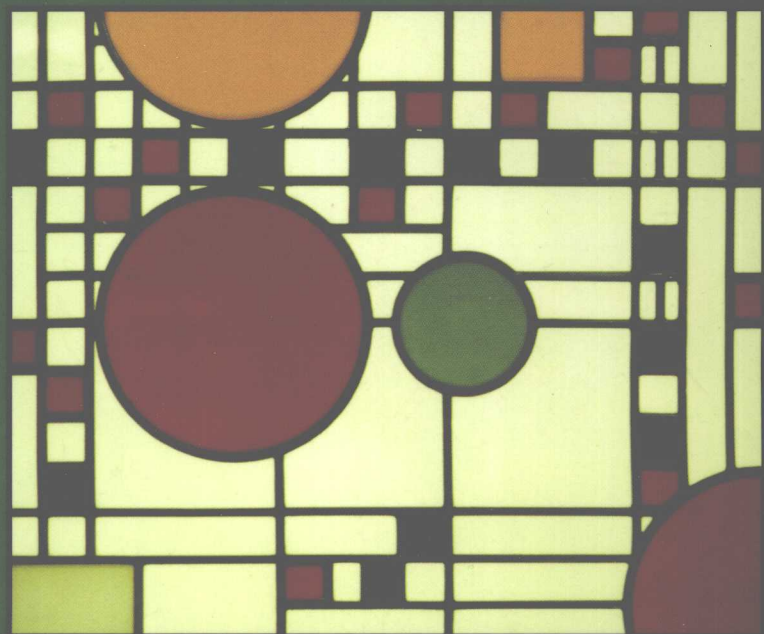


PRINCIPLES OF ECONOMICS

MICRO:



ROBERT FRANK
BEN BERNANKE



30804242

1804242

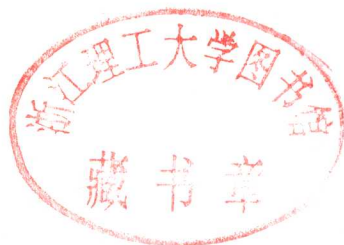
PRINCIPLES OF MICRO- ECONOMICS

ROBERT H. FRANK

Cornell University

BEN S. BERNANKE

Princeton University



**McGraw-Hill
Irwin**

Boston Burr Ridge, IL Dubuque, IA Madison, WI New York San Francisco St. Louis
Bangkok Bogotá Caracas Lisbon London Madrid
Mexico City Milan New Delhi Seoul Singapore Sydney Taipei Toronto

McGraw-Hill Higher Education

A Division of The McGraw-Hill Companies

PRINCIPLES OF MICROECONOMICS

Published by McGraw-Hill/Irwin, an imprint of The McGraw-Hill Companies, Inc., 1221 Avenue of the Americas, New York, NY, 10020. Copyright © 2001, by The McGraw-Hill Companies, Inc. All rights reserved. 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 consent of The McGraw-Hill Companies, Inc., including, but not limited to, in any network or other electronic storage or transmission, or broadcast for distance learning. Some ancillaries, including electronic and print components, may not be available to customers outside the United States. This book is printed on acid-free paper.

2 3 4 5 6 7 8 9 0 QPD/QPD 0 9 8 7 6 5 4 3 2 1

ISBN 0-07-021991-5

Cover: Leaded glass window designed by Frank Lloyd Wright for the Avery Coonley Playhouse, Riverside, Illinois, circa 1912, 61 cm x 97.5 cm

Photo: Christie's Images, New York

Design of book: The images in the design of this book are based on elements of the architecture of Frank Lloyd Wright (1867–1959), specifically from the leaded glass windows seen in many of his houses. Wright's design was rooted in nature and based on simplicity and harmony. His windows use elemental geometry to abstract natural forms, complementing and framing the natural world outside. This concept of seeing the world through an elegantly structured framework ties in nicely to the idea of framing one's view of the world through the window of economics.

The typeface used for some of the elements was taken from the Arts and Crafts movement. The typeface, as well as the color palette, bring in the feeling of that movement in a way that complements the geometric elements of Wright's windows. The Economic Naturalist icon is visually set apart from the more geometric elements but is a representation of the inspirational force behind all of Wright's work.


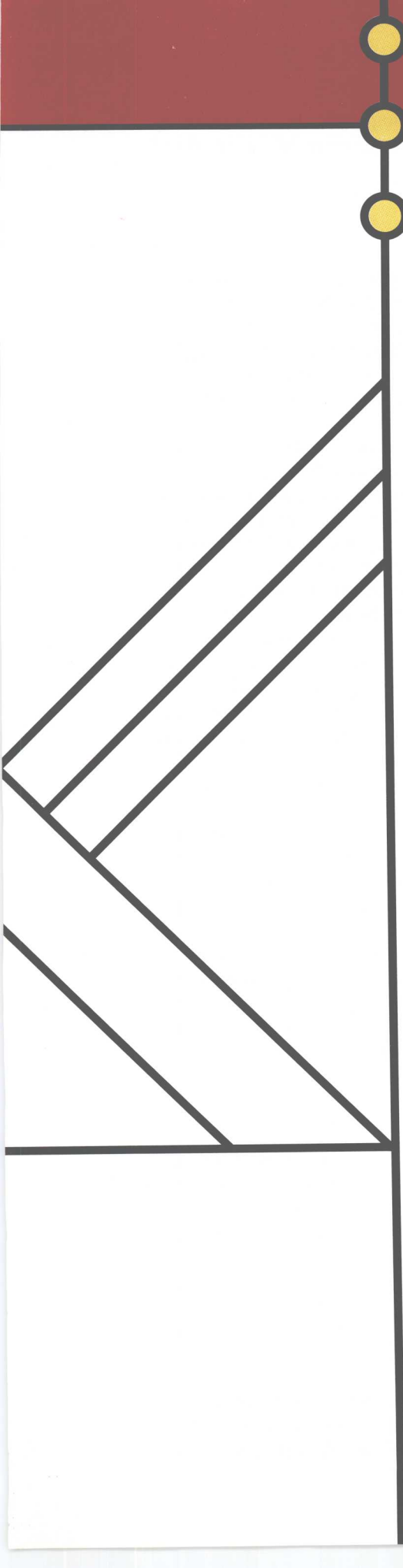
Publisher: Gary Burke
Executive editor: Paul Shensa
Development editor: Tom Thompson
Marketing manager: Martin Quinn
Senior project manager: Jean Lou Hess
Senior production supervisor: Michael McCormick
Designer: Jill Kongabel/Matthew Baldwin
Art editor: Nora Agbayani
Supplement coordinator: Becky Szura
New media: Ann Rogula
Illustrators: Mick Stevens, Elliott Banfield, Brian Barnecko, and Gini Curl
Compositor: GTS Graphics, Inc.
Typeface: 10/12 Sabon Roman
Printer: Quebecor Printing Dubuque

Library of Congress Cataloging-in-Publication Data

Frank, Robert H.
Principles of microeconomics / Robert H. Frank, Ben S. Bernanke.
p. cm.
Includes index.
ISBN 0-07-021991-5 (alk. paper)
1. Microeconomics. I. Bernanke, Ben. II. Title.

HB172 .F72 2001
338.5--dc21

00-061613



Dozens of principles of economics textbooks are available, and new entries into the market appear regularly. But with many copycats and few innovators, instructors' real choices are more limited than these numbers would suggest. We wrote this book from the conviction, born of long experience in the classroom, that there is a different, and better, way to introduce beginning students to economics. In bare bones, the philosophy of this text rests on two pillars: (1) the development and repeated application of a set of core economic principles, without the usual clutter, and (2) an active, student-centered approach to learning.

A SIMPLE AGENDA

The best way to teach introductory economics—or virtually any subject, for that matter—is to expose students to repeated applications of a short list of the core ideas of the discipline. But whose short list? If we asked a thousand economists to provide their own versions, we'd get a thousand different lists. Yet to dwell on their differences would be to miss their essential similarities. Indeed, we suspect that almost all the lists would contain variants of propositions like these:

The Scarcity Principle: Having more of one good thing usually means having less of another.

The Cost-Benefit Principle: Take no action unless its marginal benefit is at least as great as its marginal cost.

The Principle of Unequal Costs: Some costs (e.g., opportunity and marginal) matter in making decisions; other costs (e.g., sunk, average) don't.

The Principle of Comparative Advantage: Everyone does best when each concentrates on the activity for which he or she is relatively most productive.

The Principle of Increasing Opportunity Cost: Use the resources with the lowest opportunity cost before turning to those with higher opportunity costs.

The Equilibrium Principle: A market in equilibrium leaves no unexploited opportunities for individuals, but may not exploit all gains achievable through collective action.

The Efficiency Principle: Efficiency is an important social goal, because when the economic pie grows larger, everyone can have a larger slice.

Our point is not that this is the best short list, but that the introductory course will be taught most effectively if it begins with a well-articulated short list of some sort, and then doggedly hammers away at it, illustrating and applying each principle in context after context. It may be hackneyed to say, but it is nonetheless true that economics is a way of thinking, not a fixed body of facts to be memorized. Beginning students often find the economic way of thinking alien and difficult to master. Repetition and focus on a few core

principles are the key to developing economic thinking skills, in the same way that they are the key to learning to play the saxophone or to hit an overhead smash in tennis.

LESS IS MORE

Of course, many introductory economics textbooks pay lip service to the concepts of core ideas and thinking like an economist. And to be sure, versions of the core principles are found in many books—but often so is virtually every other economic principle that has surfaced over the past 200 years! The mind-boggling detail of these books—many of them thousand-plus-page encyclopedic reference tomes—could not have been purposely designed to camouflage more effectively the handful of principles that really matter.

All too often, students leave the introductory course never having fully grasped the essence of economic fundamentals. For example, the concept of opportunity cost—so utterly central to our understanding of what it means to think like an economist—is but one among hundreds of other concepts that go by in a blur. Opportunity cost is more important than, say, the idea that the short-run average cost curve is tangent to the long-run average cost curve at the optimal output level. But students would never realize that from the relative emphasis these topics receive in most of our introductory textbooks.

We consciously decided to write a textbook, not an encyclopedia. Our coverage includes what we believe to be the essential economic ideas and issues of the day. We have pruned much of the accumulated undergrowth, confident that students' shortest path to clear thinking about economic issues lies in becoming fluent in the basic tools of economic analysis—not in being inundated with more ideas, facts, and opinions than they can reasonably assimilate.

Repetition, however, consumes time and space. So notwithstanding our firm belief in the less-is-more approach, our book does not enter the market with the shortest page count. Instructors with Ph.D.s in economics may wonder whether so much repetition is really necessary, fearing that they will bore their students by exposing them to yet another application of the opportunity cost concept. To many, it will seem that the same time would be better spent discussing why the average fixed cost curve is asymptotic to the quantity axis.

At some point, it surely *is* better to move on to the technical properties of the average fixed cost curve. But in our view that point does not come during the principles course. For decades, each of us has had the privilege of teaching some of the best undergraduates in the world. This experience has persuaded us that when we attempt to teach less, we end up teaching more.

ECONOMIC NATURALISM

In our efforts to train students to think like economists, we aim not just for them to be *able* to apply core economic principles, but also to have an *inclination* to do so. The most effective strategy we have discovered for achieving that goal is to encourage students to become “economic naturalists.” Studying biology enables people to observe and marvel at many details of the natural environment that would otherwise have escaped notice. For the naturalist, a walk in a quiet wood becomes an adventure. In much the same way, studying economics can enable students to see the everyday details of ordinary existence in a bright new light. Throughout the text, *Economic Naturalist* examples show students the relevance of economics to their world.

To illustrate, an economic naturalist is someone like Bill Tjoa, a recent student who asked, “Why do the keypad buttons on drive-up automatic teller machines have Braille dots?” A plausible answer, he reasoned, is that once the

keypad molds have been manufactured, the cost of producing buttons with Braille dots is no higher than the cost of producing smooth ones. Making both types would require separate sets of molds and separate batches of inventory. If the patrons of drive-up machines found buttons with Braille dots harder to use, these extra costs might be worth incurring. But since the dots pose no difficulty for sighted users, the best and cheapest solution is to produce only keypads with dots.

In response to our challenge to employ economic principles to cast light on their own experiences, our students have tackled a host of other fascinating questions. Some recent examples from our classes:

- Why do brides spend so much money on wedding dresses, while grooms often rent cheap tuxedos, even though grooms could potentially wear their tuxedos on many other occasions and brides will never wear their dresses again? (Jennifer Dulski)
- Why, despite the proliferation of electrical appliances in the last century, do electrical outlets in newly built houses still have only two receptacles? (Beth Wollberg)
- Why do top female models earn so much more than top male models? (Fran Adams)
- Why are child safety seats required in cars but not in airplanes? (Greg Balet)

Once students realize that they can pose and answer such questions on their own, they're hooked. A lifetime trajectory begins in which their mastery of economic principles not only doesn't decay with each year after completion of the course, but actually soars higher.

ACTIVE LEARNING

Our second guiding principle has been that active involvement by students—"student-centered" learning, in the jargon—is an essential part of an effective learning process. Merely understanding a concept—in the sense of being able to answer a test question about it the next day—is different from really *knowing* it. Even the brightest students never fully internalize a concept unless they use it repeatedly. So throughout the book, we use a number of devices to foster active learning.

- **Worked Examples.** New ideas and concepts are not simply asserted, as in most books. Instead, they are introduced by means of simple examples, usually numerical, which are worked through step-by-step in the text. These examples display the reasoning process used to reach the economic conclusion or insight, and they provide a model for the student to apply when working exercises and problems.
- **Exercises.** Following many examples, and indeed throughout each chapter, we pose in-text exercises that challenge the student to test and extend his or her understanding of the ideas being discussed. Worked-out answers to in-text exercises are provided at the end of the chapter, allowing immediate feedback.
- **Anecdotes and Illustrations.** Active learning is more likely to happen when students are engaged and motivated. We agree with Mary Poppins that a spoonful of sugar helps the medicine go down (even if the medicine is not so unpleasant). In that spirit, we have tried to make reading this text an enjoyable experience. We begin every chapter with an anecdote that motivates the discussion, and we illustrate the ideas with memorable cartoons, photographs, and original line drawings. Most important, we have striven to minimize jargon and keep the writing direct and student friendly.



- **Recap Boxes and Summaries.** To keep students focused on the forest as well as the trees, at strategic points in each chapter we have provided “recap boxes.” Recaps put into a nutshell the main ideas of the previous section. The recap boxes are themselves recapitulated by bulleted end-of-chapter summaries, which are also designed to review the most important concepts presented in the chapter.
- **Core Principles Icons.** Throughout the book, whenever one of the core principles is discussed, a small icon will appear in the margin, thereby reinforcing the importance of those principles.
- **Review Questions and Problems.** Questions for review at the end of each chapter encourage the student to self-test understanding of the main ideas of the chapter. End-of-chapter problems are carefully crafted to help students internalize and extend core concepts.

THOROUGHLY MODERN MICRO

Although we believe pedagogy is extremely important, ours is not solely a book about pedagogy. Indeed, the decision about what to teach was at least as important to us as the decision of how to teach it. For example, because we believe that the most central concern of economics is efficiency, we have devoted extensive space to the concept of *economic surplus*. Introduced in Chapter 1 and applied repeatedly in Chapters 2–6, this concept is developed more fully in Chapter 7 than in any leading introductory text. Throughout the book, it underlies our ongoing argument in support of economic efficiency as an important social goal. Rather than speaking of tradeoffs between efficiency and other goals, we stress that maximizing economic surplus aids the achievement of all goals, both public and private.

A particularly distinctive feature of our book is its focus on the *normative implications of economic theory for decision making*. Basic economic reasoning tells us that rational individuals should ignore sunk costs when making choices, for example, yet many people are in fact strongly influenced by them. (Someone who has purchased a ticket for an NBA playoff game for \$100 is, in practice, much more likely to drive through a snowstorm to get to the game than is an equally avid fan who won a ticket in a raffle.) Chapter 2 is devoted entirely to three pitfalls that are both widespread and important: the tendency to ignore opportunity costs, the tendency *not* to ignore sunk costs, and the tendency to confuse average and marginal costs and benefits. Throughout the book, we call students’ attention to situations in which they themselves are likely to face similarly problematic choices.

Our goal of training economic naturalists has also helped dictate which topics to cover and which to leave out. Other things being equal, the more a topic enables us to make sense of our observations and experience, the stronger the case for including it. Thus, we are troubled that many people receive college degrees without ever having been exposed to ideas like the prisoner’s dilemma or the tragedy of the commons. These and other *simple applications of game theory* are not only ideal vehicles for illustrating several of the core ideas of economics, but they also have enormous power to explain events in the world. In Chapter 10, we introduce students to the principles of games and strategic behavior in a highly intuitive way that does not rely on formal mathematics. We develop a limited number of simple principles that have proved entirely accessible to freshmen. In our experience, students are delighted to learn that these few principles can explain, among other things, why urban freeways are too crowded, why whales have been hunted to near

extinction, why North Atlantic fisheries are near collapse, why the ozone layer is in danger, why many people fail to vote, and why the National Hockey League has a helmet rule.

ORGANIZATION

The sixteen chapters of the microeconomics split are divided into four parts of four chapters each. Part 1, which is also included in the macroeconomics split, introduces students to the most basic ideas of economics, including all the core principles that will be used throughout the book. Chapter 1 focuses on the ideas of scarcity, tradeoffs, costs, and benefits, including the fundamental notion that the desirability of any action depends on its marginal costs and benefits. Following Chapter 1 is a brief appendix that reviews the basic mathematical tools—working with equations, graphs, and tables—that students will need for the course. As mentioned earlier, Chapter 2 extends the discussion of Chapter 1 by examining some common pitfalls for decision makers, such as the sunk cost fallacy. Chapter 3 introduces the ideas of specialization and gains from trade. Finally, Chapter 4 provides an introductory overview of the tools of supply-and-demand analysis.

Part 2 explores in greater detail the concepts of demand, supply, economic surplus, and efficiency in the context of pure competition. Building on the introduction to supply and demand in Chapter 4, Chapter 5 shows how demand curves are generated by the fact that people spend their limited income in rational ways. This chapter also discusses the concept of price elasticity and its uses. Chapter 6 turns to the sellers' side of the market, showing how upward-sloping supply curves follow from profit-maximizing decisions by producers. Chapter 7 develops the concept of economic surplus and explains Adam Smith's crucial insight—that when demand and supply curves fully reflect social benefits and costs, competitive markets maximize economic surplus. Finally, Chapter 8 examines the idea of economic profit and clarifies how the quest for profit drives competitive firms to provide a socially efficient allocation of resources.

In Part 3 we study deviations from the ideal of pure competition, emphasizing that outcomes in such situations need no longer be socially efficient. Chapter 9 examines one important type of deviation from competition, the existence of monopolistic and oligopolistic firms. When only a few producers exist in a market—and in many other noncompetitive situations—behavior often takes on a strategic component. Building on this observation, Chapter 10 introduces some elementary tools of game theory, demonstrating their applicability to a variety of economic situations. Chapter 11 considers the effects of externalities—situations in which supply and demand curves do not capture the full social costs and benefits of people's choices. We show that elementary game theory—including the ideas of the prisoner's dilemma, the arms race, and the tragedy of the commons—are quite useful for analyzing many situations with externalities. Chapter 12 examines yet another deviation from the competitive ideal, the case of incomplete or asymmetric information. Among many other examples, Chapter 12 includes a discussion of the “lemons” problem in the used-car market and an explanation of why clients prefer lawyers who wear expensive suits.

Finally, Part 4 uses the tools that have been developed to approach some issues of applied economics and economic policy. Chapter 13 tackles the question of why some people earn so much more than others, with attention to factors ranging from human capital investment to discrimination to “winner-take-all” markets. Chapter 14 shows how economic principles can be used to design economic policies that mitigate the effects of market imperfections,

including anti-trust policies and policies about health care, the environment, and crime. Chapter 15 discusses public goods and taxation, as well as broader issues concerning the government's role in the economy. Completing the micro split, Chapter 16 extends the analysis of Chapter 15 by considering the benefits and pitfalls of government policies to redistribute income and reduce poverty.

THE CHALLENGE

The world is a more competitive place now than it was when we started teaching in the 1970s. In arena after arena, business as usual is no longer good enough. Baseball players used to drink beer and go fishing during the off-season, but they now lift weights and ride exercise bicycles. Assistant professors used to work on their houses on weekends, but the current crop can now be found most weekends at the office. The competition for student attention has grown similarly more intense. There are many tempting courses in the typical college curriculum, and even more tempting diversions outside the classroom. Students are freer than ever to pick and choose.

Yet many of us seem to operate under the illusion that most freshmen arrive with a burning desire to become economics majors. And many of us seem not yet to have recognized that students' cognitive abilities and powers of concentration are scarce resources. To hold our ground we must become not only more selective in what we teach, but also more effective as advocates for our discipline. We must persuade students that we offer something of value.

A well-conceived and well-executed introductory course in economics can teach our students more about society and human behavior in a single term than virtually any other course in the university. This course can and should be an intellectual adventure of the first order. Not all students who take the kind of course we envisioned when writing this book will go on to become economics majors, of course. But many will, and even those who do not will leave with a sense of admiration for the power of economic ideas.

A salesperson knows that he or she often gets only one chance to make a good first impression on a potential customer. Analogously, the principles course is often our only shot at helping students appreciate the value of economics. By trying to teach them everything we know—rather than teaching them the most important things we know—we too often squander this opportunity.

SUPPLEMENTS

We believe that an ancillary package is most useful if each element in it is part of a well-considered whole. In order to ensure that our package was as integrated as possible, two solid economists and excellent teachers—Jack Mogab and Bruce McClung at Southwest Texas State University—were charged with overseeing the program. They suggested candidates, gave us advice, and provided feedback for virtually all of the components. Additionally, Jack and Bruce wrote the Study Guide and Bruce wrote the micro test bank.

FOR THE INSTRUCTOR

- **Instructor's Manual.** Prepared by Margaret Ray at Mary Washington College, this manual will be extremely useful for all teachers, but especially for those new to the job. It offers suggestions for using the Study Guide, the test bank, the Economic Naturalists, and cartoons and music for teaching; it supplies sample syllabi with assignments, sample exams, and supplemental material; and it provides for each chapter an overview, an outline, teaching objec-

tives, Economic Naturalist discussion questions, answers to textbook questions and problems, a homework assignment with answers, and a sample quiz with answers.

- **Test Bank.** Prepared by Bruce McClung at Southwest Texas State University, this manual contains more than 2,500 multiple-choice questions categorized by Learning Objective (from the Study Guide); Learning Level (knowledge, comprehension, application, analysis); Type (graph, calculation, word problem); and Source (textbook, Study Guide, Web, unique).
- **Computerized Test Banks.** The print test bank is also available in the latest Diploma test-generating software, ensuring maximum flexibility in test preparation, including the reconfiguring of graphing exercises. This Brownstone program is the gold standard of testing programs.
- **PowerPoints.** Prepared by Rebecca Campbell at Southwest Texas State University, these slides contain all of the illustrations in the textbook, along with a detailed, chapter-by-chapter review of the important ideas presented in the textbook.
- **Overhead Transparencies.** These more than 135, four-color acetates contain all the illustrations presented in the textbook.
- **Videos.** Produced by Paul Solman, business and economics correspondent for the Lehrer News Hour and WGBH Boston, these five 10-minute segments, available on CD or tape, cover five core concepts in economics.
- **Instructor's CD-ROM.** This remarkable Windows software program, which contains the Instructor's Manual, the Computerized Test Banks, and the PowerPoints, also allows the instructor to create presentations from any of the materials on the CD or from additional material that can be imported.
- **Web Site.** The development and design of the site was overseen by Scott Simkins at North Carolina A&T State University, and much of the content was provided either by Scott or by Jim Barbour at Elon College. Both of these experienced teachers are in the forefront of a movement to make teaching using the Web easier and more valuable. For teachers there are, among other things, an online newsletter called "Teaching Using the Web" (coordinated by Mark Maier at Glendale College); the Instructor's Manual; the PowerPoints; Economics on the Web, an annotated set of URLs/links to sites of interest to economists; along with a description of what's on the student site and some Optional Material from the book.

FOR THE STUDENT

- **Study Guide.** Written by Jack Mogab and Bruce McClung at Southwest Texas State University, these three books—for Economics, Microeconomics, and Macroeconomics—provide the following elements for each chapter: a Key Point Review; a Learning Objective Grid; and Self-Tests (Key Term Matching, Multiple Choice, Problems) with answers.
- **DiscoverEcon.** This menu-driven software was developed by Gerald Nelson at the University of Illinois. It provides students with a book-specific tutorial for either microeconomics or macroeconomics. Each chapter offers two essay questions and a multiple-choice test, and when appropriate, interactive graphing problems let students observe how the economic picture is altered as data is changed. There are also links to the textbook glossary.
- **Web Site.** Based on the idea that the single most important feature of any web site is quizzing and feedback, each chapter begins with an Electronic Learning Session (eLS). Each eLS opens with a brief recap of the chapter and

is followed by a pretest with answers and analysis; the test is then followed by a set of study sessions based on Economic Naturalist Exercises, Graphing Exercises, PowerPoints, and Key Terms; and the study session is finally followed by a posttest, with answers and analysis. The site also contains such useful and exciting features as Interpreting the News—articles and summaries of relevant articles with analysis and discussion questions; Videos—10-minute segments on key concepts produced by Paul Solman of WGBH in Boston; e-mail Updates—periodic sending of information/study tips; the Glossary from the textbook; and Economics on the Web—annotated URLs useful for economics students.

ACKNOWLEDGMENTS

Our thanks first and foremost go to our publisher, Gary Burke, for his unwavering faith in our project over the past several years. In an industry known for sticking with proven formulas, he has been willing from the outset to gamble that the market will embrace our somewhat unorthodox vision. Without his support and encouragement, we never could have produced this book. Tom Thompson, our development editor, was enormously helpful as he guided us with intelligence, patience, and tact through three major revisions of the original manuscript. We also thank Paul Shensa, the sponsoring editor, whose considerable experience, insightful suggestions, and extensive knowledge of the marketplace were of great help. We are especially grateful to Betty Morgan, our superb manuscript editor. And we are also grateful to the production team, whose professionalism was outstanding: Jean Lou Hess, Senior Project Manager; Michael McCormick, Senior Production Supervisor; Jill Kongabel and Matthew Baldwin, Designers; Nora Agbayani, Art Editor; Becky Szura, Supplements Coordinator, and Ann Rogula, New Media Producer.

Finally, our sincere thanks to the following teachers and colleagues, whose thorough reviews and thoughtful suggestions led to innumerable substantive improvements:

Ercument Aksoy
Los Angeles Valley College

Richard Anderson
Texas A&M University

Daniel Berkowitz
University of Pittsburgh

Guatam Bhattacharya
University of Kansas

Scott Bierman
Carleton College

Kelly Blanchard
Purdue University

Bruce Blonigen
University of Oregon

Beth Bogan
Princeton University

George Borts
Brown University

Nancy Brooks
University of Vermont

Douglas Brown
Georgetown University

Marie Bussings-Burk
Southern Indiana University

David Carr
University of Colorado

Jack Chambliss
Valencia Community College

James Cover
University of Alabama

Carl Davidson
Michigan State University

Paul DePippo
Glendale Community College

Lynn Pierson Doti
Chapman College

Donald Dutkowsky
Syracuse University

Nancy Fox
Saint Joseph's College

Geoffrey Gee
California State
University–Fullerton

Jonah Gelbach
University of Maryland

Linda Ghent
East Carolina University

Kirk Gifford
Ricks College

Robert Gillette
University of Kentucky

Stephen Gohman
University of Louisville

Refet Gurkaynak
Princeton University

Mary Jean Horney
Furman University

Nancy Jianakoplos
Colorado State University

Robert Johnson
University of San Diego

William Kerby
California State
University–Sacramento

Herbert Kiesling
Indiana University

Bruce Kingma
State University of New
York–Albany

Hannes Kvaran
Glendale Community College

Leonard Lardaro
University of Rhode Island

Anthony Lima
California State
University–Hayward

Tom Love
North Central University

Steven McCafferty
The Ohio State University

Edward McNertney
Texas Christian University

William Merrill
Iowa State University

Paul Nelson
Northeast Louisiana State
University

Neil Niman
University of New Hampshire

Norman Obst
Michigan State University

Charles Okeke
Community College of Southern
Nevada

Duane Oyen
University of Wisconsin–Eau Claire

Theodore Palivos
Louisiana State University

Michael Potepan
San Francisco State University

Steve Robinson
University of North
Carolina–Wilmington

Christina Romer
University of California–Berkeley

David Romer
University of California–Berkeley

Greg Rose
Sacramento City College

Robert Rossana
Wayne State University

Richard Salvucci
Trinity University

Edward Scahill
University of Scranton

Pamela Schmitt
Indiana University

Dennis Starleaf
Iowa State University

Esther-Mirjam Sent
University of Notre Dame

John Solow
University of Iowa

Helen Tauchen
University of North
Carolina–Chapel Hill

Kay Unger
University of Montana

Stephan Weiler
Colorado State University

Jeffrey Weiss
City University of New
York–Baruch College

Richard Winkelman
Arizona State University

Mark Wohar
University of Nebraska–Omaha

Louise Wolitz
University of Texas–Austin

Darrel Young
University of Texas–Austin

Zenon Zygmunt
Western Oregon University



BRIEF CONTENTS

Preface ix

PART I Introduction

- 1** Thinking Like an Economist 3
- 2** Some Common Pitfalls for Decision Makers 31
- 3** Comparative Advantage: The Basis for Exchange 49
- 4** Supply and Demand: An Introduction 73

PART 2 Competition and the Invisible Hand

- 5** Demand: The Benefit Side of the Market 103
- 6** Perfectly Competitive Supply: The Cost Side of the Market 135
- 7** Efficiency and Exchange 165
- 8** The Quest for Profit and the Invisible Hand 195

PART 3 Market Imperfections

- 9** Monopoly and Other Forms of Imperfect Competition 221
- 10** Thinking Strategically 247
- 11** Externalities and Property Rights 273
- 12** The Economics of Information 297

PART 4 Labor Markets and the Public Sector

- 13** Labor Markets 321
- 14** The Economics of Public Policy 349
- 15** Public Goods and Taxation 377
- 16** Income Redistribution 401

Glossary G-1

Index I-1

PART I Introduction

Chapter 1 Thinking Like an Economist 3

Economics: Studying Choice in a World of Scarcity 4

Applying the Cost-Benefit Principle 5

Reservation Prices 6

Economic Surplus 6

Opportunity Cost 7

The Role of Economic Models 8

To What Extent Should an Activity Be Pursued? 8

Rationality and Imperfect Decision Makers 9

Weighing Benefits and Costs Graphically 11

Economics: Micro and Macro 13

The Philosophy of This Text 14

Economic Naturalism 14

ECONOMIC NATURALIST 1.1: Why do today's computers have so much more memory than those of a few years ago? 15

ECONOMIC NATURALIST 1.2: Why is so much expensive software included with the sale of computers? 16

ECONOMIC NATURALIST 1.3: Why don't auto manufacturers make cars without heaters? 17

ECONOMIC NATURALIST 1.4: Why do keypads on drive-up teller machines have Braille dots? 17

Summary 18

Core Principles 18

Key Terms 18

Review Questions 18

Problems 19

Answers to In-Chapter Exercises 20

Appendix: Working with Equations, Graphs, and Tables 21

Chapter 2 Some Common Pitfalls for Decision Makers 31

Pitfall 1: Ignoring Opportunity Costs 32

Recognizing the Relevant Alternative 32

The Time Value of Money 33

ECONOMIC NATURALIST 2.1: Is it "unfair" to charge interest on a loan to a friend or family member? 35

Pitfall 2: Failure to Ignore Sunk Costs 36

Pitfall 3: Failure to Understand the Average-Marginal Distinction 39

The Relevant Costs and Benefits Are Always Marginal 39

Fixed and Variable Costs 42

<i>Summary</i>	44
<i>Core Principles</i>	45
<i>Key Terms</i>	45
<i>Review Questions</i>	45
<i>Problems</i>	45
<i>Answers to In-Chapter Exercises</i>	47

Chapter 3 **Comparative Advantage: The Basis for Exchange** 49

Exchange and Opportunity Cost	50
The Principle of Comparative Advantage	51
ECONOMIC NATURALIST 3.1: Where have all the .400 hitters gone?	53
Sources of Comparative Advantage	54
ECONOMIC NATURALIST 3.2: Why did the United States fail to retain its lead in the production of televisions and VCRs?	54
Comparative Advantage and Production Possibilities	55
Production Possibilities in a One-Person Economy	55
Factors That Influence the Production Possibilities Curve	58
Production Possibilities in a Two-Person Economy	59
How Much Does Specialization Matter?	61
A Production Possibilities Curve for a Many-Person Economy	64
Comparative Advantage and International Trade	65
Does Everyone Benefit from Trade?	68
<i>Summary</i>	68
<i>Core Principles</i>	69
<i>Key Terms</i>	69
<i>Review Questions</i>	69
<i>Problems</i>	69
<i>Answers to In-Chapter Exercises</i>	71

Chapter 4 **Supply and Demand: An Introduction** 73

What, How, and for Whom? Central Planning versus the Market	75
Markets and Prices	76
The Supply Curve	77
The Demand Curve	78
Market Equilibrium	79
Rent Controls Reconsidered	81
Hamburger Price Controls	84
Markets and Social Welfare	86
Cash on the Table	86
Smart for One, Dumb for All	87
Predicting and Explaining Changes in Prices and Quantities	88
Shifts in the Supply Curve	89
ECONOMIC NATURALIST 4.1: Why do book and Ph.D. dissertation manuscripts go through more revisions today than in the 1970s?	91
Shifts in Demand	92
ECONOMIC NATURALIST 4.2: Why do rents for well-located apartments in Washington go up after a government pay raise?	93
Four Simple Rules	95
ECONOMIC NATURALIST 4.3: Why do prices of some goods rise during times of heaviest consumption while others go down?	97

<i>Summary</i>	97
<i>Core Principles</i>	98
<i>Key Terms</i>	98
<i>Review Questions</i>	99
<i>Problems</i>	99
<i>Answers to In-Chapter Exercises</i>	100

PART 2 Competition and the Invisible Hand

Chapter 5 Demand: The Benefit Side of the Market 103

Needs, Wants, and the Law of Demand	104
Translating Wants into Demand	106
Measuring Wants: The Concept of Utility	106
Allocating a Fixed Income between Two Goods	108
The Rational Spending Rule	110
How Income and the Prices of Substitutes Affect Demand	112
Applying the Rational Spending Rule	113
Substitution at Work	113
ECONOMIC NATURALIST 5.1: Why do the wealthy live in smaller houses in Manhattan than in Seattle?	113
ECONOMIC NATURALIST 5.2: Why did people buy smaller cars in the 1970s but shift back to larger cars in the 1990s?	114
ECONOMIC NATURALIST 5.3: Why are automobile engines smaller in England than in the United States?	115
ECONOMIC NATURALIST 5.4: Why are waiting lines longer in poorer neighborhoods?	115
How the Distribution of Income Affects Demand	115
ECONOMIC NATURALIST 5.5: Why does a room with a view cost more in Berkeley than in Hanover?	115
Individual and Market Demand Curves	116
Horizontal Addition	117
The Straight-Line Demand Curve	117
Total Expenditure	119
Price Elasticity of Demand	122
Elasticity and Total Expenditure	123
Determinants of Price Elasticity of Demand	124
ECONOMIC NATURALIST 5.6: Will a higher tax on cigarettes curb teenage smoking?	125
Calculating Price Elasticity	125
Price Elasticity Changes along a Straight-Line Demand Curve	127
Income Elasticity and Cross-Price Elasticity of Demand	127
Two Special Cases	128
Where Do Wants Come From?	129
<i>Summary</i>	130
<i>Key Terms</i>	130
<i>Review Questions</i>	130
<i>Problems</i>	131
<i>Answers to In-Chapter Exercises</i>	132