Bias

While not all textbooks are written by passionless people, the conventional wisdom is that authors should hide their passion to make their books more marketable. In some ways this makes sense—often passion and ideological bias go together. Many economists' passions are ideologically linked, and if you remove the ideology, you remove the passion. Good economic sensibility cannot be—and cannot even appear to be—biased; if passion is purged in maintaining neutrality, it is purged for a good cause.

But passion and ideological bias need not go together. I believe it is possible for a passionate textbook to be reasonably objective and unbiased. And I set out to

write a book that would be as unbiased as possible (but not more so) and to do so without masking my passion for economic ideas. Various techniques allow me to do this. For example, to keep the students interested in the ideas rather than focusing on technique, I present some ideas in a debate format with two passionate believers on both sides arguing the points. The debate format makes the arguments come alive; they are no longer technical issues that must be memorized; they are passionate ideas, and as the students get caught up in the debate, they think about the ideas much more deeply than they otherwise would.

### A Conversational Tone

To transmit that sense of passion to the students, I needed a writing style that allowed it to come through. Quite honestly, textbookese douses passion faster than a cold shower. So this book is not written in textbookese. It's written in conversational English—I'm talking to the students. When they read the book, they will know me; they may not like me the way my mother likes me, but they will know me.

The conversational tone is not a monotone; it ebbs and flows depending on the nature of the material. Sometimes, in the analytic parts, the style approaches text-bookese; the important technical aspects of economics require technical writing. When we hit those parts, I tell the students, and encourage them to stick with me. But, even here I try to provide intuitive explanations that students can relate to.

The use of conversational style has two effects. First, it eliminates the sense some students have that text-books provide the "truth." When the textbook author is a real person with peccadilloes and warts, the students won't accept what he or she says unless it makes sense to them. Approaching a textbook with a Missouri "show me" attitude stimulates true learning. Second, the conversational style keeps the students awake. If students' heads are nodding as they read a chapter, they're not learning. Now I know this book is not Catcher in the Rye; it's a textbook conveying sometimes complex ideas. But the excitement about economic ideas and the real world comes through.

The approach I take allows me to deal simply with complicated ideas. For example, in the book I discuss modern interpretations of Keynesian and Classical economics, real business cycles, strategic pricing, the theory of the second best, rent-seeking, Pareto optimality, and challenges to Pareto optimality. The conversational style conveys the essence of these complex topics to students in a nontechnical fashion without tying the students' brains up in technical tourniquets. The style allows me to relate the ideas to concrete examples rather than mathematical formulas, providing intuitive discussions of the ideas that capture the economic sensibility.

Preface vii

### Models in Historical and Institutional Context

Discussing only the minimum of techniques necessary for the students to understand the ideas allows me more leeway to get into, and discuss, institutional and historical issues as they relate to current policy. Models without context are meaningless, and thus you'll find more historical and institutional issues in this book than in other principles books. The book has numerous maps; the discussion conveys the sense that geography, history, and psychology are important, even though it touches on them only tangentially.

One of the ways in which this historical and institutional approach shows up is in the complete coverage of the changing nature of economic systems. Socialism is undergoing enormous changes, and students are interested in what is happening and why it is happening. Their questions cannot be answered with technical models, but they can be discussed informally in a historical context. And that's what this book does.

## The Invisible Forces

I've incorporated in the book a pedagogical device I've found useful where I want to include the social and political forces that affect reality. That device is to convey to students a picture of reality being controlled not only by the invisible hand, but also by the invisible foot (politics) and the invisible handshake (social and cultural forces). This *invisible forces* imagery lets me relate economists' abstract models to the real world; it allows me to discuss the real-world interface between economics, politics, and social forces. What makes this device effective is that students can picture these three invisible forces fighting each other to direct real-world events; that image allows them to put economic models into perspective.

## Some Prefatory Comments on the Third Edition

This third edition marks a substantial revision of the second. The changes include the usual revisions and updates, together with some reorganization and some reworking of previous material. The need to update statistics, discussion of institutions, and discussion of policy is obvious. Keeping up with the ongoing policy issues requires a rewrite here, a change in discussion there, a new statistic here, and a deletion there. Such changes occur in every chapter; they reflect my attempt to provide a book that has the latest information and the most updo-date discussion of policy possible. To allow students to keep the statistics up to date, I have placed much more reliance on data obtainable over the Internet. Thus, throughout the book, I have placed Internet addresses where the data can be updated by the student.

Let me give one example of these changes from microeconomics and one example from macroconomics. In micro, antitrust rules were changed since the last edition—in 1997, the Justice Department announced that it was going to take the likelihood of a merger lowering price into account when it rules on mergers. That information needed to be added. Also, the AT&T situation, which I had used as a case study, turned into an even more interesting case as the Baby Bells started to merge and compete with AT&T in both local and long distance telephone markets. These discussions, and many like them, were updated.

In macro, the nature of GDP statistics changed in 1996 when the government started separating out its capital expenditures from current expenditures. That change meant rewriting the entire discussion of the governmental component of GDP statistics. In macro policy, the big story was the continued slow, steady expansion of the economy through the middle of 1997. That expansion lowered unemployment below what almost every economist had predicted back in 1995, and in doing so, drove U.S. unemployment lower than economists had previously believed achievable without accelerating inflation (even as European unemployment remained high). This experience provoked a needed discussion within the profession about the stability of the natural rate of unemployment. To keep the text up-to-date, the macro policy discussion had to be modified to take this recent experience into account.

In macro policy, the pendulum swung even further away from debates about discretionary fiscal policy and toward debates about the appropriate monetary régime and issues of structural policy. To take these changes into account I added a new chapter on structural macro policy and reworked the monetary policy discussion to focus more on policy régimes than on specific policy actions.

A second set of changes occurred at the suggestions of the many helpful reviewers and users of the second edition. Before I began working on the third edition, the publisher collected a large number of reviews and suggestions about what was good and not so good in the second edition, and about how the book could be modified to better fit the diverse needs of the teachers who use it. These suggestions resulted in a number of changes.

#### Ancillaries

Many reviewers' suggestions concerned ancillaries. Most agreed that the book had the broadest, most interesting set of ancillaries of any principles book, but that the quality of some of them could be improved. I took this advice seriously and, in this edition, I took direct oversight of the print ancillaries. I asked Jenifer Gamber, who is also the managing editor of the *Eastern Economic Journal*, to become our drill sergeant, seeing to it that we all kept up and delivered high-quality material.

Together with Jenifer, I wrote the *Drill and Review Study Guide*, making it into what we believe is the most useful tool for students it can be. Doug Copeland

vili Preface

continued his excellent work on the *Student Workbook*, and Tom Adams carefully reworked the *Instructor's Manual* to make it more useful and to provide answers to the in-text questions. Jenifer and I developed the Annotated Instructor's Edition that shows how the ancillaries fit into teaching the book. And Patrick O'Neill added an *Instructor's Assistant* that provides problem sets, syllabi, and suggested tests—on disk and in print—to make professors' lives a little easier.

Reviewers also told us that, while the test bank was solid, it needed more diverse and more interesting questions. In revising the test bank we worked hard to incorporate such questions. In doing so we added over 3,000 new questions so that not only is the test bank the largest in the field, it is also the highest in quality. I'm also happy to say that the publisher has adopted a new test-generating program that is much easier to use and that allows users to download tests into standard word processing programs.

These revised print ancillaries, together with the innovative ancillaries of the last edition—the Honors Companion, the Classic Readings, the Wall Street Journal Case Studies in Micro, and the Experiments in Economics, make the third edition's printed ancillaries a complete learning package.

In addition to the print supplements, there have been improvements and additions to the electronic components of our package. For the student, we have revised the Interactive Visualization software created by Paul Estensen to accompany the second edition and we have added Excel problem sets written by Byron Brown at Michigan State University. For the instructor, we have added PowerPoint slide presentations and we will make available an Instructor's CD-ROM that contains the *Instructor's Manual*, the *Instructor's Assistant*, the computerized test banks, the PowerPoints, the Interactive Visualization software, and the Excel problem sets. This remarkable multimedia program will also allow instructors to create presentations from any of the materials on the CD-ROM or from additional material on disks.

I'm very proud of the ancillary package. I think you will find that its quality is high, its diversity enormous, and its usefulness exceptional. It makes the book a complete learning system.

Reviewers offered numerous suggestions about how to improve the text—how to make the book more teachable by a wider range of instructors. Many of these suggestions have been incorporated into this third edition. One central issue concerned length. Most reviewers were in agreement that the book was too long, and that all principles books are becoming too encyclopedic. But it quickly became evident that there was little agreement as to what constituted the core of the course. The reality

is that there are many ways to teach the introductory course, and that what are extra pages for one instructor is highly desired content for another.

Faced with this conclusion—cut, but cut what I want cut—I had to make some difficult decisions. In making those decisions I tried to find out what reviewers objected to about a full-coverage principles book. Was it length per se, or was it the difficulty such large books created about what should be covered? Some teachers felt required to cover everything in the book. In a 10-, 12-, or even 15-week semester, that is virtually impossible. In discussing this issue with reviewers what I found was that most felt that the biggest problem was not size, as long as that size did not increase the cost, but a lack of "guidance" as to which parts should be considered core and which parts were supplemental. They wanted a smaller core to teach.

Faced with this dual objective function—shorten, but include diverse topics, I decided upon what might be called the "appendix solution." I cut the core chapters significantly—by about 100 pages. But rather than totally eliminating the remaining material, I reworked it so that it would fit into appendixes. This somewhat large number of appendixes allows you to tailor your course to what you want it to be.

Let me give a specific example of how the appendix solution works. Many teachers liked the historical discussion of the evolution of economies in the second edition. Others felt they didn't have time to cover that much history, and that that history was not part of the core course. So I reworked the chapter for the third edition, put much of the history in an appendix, and integrated the core discussion with the discussion of production possibility curves in Chapter 1. Thus, a brief discussion of the evolution of systems is in the chapter, and a much longer discussion of economic systems is in the appendix for those who want it.

This appendix solution also allowed me to move a significant amount of mathematical, institutional, and historical material to appendixes, and even to add some analytic material. For example, appendixes covering the algebraic presentation of supply and demand, the algebraic presentation of monopoly, and isoquants and isocost analysis are newly included in this edition. As one reviewer noted, the book sets the standard for flexibility in textbooks.

There were also numerous changes made in the structure and organization of the text, so let me give you a list of those changes.

#### Introduction

Chapter 1: Economics and Economic Reasoning: Old Chapter 1 was shortened. Discussion of the production possibility curve was taken out and integrated with the chapter on evolution of economic systems, which was moved up to Chapter 2 to accommodate it.

Preface ix

Chapter 2: Economic Organization: Old Chapter 3 was combined with the Chapter 1 discussion of production possibility curve. Discussion of comparative advantage expanded. Core chapter shortened considerably with historical material moved to an appendix.

Chapters 3 and 4: Supply and Demand: Using Supply and Demand: Old Chapter 2, the central supply and demand chapter, divided into two chapters—one on the analytics of supply and demand and one on applications. This division allows a much earlier discussion of applications of the supply-demand model. Appendixes on algebraic solutions to supply and demand added.

Chapters 5 and 6: U.S. and World Economic Institutions: The cores of Old Chapters 4 and 5 shortened considerably, with much of the specific institutional discussion moved to appendixes.

### Marie

Chapter 7: Elasticities. Combination of parts of old Chapter 6 and 7 to consolidate discussion of elasticity. Reworked derivations to focus on arc elasticity in order to provide clarity and to follow up on the application of supply and demand material in Chapter 4.

Chapter 8: The Logic of Individual Choice: Old Chapter 6 minus discussion of elasticity.

Chapter 9: Production and Cost Analysis I: Old Chapter 7 revised and updated.

Chapter 10: Production and Cost Analysis II: Old Chapter 8 revised and updated. Addition of an appendix on isoquants and isocosts.

Chapter 11: Perfect Competition: Old Chapter 9 revised and updated.

Chapter 12: Monopoly: Old Chapter 10 revised and updated. Addition of an appendix of algebraic derivation of monopoly equilibrium.

Chapter 13: Monopolistic Competition, Oligopoly and Strategic Pricing: Old Chapter 11 revised.

Chapter 14: Competition in the Real World: Old Chapter 12 revised and updated.

Chapter 15: Politics and Economics: Old Chapter 18 revised and updated to account for new farm laws. It is moved up to allow earlier discussion of policy issues.

Chapter 16: Microeconomic Policy and Economic Reasoning: Old Chapter 19 shortened with case studies moved to appendices.

Chapter 17: The Role of Government: Old Chapter 17 revised and updated.

Chapter 18: Economics and the Environment: Old Chapter 20 revised and updated.

Chapter 19: Antitrust and Industrial Policies: Old Chapter 13 revised and updated. It was moved down and included in policy sections to give professors more flexibility in choosing which applications chapter they want to focus on.

Chapter 20: Who Gets What?: Old Chapter 16 revised and updated.

Chapter 21: Work and Labor Market: Old Chapter 14 revised and updated with technical discussion of marginal products moved to appendix.

Chapter 22: Nonwage and Asset Income: Old Chapter 15 revised and updated.

Chapter 23: International Trade Restrictions: Old Chapter 21 revised and updated with technical discussion of absolute and comparative advantage moved to appendix.

Chapter 24: Growth and Microeconomics of Developing Countries: Old Chapter 22 revised and updated.

Chapter 25: Socialist Economies in Transition: Old Chapter 23 revised and updated.

## A Change Not Made: My Collowna W.

One change not made in this edition, even though it put off some professors, is my colloquial writing style. It's pretty clear that my writing style (and my style in general) isn't professorial. I agree; it isn't. But in my view, students would learn a lot more if professors were a lot less professorial. If students see us as people, they will be encouraged to think through what we have to say, and to challenge us when they think we're wrong. That's the purpose of education-to get students to think. True, it would be nice if students had a love of learning and were thirsting for knowledge. Unfortunately, the reality is that 99 percent of them don't. It's our job as teachers to make learning fun and exciting for students who don't want to learn, and either get them to learn, or to flunk them out. Being less professorial makes us more real to students and makes learning more fun.

I see the course and the book as an entry point to an enormous store of information, not as the ultimate source. I want to motivate students to learn on their own, to read on their own, to think on their own. These desires have to be taught, and they can only be taught in a language that students can relate to. I believe in going in steps with students, not in leaps. The traditional textbookese is too much a leap for most students to make. It's not a step from the stuff they normally read; it's a leap that most of them aren't willing to make-the same type of leap it is for most of us teachers of economics to read the Journal of Economic Theory. There may be some relevant information in those articles, but most of us teachers aren't going to find out because the language the ideas are presented in is incomprehensible to us. So too with a text; it has to talk to students, otherwise they

Preface ĸ

don't read it. I'm pleased to say that students have uniformly related to my style, even if they think my jokes are sometimes corny.

## People to Thank

A book this size is not the work of a single person, despite the fact that only one is listed as author. So many people have contributed so much to this book that it is hard to know where to begin thanking them. But I must begin somewhere, so let me begin by thanking the innumerable referees of three editions who went through the various versions of the text and kept me on track:

Jack Adams University of Arkansas

Stan Antoniotti Bridgewater State College

Mahmoud P. Arya Edison Community College

James Q. Aylsworth Lakeland Community College

George Bohler University of North Florida

Bijit K. Bora Carleton College

Gerald E. Breger Grand Rapids Junior College

Mario Cantu Northern Virginia Community College

Tom Carroll Central Oregon Community College

Carol A. M. Clark Guilford College

Roy Cohn Illinois State University

Eleanor Craig University of Delaware

Jerry L. Crawford Arkansas State University

Ed Dennis Franklin Pierce College

Phillip Droke Highline Community College

Fred Englander Fairleigh Dickinson University

Valerie Englander St. John's University

Sharon Erenberg Eastern Michigan University

Rhona C. Free Eastern Connecticut State University

Joseph Garwood Valencia Community College

Bernard Gauci Hollins College

Robert Gentennar Hope College

Jack B. Goddard Northeastern State University

Deniek Gondwee Gettysburg College

Richard Hansen Southeast Missouri State University

Raymond N. Harvey Niagara County Community College

Robert Jantzen Iona College

Walter Johnson University of Missouri

Diane E. Kraas Augustana College

Leonard Lardaro University of Rhode Island

Randall Lutter State University of New York at Buffalo

Raymond Mack Community College of Allegheny County Boyce Campus

**Drew Mattson** Anoka-Ramsey Community College

Bruce McCrea Lansing Community College

H. Neal McKenzie Dalton College

Debbie A. Meyer Brookdale Community College

Craig Milnor Clarke College

William Morgan University of Wyoming

Mark Morlock California State University- Illinois Benedictine College Chico

H. Richard Moss Ricks College

Theodore Muzio St. Vincent College

Hillar Neumann, Jr. Northern State University

Maureen O'Brien University of Minnesota-Duluth

Amar Pari State University of New York College at Fredonia

E. Dale Peterson Late of Mankato State University

Richard Rosenberg University of Wisconsin Linda Schaeffer California State University-Fresno

Ted Scheinman Mt. Hood Community College

Timothy Schibik University of Southern Indiana

Dorothy Siden Salem State College

R. J. Sidwell Eastern Illinois University

G. Anthony Spira University of Tennessee

Mitch Stengel University of Michigan-Dearborn

Robert Stonebreaker Indiana University of Pennsylvania

Frank Taylor McLennan Community College

Wade Thomas State University of New York College at Oneonta

Joe Turek

Alejandro Velez St. Mary's University

David Weinberg Xavier University

Kenneth Woodward Saddleback College

Second Edition

Fatma Antar Manchester Community College

John Atkins Pensacola Junior College

Bruce Barnett Grossmont College

Peter S. Barth University of Connecticut

Preface xi

James Watson David W. Findlay William W. Boorman Diana L. McCoy Colby College Truckee Meadows Jefferson College Palm Beach Community Community College College Mary Gade Edgar W. Wood Oklahoma State University Shah M. Mehrabi University of Mississippi Ginny Brannon Arapahoe Community Montgomery College John W. Graham College Third Edition Dennis D. Miller Rutgers University Baldwin Wallace College H. L. Brockman Thomas J. Adams Mark E. Haggerty Central Piedmont Sacramento City College James E. Needham Clarion University of Community College Cuyahoga Community Pennsylvania Diann Benesh College Chris Clark University of Wisconsin-David R. Hakes **BCIT** Eau Claire Tim Payne University of Northern Iowa Shoreline Community Eleanor D. Craig David Berrian George E. Hoffer College University of Delaware Shoreline Community Virginia Commonwealth Harmanna Poen College University Douglas Copeland Houston Community Johnson County David Black Alexander Holmes College Community College University of Toledo University of Oklahoma Edward R. Raupp Norman V. Cure Geoffrey Black Scott Hunt Augsburg College Macomb Community Marist College Columbus State Community College Donald Reddick College (Ohio) Michael D. Brasselero Kwantlen College James W. Eden Philip A. Klein Front Range Community Portland Community Mitchell Redlo The Pennsylvania State College (Colorado) College Monroe Community University Kathleen K. Bromley College John P. Farrell Morris Knapp Monroe Community Oregon State University Balbir S. Sahni Miami-Dade Community College (Rochester) Concordia University College Peter Fortura Sidney L. Carroll Algonquin College **Dennis Shannon** Penny Kugler University of Tennessee-Belleville Area College Central Missouri State Knoxville Ann J. Fraedrich University Marquette University Amrick Singh Dua Marc C. Chopin Mt. San Antonio College Randy LaHote Louis Green Louisiana Tech University Washtenaw Community John D. Snead San Diego State University Curtis Clarke College (Michigan) Bluefield State College John B. Hall Mountain View College Jodey Lingg John Somers Portland State University (Texas) City University of Renton Portland Community Paul A. Heise John Costley (Washington) College Lebanon Valley College Iowa Wesleyan College Robert T. McLean Annie Spears Joseph A. Ilacqua James Craven Harrisburg Area University of Prince Bryant College Clark College (Washington) Community College Edward Island Susan Kamp Lisa C. DeFelice Jon R. Miller Delores W. Steinhauser University of Alberta University of Idaho University of New Brookdale Community Hampshire-Durham College R. E. Kingery Reynold Nesiba Augustana College Hawkeye Community James Eden John Stoudenmire College (North Dakota) Portland Community Methodist College College Robert Kirk Norman P. Obst Deborah L. Thorsen Indiana University/Purdue Michigan State University Palm Beach Community James P. Egan University Indianapolis College

University of Wisconsin-

Eau Claire

David N. Feglio

University of Oregon

**Evanthis Mavrokordatos** 

Tarrant County Junior

College, N.E.

Marion Walsh

College

Lansing Community

Albert Okunade

Patrick O'Neill

University of Memphis

University of North Dakota

xii Preface

Dan Powroznik
Chesapeake College

Leila J. Pratt University of Tennessee– Chattanooga

Renee Prim
Gonzaga University

James J. Rakowski University of Notre Dame

George D. Santopietro Radford University (Virginia) Jacob Sonny

Dowling College (New York)

Susan Snyder Virginia Polytechnic Institute

Ken Woodward Saddleback College (California)

I cannot thank these reviewers enough. They corrected many of my stupid mistakes, they explained to me how a text can contribute to good teaching, and they kept me focused on combining teaching economic sensibility with economic models. They provided me with page upon page of detailed comments and suggestions for improvement. The book strongly reflects their input and is much more usable because of that input.

The formal reviewers are only a small portion of the total reviewers. There were many faculty and students who have informally pointed out aspects of the book that they liked, or did not like. There are so many that I can't remember, and don't have room to list, them all, but I hope by listing a few of them I can give you a sense of the importance of these informal reviewers. Some of these individuals (who happen to come to mind at the moment) are:

Roger Adkins, Zahiruddin Alim, John Atkins, Anis Bahreinian, Jim Barbour, Robin Bartlett, Roger Beck, John Bethune, Paula Bracy, Allen Bradley, Jim Bryan, Scott Callan, Tom Cate, Kristine Chase, John Conant, John Cornwall, Richard Cornwall, James Craven, Robert Crofts, Mahmoud Davoudi, Roger Dimick, Rohini Divecha, Jim Esen, Susan Feiner, Ann Fender, Windsor Fields, Richard Fryman, Art Gibb, Derrick Gondwe, Leland Gustafson, John H. Hoag, Janet Harris, Ric Holt, Dave Horlacher, Jim Hubert, Jim Kelsey, Rose Kilburn, Alfred Konuwa, Roger Koppl, Chris Kuehl, Harry Landreth, June Lapidus, Robert Liebman, Peyton Lingle, Lew Marler, Peter Matthews, Tom Mayer, Susan McGowan, Pat McMahon, Wendy Morrison, Frank Mossadeghi, Joy Newcomb, Michael Paganelli, Tom Porebski, Abdul Qayum, Mary Jean Rivers, James R. Scheib, Sunder Rameswamy, John Ranlett, Nancy Roberts, Sam Rosenberg, Barkley Rosser, Ted Scheinman, Peter Sephton, Scott Sewell, Ben Slay, James Smith, Noel Smith, Paul Sommers, Howard Stein, Terry Stokes, Kit Taylor, James Thomas, Roger Traver, Lisa Tuttle, S. V. Char, David Wagenblast, Kristi Weir, Geraldine Welch, Bruce Welz, Paul Wonnacott, Phani Wunnava, Peter Wyman. There are many more.

Often their helpful comments were in the form of questions, and in trying to answer them it became clear that the problem was a reflection of my failure of exposition, not in their understanding. I thank all these individuals (and apologize to the many, many unlisted ones).

I am happy to say that my group of friends throughout the profession is expanding. One of the pleasant aspects of the book is that it led to a large number of invitations to speak throughout the country. At those talks, I met some wonderful economics educators. These talks played a role in the development of an informal group of economics educators who are concerned about the way economics is taught. Together, we've been putting some pressure on the economics establishment to pay more time to teaching and to concern itself more with content teaching issues. The petition we organized (published with all our signatures in the AER) of almost 500 undergraduate professors of economics committed to changing the way economics is taught in graduate school made an impact, as did the positive reception given to earlier editions of this text. The graduate schools know economists committed to quality undergraduate teaching-which includes conveying a sense of history and institutions-are out there. Eventually, I think we will begin to see some change in the profession-not large change, mind you—institutions don't allow large, sudden change, but positive, glacial changes in the right direction. My sincere thanks to all who have helped in this effort.

## Massaging the Manuscript into a Book

Once the manuscript takes its final form there are still an almost infinite number of jobs to be done on it. Figures must be checked, arguments checked, drafts read, reread, and reread once again. In this third edition, I had immense help in these undertakings from Jenifer Gamber, who is a superbly trained economist and a great organizer. She found last minute data and saw to it that the answers to all the questions were reasonable.

Another person who helped is Umar Serajuddin. Umar worked for me in the year following his graduation from Middlebury; he played an important role in seeing to it that the arguments in the book didn't get confused. He has now gone on to graduate school and I am sure that he will do well. Other students who helped in various tasks include Aaron Coburn, Senake Gajameragedara, and Munir Qazi Alam. Then, of course, there are all the students in my classes who gave many helpful suggestions. I thank them all.

In developing this book many people at Irwin/McGraw-Hill were extremely important and helpful. One is Wendy Hagel, a sales rep who convinced me that Irwin/McGraw-Hill was the right publisher for me. Other individuals who were instrumental in various editions include Scot Stratford, Gary Nelson, and Catherine Schwent. I thank them and wish them well.

Preface xiii

The preparation of this edition was punctuated by a merger of Irwin with McGraw-Hill. Such mergers are always traumatic, and would have been more so were it not for the professionalism and knowledge of Gary Burke, my publisher, and Tom Thompson, my developmental editor. Gary is an old friend from way back—he published my first book—and Tom is superb in all that he does. Tom is organized; he has a sense of humor, and maintains a level head when confusion reigns. I'm delighted to be working with both of them and hope that it will be a long and fruitful relationship. I thank them both.

I would also like to thank upper-level management at Irwin/McGraw-Hill—specifically Mike Junior, John Black, and Jeff Sund. I had less contact with them, but I fully recognize their guiding hands. Their belief in the project made it possible for an antibureaucratic author to fit in with a formal publishing institution.

The actual production process of a four-color introductory book is complicated. It requires enormous efforts. Luckily, I had Denise Santor-Mitzit, senior project manager, directing the manuscript through the process. She did a superb job, as did all the players in the production process: Tom Serb, the copy editor; Laurie Entriger, the designer who made the book look good; Jon Christopher, the production supervisor, who worked with Shepard Poorman, the typesetter, and Von Hoffmann Press, the printer.

Of course, as they did their superb job, they created more work for me, reading the galley proofs, the page proofs, and doing all the final checking that must be done in an effort to eliminate those pesky errors that occur out of nowhere. Jenifer Gamber, James Craven, and Helen Reiff went over the manuscript with their fine-tooth combs and discerning eyes, and I went over it with my rake and 20-400 vision, and together we caught things overlooked until then. Finally, Paul Sommers went over the manuscript with his 20-10 vision, catching numerous mistakes the rest of us had missed. I thank them enormously for doing what I cannot do, and apologize to them for complaining that they are so picky.

After you have what you believe is a good book, the process still isn't done. You still have to get people to look at it. David Littlehale quickly got a sense of what I was trying to do with the book and captured the essence of it when he explained that I was being "aggressively neutral." I thank him. Nelson Black oversaw the marketing effort on this third edition.

Then, there are the sales reps who are the core of a textbook publishing company. As I traveled around the country giving lectures, I met with many of the Irwin/McGraw-Hill sales reps, discussing the book and learning to see it through their eyes. There are a number I remember very well; they sent me books and comments, and talked with me for hours about publishing and Irwin/McGraw-Hill. Since our talks were often honest, blunt, and off the record, I won't mention them, but I will thank them sincerely. Irwin/McGraw-Hill has a great set

of sales representatives out there, and I thank them for getting behind the book.

## Creating the Package

These days an introductory economics book is much more than a single book; it is an entire package, and numerous people have worked on the package. Jenifer Gamber took charge of developing these ancillaries and has done a stupendous job. She is totally organized, driven, caring, and a superb economist. I've enjoyed working with her immensely, and suspect we'll be working together for a long time.

The supplements authors were as follows: Jenifer Gamber, supplements coordinator:

Jenifer Gamber, supplements coordinator for all the print ancillaries, coauthor of the Study Guide, the Case Studies, and the Test Banks (with David Colander), and author of the Economics Fax Newsletter.

Tom Adams, Instructor's Manual
Patrick O'Neill, Instructor's Assistant
Douglas Copeland, Student Workbook
Gerald Nelson, Discover Econ Software
Anthony Zambelli, PowerPoint Presentations
Paul Estenson, Micro/Macroeconomics
Visualization Software

Andreas Ortmann and Dave Colander, Experiments in Teaching and Understanding Economics

Harry Landreth and Dave Colander, Classic Readings in Economics

Sunder Ramaswamy, Kailash Khandke, Jenifer Gamber, and Dave Colander, Honors Companion

There are stories to go with each of these authors—and enormous thanks to be given to them all, but the publisher has told me this preface must be short, so I will simply say thank you to all the supplements authors for making a high-quality and innovative supplements package to the text.

Finally, there's the group of people who helped me at every stage of the process. My colleagues at Middlebury and the Middlebury administration were supportive throughout the project. Helen Reiff and Jenifer Gamber helped in a variety of ways that went beyond their other duties.

Then, there's my wife, Pat. She made it possible for me to put enormous effort into economics while still feeling that our family remained a family. My love and admiration for her remain as unbounded as ever.

As you can see, although my name is on the book, many people besides me deserve the credit. I thank them all.

## About the Author

David Colander is the Christian A. Johnson Distinguished Professor of Economics at Middlebury College. He has authored, coauthored, or edited 23 books and over 70 articles on a wide range of economic topics.

He earned his B.A. at Columbia College and his M.Phil and Ph.D. at Columbia University. He also studied at the University of Birmingham in England and at Wilhelmsburg Gymnasium in Germany. Professor Colander has taught at Columbia College, Vassar College, and the University of Miami, as well as having been a consultant to Time-Life Films, a consultant to Congress, a Brookings Policy Fellow, and Visiting Scholar at Nuffield College, Oxford. Recently, he spent two months in Bulgaria, where he worked with former professors of political economy on how to teach Western economics.

He belongs to a variety of professional associations and has served on the Board of Directors and as vice president and president of both the History of Economic Thought Society and the Eastern Economics Association. He has also served on the Editorial Boards of the Journal of Economic Perspectives, The Journal of Economic Methodology, The Journal of the History of Economic Thought, and The Eastern Economics Journal.

He is married to a pediatrician, Patrice, which is fortunate, since they have a family of five boys. In their spare time, the Colanders have designed and built their oak post-and-beam house on a ridge overlooking the Green Mountains to the east and the Adirondacks to the west. The house is located on the site of a former drive-in movie theater. (They replaced the speaker poles with fruit trees and used the I-beams from the screen as support for the second story of the carriage house and the garage. Dave's office and library are in the former projection room.)

## **Brief Contents**

8

	PART	8	The Logic of Individual Choice: The Foundation of Supply and Demand 184	
1	Thinking Like an Economist  Economics and Economic Reasoning 5		Appendix A: Indifference Curve Analysis 199	
2	Appendix A: Economics in Perspective 23 Appendix B: Graphish: The Language of Graphs 24 The Economic Organization of Society 31	9	Production and Cost Analysis I 205 Production and Cost Analysis II 220 Appendix A: Isocost/Isoquant Analysis 236	
3	Appendix A: The History of Economic Systems 52 Supply and Demand 59 Appendix A: Algebraic Representation of	11	Competition, Monopoly, and Market Structure Perfect Competition 240	
4	Demand, Supply, and Equilibrium 81  Using Supply and Demand 84  Appendix A: Algebraic Representation of Interferences with Supply and Demand 103	12 13	Monopoly 264  Appendix A: The Algebra of Competitive and Monopolistic Firms 282  Monopolistic Competition, Oligopoly, and	
5	U.S. Economic Institutions 105  Appendix A: A Deeper Look at  Business 122  Appendix B: Households, Culture and	14	Strategic Pricing 284  Appendix A: A Case Study 305  Competition in the Real World 307	
6	Ideology 126  An Introduction to the World Economy 129  Appendix A: Our International  Competitors 147		Appendix A: Economic Reasoning and the Real World: The Example of the Health Care Debate 321	
	-		Thinking Like an Economist: Microeconomic Policy Debates	
	PART	15	Politics and Economics: The Case of Agricultural Markets 327	
7	Microeconomics  1  Microeconomic Concepts: The Basics  Describing Supply and Demand: Elasticities  157	16	Appendix A: The History of U.S. Government Farm Programs 341  Microeconomic Policy and Economic Reasoning 345	

xvi Brief Contents

17	The Role of Government in the Economy 356	21	Work and the Labor Market 442
	Appendix A: Additional Case Studies on the Role of Government 373	22	Appendix A: Derived Demand 462
18	Economics and the Environment 377	22	Nonwage and Asset Income: Rents, Profits, and Interest 468
19	Antitrust and Industrial Policies 395		
			V
20	IV Distribution and Factor Markets Who Gets What? The Distribution of Income 417 Appendix A: A Numerical Example of the Problems of Redistributing Income 436 Appendix B: Real-World Policies and Programs to Redistribute Income 437	23	International Dimensions of Microeconomics
			International Trade Restrictions 481
			Appendix A: The Geometry of Absolute Advantage and Comparative Advantage 499
		24	Growth and the Microeconomics of Developing Countries 504
		25	Socialist Economies in Transition 520

# Contents

PART	Problems and Exercises 21
Thinking Like an Economist	Answers to Margin Questions 22 Appendix A: Economics in Perspective 23 Appendix B: Graphish: The Language of
Economics and Economic Reasoning 5	Graphs 24 REMINDER: Inverse and Direct Relationships 27
The Economy and Economics 6  ADDED DIMENSION: Resources, Inputs, Technology,	The Economic Organization of Society 31
and Output 7	Economic Systems: Capitalism and
What Economics Is About 7	Socialism 31
Economic Reasoning 8	Capitalism 32
Economic Terminology 8	Socialism 33
Economic Insights 8	Differences between Soviet-Style Socialism and
Economic Institutions 8	Capitalism 35
Economic Policy Options 9	Evolving Economic Systems 35
A REMINDER: Five Important Things to Learn in	ADDED DIMENSION: Tradition and Today's
Economics 9	Economy 36
A Guide to Economic Reasoning 9	ADDED DIMENSION: The Rise of Markets in
Marginal Costs and Marginal Benefits 9	Perspective 37 The Production Persibility Curves Fearnering
ADDED DIMENSION: Economic Knowledge in One	The Production Possibility Curve: Economic
Sentence: TANSTAAFL 10	Reasoning, Trade, and Economic
Economics and Passion 10	Systems 38 The Production Describility Table 38
Opportunity Cost 11	The Production Possibility Table 38 The Production Possibility Curve 39
Economics and the Invisible Forces 12	•
ADDED DIMENSION: The Invisible Forces 13	Comparative Advantage, Trade, and the
Economic Terminology 14	Production Possibility Curve 41
Economic Insights 14	Some Examples of Shifts in the Production
A REMINDER: Winston Churchill and	Possibility Curve 44
Lady Astor 15	The Production Possibility Curve and
The Invisible Hand Theory 15	Economic Systems 45
Economic Theory and Stories 16	The Production Possibility Curve and
Microeconomics and Macroeconomics 16	Tough Choices 47
ADDED DIMENSION: Dealing with Math Anxiety 16	Conclusion 48
Economic Institutions 17	Chapter Summary 49
Economic Policy Options 18	Key Terms 49
Objective Policy Analysis 18	Questions for Thought and Review 49
Policy and the Invisible Forces 18	Problems and Exercises 50
Conclusion 20	Answers to Margin Questions 51
Chapter Summary 20	Appendix A: The History of Economic
Key Terms 21	Systems 52 ADDED DIMENSION: Shareholders and
Questions for Thought and Review 21	ADDED DIMENSION: Snarenoiders and Stakeholders 56
Emotions for I hought und neview 21	Sukenouers 30

<b>1</b>			
3	Supply and Demand 59		The Effects of Taxes, Tariffs, and
	D		Quotas 95
	Demand 59		The Limitations of Supply and Demand
	The Law of Demand 60		Analysis 97
	The Demand Curve 60		The Fallacy of Composition 97
	Important Qualification of the Law of		Examples: Chickens, Eggs, and Composite
	Demand 60		Goods 98
	Shifts in Demand versus Movements along a		Why a Separate Macroeconomics
	Demand Curve 62		Exists 99
	Shift Factors of Demand 63		
	A Review 63		Conclusion 100
	The Demand Table 63		Chapter Summary 100
	From a Demand Table to a Demand		Key Terms 100
	Curve 64		Questions for Thought and Review 101
	Tradical I I I I I I I I I I I I I I I I I I I		Problems and Exercises 101
	A Review 66		Answers to Margin Questions 102
			Appendix A: Algebraic Representation of
			Interferences with Supply and
	A REMINDER: Six Things to Remember When		Demand 103
	Considering a Demand Curve 67		100
	The Law of Supply 68	5	U.S. Economic Institutions 105
	The Supply Curve 68	J	U.S. Economic Institutions 105
	Important Qualifications to the Law of		A Bird's-Eye View of the U.S. Economy 105
	Supply 68		Diagram of the U.S. Economy 106
	Shifts in Supply versus Movements along a		ADDED DIMENSION: The Importance of
	Supply Curve 69		Institutions 106
	Shift Factors of Supply 70		Business 107
	A Review 70		F 4
	The Supply Table 70		Consumer Several and Business 107
	From a Supply Table to a Supply Curve 71		Consumer Sovereignty and Business 107
			A REMINDER: Economic Geography of the United States 108
	ADDED DIMENSION: Supply, Production, and		
	Profit 71		Categories of Business 109
	The Manier CC 1		Forms of Business 109
	The Dynamic Laws of Supply and The Dynamic Laws of Supply and		ADDED DIMENSION: Is the United States a
	Demand 72		Postindustrial Society? 110
			ADDED DIMENSION: Trading in Stocks 111 Households 112
	The Graphical Marriage of Supply and		
	Demand 73		Household Types and Income 112
	A REMINDER: The Dynamic Laws of Supply and		Households as Suppliers of Labor 113
	Demand 73		Government 114
	Equilibrium 74		Government as an Actor 114
	ADDED DIMENSION: Public Choice and Rent-Seeking		Government as a Referee 115
	Economic Models 75		ADDED DIMENSION: Finding More Information
	Changes in Supply and Demand 76		about the Economy 119
	ADDED DIMENSION: The Supply and Demand for Children 77		The Limits of Government Action 120
			Chapter Summary 120
			Key Terms 121
	Chapter Summary 78		Questions for Thought and Review 121
	Key Terms 78		Problems and Exercises 121
	Questions for Thought and Review 78		Answers to Margin Questions 122
	Problems and Exercises 79		Annoudiv A. A. D
	Answers to Margin Questions 80		ADDED DIMENSION: Balance Sheet and
	Appendix A: Algebraic Representation of Demand,		Income Statement 125
	Supply, and Equilibrium 81		Appendix B: Households, Culture, and
			Ideology 126
	Using Supply and Demand 84	6	An Introduction to the W. 117
		O	An Introduction to the World Economy 129
	Supply and Demand in Action 84		International Economic Statistics:
	OPEC and Oil Price Fluctuations 84		An Overview 131
	Examples of Shifts in Supply and		Alternative Methods of Classification 132
	Demand 86		Economic Geography 132
	Exchange Rate Determination 90		Diff F
	ADDED DIMENSION: Black and Gray Markets in		Commonation Advisor 1 mg 4
	Currency 93		ADDED DIMENSION: Key Provisions of the North
	Rent Controls 93		
			American Free Trade Agreement 134

4