

# ECONOMICS PRINCIPLES/PROBLEMS/DECISIONS

E D W I N M A N S F I E L D

DIRECTOR / CENTER FOR ECONOMICS AND TECHNOLOGY / UNIVERSITY OF PENNSYLVANIA

E

DITIO



S

X

H

# **PREFACE**

The American economy, while basically strong and vibrant, is beset by a number of problems which must be faced in the next decade. With the students of a new decade in mind, a major thrust of this revision has been to devote space to these central economic problems. Major new sections, each two or more pages long, have been added on the following "Economic Issues of the 1990s": (1) The Enormous Federal Budget Deficits, (2) What's Become of the Relationship between the Money Supply and GNP? (3) America's Chronic Trade Deficit, (4) Can American Firms Compete? (5) Corporate Takeovers: Boon or Problem? (6) The AIDS Epidemic and Who Will Pay, (7) Should the Minimum Wage Go Up? (8) Has the United States Lost Its Technological Edge? Each of these new sections indicates how economic analysis can help to illuminate these central public issues. Based on my own classroom experience, this new feature of this text should be of great use in whetting the interest of students and in helping them to thread their way through complex contemporary issues.

Many of these "Economic Issues of the 1990s" are concerned with the international competitiveness of American industry and international economic relationships. Reflecting their continued growth in importance to the American economy, this new edition places much more emphasis on these topics. The principle of comparative advantage is presented in Chapter 2. New sections on the effects of exports and imports on net national product, as well as on fiscal policy in an open economy, are now in Chapter 11. Detailed treatments of international trade and international finance have been moved forward to Chapters 17 and 18. A new insert on strategic trade policy is found in Chapter 17.

The organization of the book has been changed in other major ways as well. The discussion of government expenditures and taxation is now placed later (in Chapters 27 to 29), thus permitting a fuller analysis of these important topics. The re-positioning of these chapters has the important advantage as well of allowing us to get to macroeconomics more quickly: the coverage now begins in Chapter 5. Also, the treatment of aggregate supply in Chapter 7 has been beefed up considerably. Further, a substantial amount of material has been added (in Chapters 10 and 28) concerning budget deficits and the federal debt, including more on the New Classical Economists' views in this regard. Chapter 11 contains a new boxed example called "How Good Were Chairman Greenspan's Forecasts?" that gives students a pointed look at the advantages—and problems—of macroeconomic forecasting. In addition, the treatment of rational expectations in Chapters 15 and 16 has been expanded, while some of the Keynesian-monetarist issues

that are no longer of central importance have been dropped. The material on economic growth in developed and developing countries, which has been brought together in Chapters 33 and 34, contains new material, including a boxed example on the economic plight of Nigeria.

The microeconomic chapters, like the macroeconomic ones, have been revised significantly. Chapter 4 contains a new insert on the stock market crash of 1987, as well as a boxed example dealing with another Wall Street market: a hot dog vendor. The examination of consumer behavior in Chapter 20 now begins with a recent study of the finances of a Jacksonville, Florida, family. Chapter 25 includes a boxed example on "The End of the Cozy Milk Oligopoly in New York," as well as new material on the prisoner's dilemma and "tit for tat." Chapter 27 deals with Sematech, the Pentagon-financed R and D consortium in the semi-conductor industry. Chapter 30 contains a new insert on "Equal Pay for Work of Comparable Worth." Chapter 35 provides a new section on Mikhail Gorbachev's economic reforms in the Soviet Union.

Besides adding new features and material, this edition builds on and extends some unique features of the previous edition. To help students see (and remember) the forest, as distinct from a hodgepodge of trees, a relatively small number of Basic Ideas (one or two per chapter) are highlighted. In this edition, these basic ideas have been sharpened and reduced in number, and each is accompanied by an example. One can reasonably expect these Basic Ideas to stick with students; and if so, their time will have been well spent because these ideas really constitute the heart of elementary economics, stripped of frills and details.

Most textbooks do not encourage the student to get involved in the subject. They simply lay out the material, leaving the student to absorb it passively. In previous editions, I have invited students to *do* economics in order to understand it better. Scores of examples were provided, each describing a real (or realistic) situation and then calling on the student to work through the solution. Also, in each chapter there were two problem sets, both designated "Test Yourself" that enabled students to check their comprehension of what they had just read. The reaction of instructors and students was very favorable, and the emphasis on doing economics is maintained in this Sixth Edition.

All of the empirical and policy-oriented chapters have been updated. Since a text should reflect current conditions and concerns, the government policies in all the major economic areas—fiscal, monetary, incomes, farm, energy, environmental, antitrust, and international—are reviewed in depth. The latest data available have been incorporated in the tables, diagrams, and discussions, while revisions in sections on economic forecasting, reserve requirements, Social Security, and a variety of other topics have brought them into line with current developments.

Since instructors differ considerably in their choice and ordering of topics, the Sixth Edition, like its predecessors, is organized for maximum flexibility. Many instructors take up microeconomics before macroeconomics. This book will work just as well for these instructors as for those who prefer to present macroeconomics first. (A suggested ordering of chapters is presented for them on p. xix.) As an alternative to reversing the chapter sequence in the one-volume edition, some instructors may want to consider the two-volume paperbound version,

*Principles of Microeconomics and Principles of Macroeconomics*, Sixth Editions.

This book can also be adapted for use in one-semester courses. Pages xix-xx present outlines for a one-semester course stressing microeconomics, a one-semester course stressing macroeconomics, and a one semester course covering both.

As supplements to this text, I have prepared both a book of readings and a study guide containing problems and exercises. The book of readings is in two parts, *Principles of Macroeconomics: Readings, Issues, and Cases.* Fourth Edition, and *Principles of Microeconomics: Readings, Issues, and Cases,* Fourth Edition. It provides a substantial set of supplementary articles, carefully correlated with the text for instructors who want to introduce their students to the writings of major contemporary economists. It is designed to acquaint the student with a wide range of economic analysis, spanning the spectrum from the classics to the present-day radicals. The emphasis, as in the text, is on integrating theory, measurement, and applications.

The *Study Guide*, Sixth Edition, contains, in addition to problems, review questions, and tests, a large number of cases that require the student to work with quantitative material in applying concepts to practical situations. Both students and instructors have reported that such cases are important in motivating students and illuminating economic theory.

An *Instructor's Manual* has been prepared by Michael Claudon of Middlebury College to accompany the text. A *Test Item File*, prepared by Herbert Gishlick of Rider College, is available both in printed form and on computer tape. *Transparency Masters* are also available to instructors who adopt the text.

Finally, it is a pleasure to acknowledge the debts that I owe to the many teachers at various colleges and universities who have commented in detail on various parts of the manuscript. The first, second, and third editions benefited greatly from the advice I received from the following distinguished economists, none of whom is responsible, of course, for the outcome: Wallace Atherton, California State University at Long Beach; Bela Balassa, Johns Hopkins; Robert Baldwin, University of Wisconsin (Madison); Arthur Benavie, North Carolina; Lee Biggs, Montgomery College; Donald Billings, Boise State; William Branson, Princeton; Martin Bronfenbrenner, Duke; Edward Budd, Penn State; Phillip Burstein, Purdue; Wade Chio, U.S. Air Force Academy; Michael Claudon, Middlebury; Warren Coates. Federal Reserve; Richard Cooper, Yale; Alan Deardorff, Michigan; William Desvousges, Missouri (Rolla); F. Trenery Dolbear, Brandeis; Robert Dorfman, Harvard; James Duesenberry, Harvard; William Dugger, North Texas State University; Richard Easterlin, University of Southern California; Jonathan Eaton, Princeton; David Fand, Wayne State; Judith Fernandez, University of California (Berkeley); David Gay, University of Arkansas; Howard A. Gilbert, South Dakota State University; Gerald Goldstein, Northwestern; Robert Gordon, Northwestern; Edward Gramlich, Michigan; Herschel Grossman, Brown; William Gunther, Alabama; Jerry Gustafson, Beloit; Judith Herman, Queens College; Alan Heston, University of Pennsylvania; Albert Hirschman, Harvard; Ronald Jones, Rochester; John Kareken, Minnesota; Ann Krueger, Duke; Robert Kuenne, Princeton; Simon Kuznets, Harvard; William Leonard, St.

Joseph's; Richard Levin, Yale; Raymond Lubitz, Columbia and the Federal Reserve; John F. MacDonald, Illinois (Chicago Circle); Sherman Maisel, University of California (Berkeley); Leonard Martin, Cleveland State University; Thomas Mayer, University of California (Davis); William McEachern, University of Connecticut; Joseph McKinney, Baylor; Edward McNertney, Texas Christian University; Steven Morrison, University of California (Berkeley); John Murphy, Canisius; Arthur Okun, Brookings Institution; Lloyd Orr, Indiana; R. D. Peterson, Markenomics Associates (Fort Collins); E. Dwight Phaup, Union College; Roger Ransom, University of California (Berkeley); Charles Ratliff, Davidson College; Albert Rees, Sloane Foundation; Edward Renshaw, State University of New York (Albany); Anthony Romeo, Unilever; Vernon Ruttan, Minnesota; Warren St. James, Nassau County Community College; Steven Sacks, University of Connecticut; Allen Sanderson, William and Mary; David Schulze, Florida; Edward Shapiro, University of Toledo; William Shugart, Arizona; Paul Sommers, Middlebury; Nicolas Srulber, Indiana; Charles Tone, Swarthmore; Richard Sutch, University of California (Berkeley); Frank Tansey, City University of New York; Michael Taussig, Rutgers; Thomas Tidrick, Clayton Junior College; Fred Westfield, Vanderbilt; Simon Whitney, Iona College; William Whitney, University of Pennsylvania; and Harold Williams, Kent State University.

Among the teachers who contributed comments and suggestions for the changes in subsequent editions are: Otis Gilley, University of Texas at Austin; Marvin E. Goodstein, University of the South; Clyde A. Haulman, College of William and Mary; Bruce Herrick, Washington and Lee University; William Keeton, Yale; Stuart Lynn, Assumption College; Thomas Maloy, Muskegon Community College; Walter Misiolek, University of Alabama; Jennifer Roback, Yale; Thomas Shea, Springfield College; Calvin D. Siebert, University of Iowa.

I would like to thank Elisabeth Allison of Harvard University for contributing the inserts that appear (over her initials) in various chapters, W. Drake McFeely of W. W. Norton for his efficient handling of the publishing end of the work, and Edward D. Mansfield and Elizabeth D. Mansfield for editorial help. As always, my wife, Lucile, has contributed an enormous amount to the completion of this book.

Philadelphia, 1988

E.M.

# Outline of a One-Year Course with Macroeconomics Following Microeconomics.

- 1 Economic Problems and Analysis
- 2 Economic Models and Capitalism, American-Style
- 3 The Price System
- 4 A Guided Tour of the Business Firm
- 19 Market Demand and Price Elasticity
- 20 Getting behind the Demand Curve: Consumer Behavior
- 21 Optimal Input Decisions by Business Firms
- 22 Cost Analysis
- 23 Perfect Competition
- 24 Monopoly and Its Regulation
- 25 Monopolistic Competition and Oligopoly
- 26 Industrial Organization and Antitrust Policy
- 30 Determinants of Wages
- 31 Interest, Rent, and Profits
- 32 Income Inequality and Poverty
- 5 National Income and Product
- 6 Unemployment and Inflation
- 7 Aggregate Demand, Aggregate Supply, and Business Fluctuations

- 8 Determining National Output
- 9 Multiplier Analysis and Changes in Output
- 10 Fiscal Policy and National Output
- 11 Foreign Trade, Business Fluctuations, and Economic Forecasting
- 12 Money and the Economy
- 13 The Banking System and the Quantity of Money
- 14 Monetary Policy
- 15 Controversies over Stabilization Policy
- 16 Inflation and Anti-Inflationary Measures
- 17 International Trade
- 18 Exchange Rates and the Balance of Payments
- 27 The Economic Role of the Government
- 28 Government Expenditures, Taxation, and the Public Debt
- 29 Government and the Environment
- 33 Economic Growth
- 34 The Less Developed Countries
- 35 The Communist Countries and Marxism

# Outline of a One-Semester Course Emphasizing Microeconomics.

- 1 Economic Problems and Analysis
- 2 Economic Models and Capitalism, American-Style
- 3 The Price System
- 4 A Guided Tour of the Business Firm
- 5 National Income and Product
- 6 Unemployment and Inflation
- 7 Aggregate Demand, Aggregate Supply, and Business Fluctuations
- 8 Determining National Output
- 9 Multiplier Analysis and Changes in Output
- 10 Fiscal Policy and National Output
- 12 Money and the Economy

- 13 The Banking System and the Quantity of Money
- 14 Monetary Policy
- 19 Market Demand and Price Elasticity
- 20 Getting Behind the Demand Curve: Consumer Behavior
- 21 Optimal Input Decisions by Business Firms
- 22 Cost Analysis
- 23 Perfect Competition
- 24 Monopoly and Its Regulation
- 25 Monopolistic Competition and Oligopoly
- 26 Industrial Organization and Antitrust Policy
- 27 The Economic Role of the Government
- 32 Income Inequality and Poverty [optional]

# Outline of a One-Semester Course Emphasizing Macroeconomics.

- 1 Economic Problems and Analysis
- 2 Economic Models and Capitalism, American-Style
- 3 The Price System
- 4 A Guided Tour of the Business Firm
- 5 National Income and Product
- 6 Unemployment and Inflation
- 7 Aggregate Demand, Aggregate Supply, and **Business Fluctuations**
- 8 Determining National Output
- 9 Multiplier Analysis and Changes in Output10 Fiscal Policy and National Output
- 11 Foreign Trade, Business Fluctuations, and Economic **Forecasting**

- 12 Money and the Economy
- 13 The Banking System and the Quantity of Money
- 14 Monetary Policy
- 15 Controversies over Stabilization Policy
- 17 International Trade
- 18 Exchange Rates and the Balance of Payments
- 33 Economic Growth
- 34 The Less Developed Countries
- 27 The Economic Role of the Government
- 28 Government Expenditures, Taxation, and the Public Debt

# Outline of a One-Semester Course Emphasizing Macroeconomics and Microeconomics.

- 1 Economic Problems and Analysis
- 2 Economic Models and Capitalism, American-Style
- 3 The Price System
- 4 A Guided Tour of the Business Firm
- 5 National Income and Product
- 6 Unemployment and Inflation
- 7 Aggregate Demand, Aggregate Supply, and **Business Fluctuations**
- 8 Determining National Output9 Multiplier Analysis and Changes in Output10 Fiscal Policy and National Output
- 11 Foreign Trade, Business Fluctuations, and Economic **Forecasting**
- 12 Money and the Economy

- 13 The Banking System and the Quantity of Money
- 14 Monetary Policy
- 15 Controversies over Stabilization Policy16 Inflation and Anti-Inflationary Measures
- 19 Market Demand and Price Elasticity
- 20 Getting Behind the Demand Curve: Consumer
- 21 Optimal Input Decisions by Business Firms
- 22 Cost Analysis
- 23 Perfect Competition
- 24 Monopoly and Its Regulation27 The Economic Role of the Government
- 28 Government Expenditures, Taxation, and the Public Debt

# CONTENTS

PREFACE XV
COURSE OUTLINE XIX

#### PART ONE INTRODUCTION TO ECONOMICS

#### Chapter 1 / ECONOMIC PROBLEMS AND ANALYSIS 1

Economic Problems: A Sampler 1 / THE PRESSING PROBLEMS OF AMERICAN MANUFACTURING 3 / What Is Economics? 6 / Test Yourself 9 / Opportunity Cost: A Fundamental Concept 9 / Example 1.1 How Much Does It Cost to Go to College? 12 / The Impact of Economics On Society 12 / ADAM SMITH ON THE "INVISIBLE HAND" 14 / Example 1.2 The Assessment of Damages 15 / Test Yourself 16 / Summary 17 / Concepts for Review 17

#### Chapter 2 / ECONOMIC MODELS AND CAPITALISM, AMERICAN-STYLE 18

The Methodology of Economics 18 / Graphs and Relationships 20 / The Tasks of an Economic System 22 / Test Yourself 23 / The Economic System: A Simple Introductory Model 23 / Example 2.1 Hay and Grain in lowa 25 / THE ROLE OF SAVING IN THE INDUSTRIAL REVOLUTION AND JAPANESE GROWTH 29 / Capitalism: An Economic System 31 / TRADE, SPECIALIZATION, AND COMPARATIVE ADVANTAGE 32 / Our Mixed Capitalist System 35 / Test Yourself 36 / Summary 37 / Concepts for Review 37

#### Chapter 3 / THE PRICE SYSTEM 38

Consumers, Firms, and Markets 38 / The Demand Side of a Market 39 / The Supply Side of a Market 42 / Actual Price 44 / Example 3.1 It's Not Just for Breakfast Anymore 45 / Test Yourself 46 / The Effects of Shifts in the Demand Curve 47 / The Effects of Shifts in the Supply Curve 48 / How the Price System Determines What Is Produced 49 / How the Price System Determines How Goods Are Produced 50 / How the Price System Determines Who Gets What 51 / How the Price System Determines the Rate of Economic Growth 52 / Two Case Studies 52 / Price Ceilings and Price Supports 56 / The Circular Flows of Money and Products 57 / Test Yourself 58 / Summary 59 / Concepts for Review 59

# Chapter 4 / A GUIDED TOUR OF THE BUSINESS FIRM 60

The IBM Corporation: A Case Study 60 / Characteristics of American Firms: Some Salient Facts 62 / Proprietorships 63 / Partnerships 63 / Corporations 64 / Corporate Securities 65 / BUYING AND SELL-ING COMMON STOCKS 66 / The Stock Market 67 / BLACK MONDAY ON WALL STREET 69 / The Giant Corporation 70 / Test Yourself 71 / Motivation of the Firm 71 / Technology, Inputs, and the Production Function 72 / Elements of Accounting: The Firm's Balance Sheet 73 / The Firm's Income Statement 75 / Example 4.1 How to Depreciate a Baseball Club 76 / Example 4.2 How Much Does a Hot Dog Vendor Make? 78 / Test Yourself 79 / Summary 79 / Concepts for Review 80

# PART TWO NATIONAL OUTPUT, INCOME, AND EMPLOYMENT

#### Chapter 5 / NATIONAL INCOME AND PRODUCT 81

Gross National Product 81 / Adjusting GNP for Price Changes 83 / Using Value-Added to Calculate GNP 85 / Net National Product 86 / The Limitations of GNP and NNP 87 / Example 5.1 Measured Economic Welfare and National Defense 88 / Test Yourself 89 / Two Approaches to GNP 90 / The Expenditures Approach to GNP 90 / The Income Approach to GNP 92 / GNP Equals the Total Claims on Output: A Proof 94 / National Income, Personal Income, and Disposable Income 96 / Test Yourself 98 / Summary 99 / Concepts for Review 100

#### Chapter 6 / UNEMPLOYMENT AND INFLATION 101

Unemployment 101 / The Measurement and Incidence of Unemployment 103 / Theories of Unemployment 107 / Example 6.1 Should We Look at Employment, Not Unemployment? 108 / Test Yourself 112 / Inflation 113 / The Measurement of Inflation 114 / Example 6.2 Money Wages and Real Wages in Manufacturing 117 / The Relationship Between Inflation and Unemployment 119 / UNEMPLOYMENT AND INFLATION: AN INTERNATIONAL OVERVIEW 120 / Test Yourself 121 / Summary 121 / Concepts for Review 122

# Chapter 7 / AGGREGATE DEMAND, AGGREGATE SUPPLY, AND BUSINESS FLUCTUATIONS 123

Aggregate Supply and Demand 123 / The Aggregate Demand Curve 124 / The Aggregate Supply Curve 125 / National Output and the Price Level 127 / Effects of Shifts in the Aggregate Demand Curve 128 / Reasons for Shifts in the Aggregate Supply Curve 131 / Effects of Shifts in the Aggregate Supply Curve 132 / Example 7.1 A Ratchet Effect on Aggregate Supply 132 / What if Equilibrium Occurs Above Full Employment? 134 / What if Equilibrium Occurs Below Full Employment? 135 / The Aggregate Supply Curve: Long Run vs. Short Run 136 / Test Yourself 136 / Business Fluctuations 136 / Business Fluctuations During 1929–88: A Brief Overview 139 / Test Yourself 143 / Summary 143 / Concepts for Review 144

#### Chapter 8 / DETERMINING NATIONAL OUTPUT 145

The Consumption Function 146 / The Saving Function 148 / The Permanent-Income and Life-Cycle Hypotheses 150 / The Investment Decision 151 / Test Yourself 154 / The Equilibrium Level of Net National Product 154 / Aggregate Flows of Income and Expenditure 155 / Why NNP Must Equal Intended Spending: Three Cases 157 / Using a

Graph to Determine Equilibrium NNP 158 / Reconciling Aggregate Demand and Supply Curves with Income-Expenditure Analysis 159 / Leakages and Injections: Another Approach 160 / Example 8.1 Asking "What If" Questions 160 / Leakages and Injections: A Numerical Example 161 / Leakages and Injections: A Graphical View 163 / Actual Savings Equals Actual Investment 163 / Usefulness of the Leakage-Injection Approach 164 / Test Yourself 165 / Summary 165 / Concepts for Review 166

# Chapter 9 / MULTIPLIER ANALYSIS AND CHANGES IN OUTPUT 167

The Volatility of Investment 167 / Effects of Changes in Intended Investment 169 / Example 9.1 Investment and a Great Crash 170 / The Multiplier 171 / Test Yourself 173 / Determinants of Consumption: Nonincome Factors 173 / Shifts in the Consumption and Saving Functions 175 / Effects of Shifts in the Consumption Function 176 / A Painful Episode, Viewed 45 Years Later 177 / Induced Investment 178 / The Paradox of Thrift 179 / Example 9.2 Shifting Both the Saving and Investment Functions 180 / Test Yourself 180 / Summary 181 / Concepts for Review 181 / Appendix: Using Basic Algebra to Derive the Multiplier 181

# Chapter 10 / FISCAL POLICY AND NATIONAL OUTPUT 184

Government Expenditure and Net National Product 184 / Taxation and Net National Product 187 / How Government Expenditure and Taxes Affect NNP: A Tabular Illustration 190 / Recessionary and Inflationary Gaps 192 / The Nature and Objectives of Fiscal Policy 193 / Makers of Fiscal Policy 194 / Example 10.1 Fiscal Policy, Deficits, and Surpluses 194 / THE COUNCIL OF ECONOMIC ADVISERS 195 / Automatic Stabilizers 196 / Test Yourself 197 / The Tools of Discretionary Fiscal Policy 197 / Fiscal Policy: Four Case Studies 199 / Deficit and Surplus Financing 201 / How Economists View Budget Deficits 203 / The High-Employment Budget 207 / Effects of How a Deficit Is Financed, or How a Surplus Is Used 208 / Example 10.2 Interpreting Budget Deficits 209 / Recent American Experience with Fiscal Policy 209 / ECONOMIC ISSUES OF THE 1990s: THE ENORMOUS FEDERAL BUDGET DEFICITS 211 / Test Yourself 213 / Summary 213 / Concepts for Review 214 / Appendix: The Effect of a Change in Government Expenditure (An Algebraic Treatment) 214

# Chapter 11 / FOREIGN TRADE, BUSINESS FLUCTUATIONS, AND ECONOMIC FORECASTING 216

The Effects of Net Exports on Net National Product 216 / The International Transmission of Business Fluctuations 218 / The Effects of Changes in Exchange Rates 219 / Fiscal Policy in an Open Economy 223 / Business Fluctuations and Variation in Investment Spending 224 / The Acceleration Principle 225 / The Interaction Between the Acceleration Principle and the Multiplier 227 / Example 11.1 Investment at the Howe Company 227 / Inventory Cycles 228 / Variation in Government Spending 229 / The Political Business Cycle 229 / Monetary Factors 230 / Can Business Fluctuations Be Avoided? 231 / Test Yourself 232 / Can Business Fluctuations Be Forecasted? 232 / Leading Indicators 233 / Simple Aggregate Models 234 / Econometric Models 236 / Econometric Forecasts: The Track Record 238 / Example 11.2 How Good Were Chairman Greenspan's Forecasts? 240 / Test Yourself 241 / Summary 242 / Concepts for Review 242

# PART THREE MONEY, BANKING, AND STABILIZATION POLICY

#### Chapter 12 / MONEY AND THE ECONOMY 243

What Is Money? 243 / The Money Supply, Narrowly Defined 244 / The Money Supply, Broadly Defined 247 / The Value of Money 247 / Inflation and the Quantity of Money 249 / Unemployment and the Quantity of Money 249 / Determinants of the Quantity of Money 250 / The Demand for Money 250 / Example 12.1 Empirical Evidence Regarding the Demand for Money 252 / Test Yourself 253 / Changes in the Money Supply and National Output 253 / The Monetarists 256 / The Velocity of Money 258 / The Equation of Exchange 258 / The Crude Quantity Theory of Money and Prices 259 / A More Sophisticated Version of the Quantity Theory 261 / The Importance of Money 263 / Test Yourself 264 / Summary 264 / Concepts for Review 265

#### Chapter 13 / THE BANKING SYSTEM AND THE QUANTITY OF MONEY 266

The Federal Reserve System 266 / Functions of the Federal Reserve 268 / Commercial Banks in the United States 268 / How Banks Operate 271 / The Balance Sheet of an Individual Bank 272 / Fractional–Reserve Banking 273 / The Safety of the Banks 274 / Two Ways Banks Cannot Create Money 276 / Test Yourself 279 / How Banks Can Create Money 280 / The Effect of Excess Reserves: A General Proposition 284 / The Effect of a Decrease in Reserves 285 / Currency Withdrawals 287 / Example 13.1 Currency Holdings of the Public 288 / Excess Reserves 289 / Test Yourself 289 / Summary 290 / Concepts for Review 290

#### Chapter 14 / MONETARY POLICY 291

The Aims of Monetary Policy 291 / The Central Role of Bank Reserves 292 / Makers of Monetary Policy 293 / The Federal Reserve Banks: Their Consolidated Balance Sheet 294 / Open Market Operations 295 / Changes in Legal Reserve Requirements 297 / Changes in the Discount Rate 299 / Example 14.1 Monetary Policy and the Aggregate Demand Curve 300 / Test Yourself 300 / When Is Monetary Policy Tight or Easy? 301 / Should the Fed Pay More Attention to Interest Rates or the Money Supply? 302 / The Saturday Night Special: A Case Study 303 / Example 14.2 How Quickly Does Monetary Policy Work? 305 / Monetary Policy in the United States 305 / Problems in Formulating Monetary Policy 307 / IS THERE AN INDEPENDENT FEDERAL RESERVE? SHOULD THERE BE? 308 / How Well Has the Fed Performed? 309 / Should the Fed Be Governed by a Rule? 310 / Test Yourself 311 / Summary 311 / Concepts for Review 312

#### Chapter 15 / CONTROVERSIES OVER STABILIZATION POLICY 313

Monetarists versus Keynesians: The Historical Background 313 / Causes of Business Fluctuations: The Opposing Views 314 / Stability of the Economy: The Opposing Views 315 / Aggregate Demand and Supply Curves: The Opposing Views 315 / The Controversy Over a Monetary Rule 316 / Example 15.1 What Caused the Great Depression? 317 / The Current State of the Keynesian-Monetarist Debate 318 / The Shape of the Aggregate Supply Curve 319 / Implications of the Hybrid View 321 / ECONOMIC ISSUES OF THE 1990s: WHAT'S BECOME OF THE RELATIONSHIP BETWEEN THE MONEY SUPPLY AND GNP 322 / Test Yourself 324 / Rational

Expectations: Another Element of the Current Debate 324 / Supply-Side Economics Enters the Fray 326 / Test Yourself 329 / Summary 329 / Concepts for Review 330

#### Chapter 16 / INFLATION AND ANTI-INFLATIONARY MEASURES 331

Demand-Pull Inflation 331 / Cost-Push Inflation 332 / Example 16.1 The Fed and Cost-Push Inflation 333 / Difficulties in Distinguishing Cost-Push from Demand-Pull Inflation 334 / The Phillips Curve 334 / The Instability of the Phillips Curve 337 / The Long-Run Phillips Curve 338 / The Phillips Curve under Rational Expectations 340 / The Rising Natural Rate of Unemployment 342 / Test Yourself 342 / Wage and Price Controls 343 / Incomes Policies 344 / Example 16.2 Effects of the 1971–74 Control Program 345 / Tax-Based Incomes Policies 347 / Test Yourself 348 / Summary 348 / Concepts for Review 349

#### PART FOUR INTERNATIONAL ECONOMICS

#### Chapter 17 / INTERNATIONAL TRADE 351

America's Foreign Trade 351 / Advantages of Trade 352 / Comparative Advantage 353 / The Terms of Trade 355 / Incomplete Specialization 356 / International Trade and Individual Markets 356 / Economies of Scale and Learning 358 / Innovation and International Trade 359 / Multinational Firms 360 / Test Yourself 361 / Tariffs and Quotas 361 / Arguments for Tariffs and Quotas 364 / RECENT DEVELOPMENTS IN ECONOMICS: STRATEGIC TRADE POLICY 366 / Tariffs in the United States 368 / Example 17.1 The Effects of a Tariff on Shoes 370 / Test Yourself 371 / Summary 372 / Concepts for Review 372

#### Chapter 18 / EXCHANGE RATES AND THE BALANCE OF PAYMENTS 373

International Transactions and Exchange Rates 373 / Exchange Rates under the Gold Standard 374 / The Foreign Exchange Market 375 / Fixed Exchange Rates 378 / Balance-of-Payments Deficits and Surpluses 380 / The Balance-of-Payments Accounts 381 / Test Yourself 385 / Exchange Rates: Pre—World War II Experience 386 / The Gold Exchange Standard 386 / U.S. Balance-of-Payments Deficits 1950–72 387 / Attempts to Eliminate the Deficits in the Early 1970s 388 / Demise of the Bretton Woods System 389 / Fixed versus Flexible Exchange Rates 389 / How Well Have Floating Exchange Rates Worked? 390 / The International Monetary Fund 391 / International Lending 392 / Example 18.1 Return to the Gold Standard? 393 / ECONOMIC ISSUES OF THE 1990s: AMERICA'S CHRONIC TRADE DEFICIT 394 / Test Yourself 397 / Summary 397 / Concepts for Review 398

# PART FIVE CONSUMER BEHAVIOR AND BUSINESS DECISION MAKING

#### Chapter 19 / MARKET DEMAND AND PRICE ELASTICITY 399

Market Demand Curves 399 / Example 19.1 Speculation and the Demand Curve 402 / The Price Elasticity of Demand 402 / Determinants

of the Price Elasticity of Demand 405 / Price Elasticity and Total Money Expenditure 406 / HENRY FORD AND THE PRICE ELASTICITY OF DEMAND FOR AUTOS 407 / Test Yourself 408 / The Farm Problem and the Price Elasticity of Demand 409 / Industry and Firm Demand Curves 411 / Income Elasticity of Demand 411 / Example 19.2 The Demand for "Suds" 412 / Cross Elasticity of Demand 413 / Test Yourself 414 / Summary 414 / Concepts for Review 414

#### Chapter 20 / GETTING BEHIND THE DEMAND CURVE: CONSUMER BEHAVIOR 415

Consumer Expenditures 415 / Aggregate Data for the United States 416 / A Model of Consumer Behavior 417 / The Equilibrium Market Basket 419 / Example 20.1 The Diamond-Water Paradox 422 / Test Yourself 423 / The Consumer's Demand Curve 423 / Why Do Individual Demand Curves Generally Slope Downward? 425 / Example 20.2 Meat and Consumer's Surplus 426 / Deriving the Market Demand Curve 427 / RECENT DEVELOPMENTS IN ECONOMICS: THE ROLE OF TIME IN CONSUMPTION DECISIONS 428 / Test Yourself 429 / Summary 430 / Concepts for Review 430 / Appendix: How Indifference Curves Can Be Used to Analyze Consumer Behavior 430

#### Chapter 21 / OPTIMAL INPUT DECISIONS BY BUSINESS FIRMS 437

The Production Function Revisited 437 / Types of Inputs 439 / The Short Run and the Long Run 439 / Average Product of an Input 440 / Marginal Product of an Input 440 / The Law of Diminishing Marginal Returns 442 / Example 21.1 Production Theory in the Milking Shed 442 / Test Yourself 443 / The Optimal Input Decision 443 / HOW TO MAKE MONEY IN REAL ESTATE BY LOGIC ALONE 445 / A More General Proof of the Rule 446 / Producing Kansas Corn: A Case Study 447 / Test Yourself 448 / Summary 448 / Concepts for Review 448

#### Chapter 22 / COST ANALYSIS 449

What Are Costs? 449 / Short-Run Cost Functions 450 / Average Cost in the Short Run 453 / Marginal Cost in the Short Run 455 / Short-Run Cost Functions of a Crude-Oil Pipeline: A Case Study 457 / Example 22.1 The Costs of a Dairy Farm 458 / Test Yourself 459 / Long-Run Cost Functions 460 / Returns to Scale 462 / Measurement and Application of Cost Functions 463 / ECONOMIC ISSUES OF THE 1990s: CAN AMERICAN FIRMS COMPETE? 466 / Test Yourself 468 / Summary 468 / Concepts for Review 468

## PART SIX MARKET STRUCTURE AND ANTITRUST POLICY

#### Chapter 23 / PERFECT COMPETITION 469

Market Structure and Economic Performance 469 / Perfect Competition 471 / The Output of the Firm 472 / The Market Supply Curve 478 / Deriving the Market Supply Curve 478 / Example 23.1 How Much Mercury Do We Have? 479 / Test Yourself 481 / The Price Elasticity of Supply 481 / Price and Output: The Market Period 482 / Price and Output: The Short Run 483 / RECENT DEVELOPMENTS IN ECONOMICS: LABORATORY EXPERIMENTATION 484 / Price and Output: The Long Run 485 / The Allocation of Resources under Perfect Competition: A More Detailed View 487 / Example 23.2 How Many Apples Should Be Pro-

duced? 488 / Bituminous Coal: A Case Study 489 / Test Yourself 490 / Summary 490 / Concepts for Review 491 / Appendix: Constant, Increasing, and Decreasing Cost Industries 491

# Chapter 24 / MONOPOLY AND ITS REGULATION 494

Causes of Monopoly 494 / Demand Curve and Marginal Revenue under Monopoly 496 / Price and Output: The Short Run 498 / Price and Output: The Long Run 501 / Perfect Competition and Monopoly: A Comparison 502 / Example 24.1 Another Newspaper for Haverhill? 504 / Test Yourself 504 / The Case against Monopoly 505 / Public Regulation of Monopoly 507 / Does Regulation Affect Prices? 508 / Example 24.2 Price Discrimination in Dentistry 509 / Increase of Prices and Reduction of Competition by Regulators 510 / Effects of Regulation on Efficiency 511 / Test Yourself 513 / Summary 513 / Concepts for Review 514 / Appendix: Marginal Cost Pricing 514

#### Chapter 25 / MONOPOLISTIC COMPETITION AND OLIGOPOLY 517

Monopolistic Competition and Oligopoly: Their Major Characteristics 517 / Monopolistic Competition 518 / Price and Output under Monopolistic Competition 519 / Comparisons with Perfect Competition and Monopoly 521 / Retailing: A Case Study 522 / Oligopoly 523 / Mergers and Oligopoly 524 / Oligopoly Behavior and the Stability of Prices 525 / Test Yourself 526 / Collusion and Cartels 526 / Price and Output of a Cartel 527 / Barriers to Collusion 528 / Example 25.1 The End of the Cozy Milk Oligopoly in New York 529 / Cheating, Game Theory, and "Tit for Tat" 530 / Example 25.2 How Other Sources of Oil Influence OPEC's Price 531 / Price Leadership 532 / Cost-Plus Pricing 532 / Nonprice Competition 533 / RECENT DEVELOPMENTS IN ECONOMICS: CONTESTABLE MARKETS 535 / Comparison of Oligopoly with Perfect Competition 536 / Test Yourself 537 / Summary 537 / Concepts for Review 538 / Appendix: The Theory of Games 538

## Chapter 26 / INDUSTRIAL ORGANIZATION AND ANTITRUST POLICY 541

The Case against Oligopoly and Monopolistic Competition 541 / The Defense of Monopoly Power 542 / Monopoly Power, Big Business, and Technological Change 543 / How Much Monopoly Power Is Optimal? 544 / Concentration of Economic Power 545 / Industrial Concentration in the United States 545 / The Antitrust Laws 546 / The Role of the Courts 547 / The Role of the Justice Department 548 / Landmark Decisions Since World War II 549 / Antitrust in the Reagan Years 550 / Test Yourself 551 / Standards for Antitrust Policy 551 / The Effectiveness of Antitrust Policy 552 / The Pabst Case: Antitrust in Action 553 / ECONOMIC ISSUES OF THE 1990s: CORPORATE TAKEOVERS: BOON OR PROBLEM? 554 / The Patent System 556 / Other Policies Designed to Restrict Competition 557 / Example 26.1 Resale Price Maintenance and Cosmetics 558 / Test Yourself 559 / Summary 559 / Concepts for Review 560

## PART SEVEN GOVERNMENT AND THE ECONOMY

#### Chapter 27 / THE ECONOMIC ROLE OF THE GOVERNMENT 561

Limitations of the Price System 561 / What Functions Should the Government Perform? 562 / Establishing "Rules of the Game" 563 / Main-

taining a Competitive Framework 564 / Redistribution of Income 565 / Stabilizing the Economy 565 / Providing Public Goods 566 / SEMATECH: SHOULD THE GOVERNMENT SUBSIDIZE SEMICONDUCTORS? 567 / Externalities 567 / Example 27.1 The Economics of Urban Blight 569 / Size and Nature of Government Activities 569 / Changes in View of Government Responsibilities 571 / THE SAGA OF THE B-1 BOMBER 572 / What the Federal, State, and Local Governments Receive in Taxes 573 / ECONOMIC ISSUES OF THE 1990s: THE AIDS EPIDEMIC AND WHO WILL PAY 574 / Test Yourself 576 / The Role of Government in American Agriculture 576 / The Farm Problem 577 / Government Aid to Agriculture 579 / Price Supports and Surplus Controls 580 / Farm Policy Since 1973 581 / Evaluation of Government Farm Programs 583 / Test Yourself 584 / Summary 585 / Concepts for Review 585

# Chapter 28 / GOVERNMENT EXPENDITURES, TAXATION, AND THE PUBLIC DEBT 586

Government Expenditures 586 / Scope and Efficiency of Government Activities 589 / The Theory of Public Choice 589 / Taxation and Government Revenues 591 / Example 28.1 Brown-Lung Disease and Benefit-Cost Analysis 592 / Principles of Taxation 593 / The Personal Income Tax 594 / The Corporate Income Tax 595 / Test Yourself 595 / The Property Tax and the Sales Tax 596 / Tax Incidence 597 / Supply-Side Economics 599 / Example 28.2 Should Income or Consumption Be Taxed? 600 / Government Debt 601 / Alternative Ways of Financing Government Expenditures and Their Effects 603 / THE DEPARTMENT OF THE TREASURY AND THE NATIONAL DEBT 604 / Test Yourself 605 / Summary 605 / Concepts for Review 606

#### Chapter 29 / GOVERNMENT AND THE ENVIRONMENT 607

Our Environmental Problems 607 / The Important Role of External Diseconomies 608 / Public Policy Toward Pollution 609 / Pollution-Control Programs in the United States 613 / How Clean Should the Environment Be? 615 / Example 29.1 How to Reduce the Costs of Cleaning Up 615 / Recent Directions of Environmental Policy 617 / Test Yourself 618 / Summary 618 / Concepts for Review 619

## PART EIGHT DISTRIBUTION OF INCOME

#### Chapter 30 / DETERMINANTS OF WAGES 621

The Labor Force and the Price of Labor 621 / THe Equilibrium Wage and Employment under Perfect Competition 623 / The Market Demand Curve for Labor 624 / The Market Supply Curve for Labor 625 / Equilibrium Price and Quantity of Labor 626 / Wage Differentials 627 / Example 30.1 Millionaire Geologists 628 / RECENT DEVELOPMENTS IN ECONOMICS: LABOR MARKET SIGNALING 629 / The All-Volunteer Army: A Case Study 630 / Monopsony 631 / Test Yourself 633 / Labor Unions 633 / The American Labor Movement 634 / Postwar Developments 636 / Recent Trends in Union Membership 638 / Example 30.2 Can a Union Increase Employment? 639 / How Unions Increase Wages 640 / Collective Bargaining 641 / The Pros and Cons of Big Unions 642 / Test Yourself 643 / Summary 643 / Concepts for Review 644

#### Chapter 31 / INTEREST, RENT, AND PROFITS 645

The Nature of Interest 645 / The Determination of the Interest Rate 646 / Functions of the Interest Rate 649 / Capital Budgeting 650 / Capital and Roundabout Methods of Production 651 / Why Capital? 652 / Capitalization of Assets 653 / Effects on an Asset's Value of Changes in the Rate of Return on Other Investments 653 / The Present Value of Future Income 654 / WHAT DOES THAT DREAM HOUSE REALLY COST? 655 / Test Yourself 656 / Rent: Nature and Significance 657 / Profits 659 / Example 31.1 Exodus of Scientists and Engineers from Teaching 659 / The Functions of Profits 661 / Profits and Losses: Mainsprings of a Capitalistic System 662 / The Functional Distribution of Income 662 / Test Yourself 663 / Summary 664 / Concepts for Review 664

#### Chapter 32 / INCOME INEQUALITY AND POVERTY 665

How Much Inequality of Income? 665 / Why Inequality? 666 / A Measure of Income Inequality 667 / Trends in Income Inequality 668 / Effects of the Tax Structure on Income Inequality 668 / Example 32.1 Economic Effects of Illegal Aliens 669 / Income Inequality: The Pros and Cons 670 / EQUAL PAY FOR WORK OF "COMPARABLE WORTH" 671 / What Is Poverty? 674 / Incidence and Causes of Poverty 675 / Test Yourself 676 / Social Insurance 677 / Antipoverty Programs 679 / ECONOMIC ISSUES OF THE 1990s: SHOULD THE MINIMUM WAGE GO UP? 681 / Example 32.2 Why Not Cure Poverty with a Check? 683 / Test Yourself 684 / Summary 684 / Concepts for Review 685

# PART NINE ECONOMIC DEVELOPMENT AND ALTERNATIVE ECONOMIC SYSTEMS

#### Chapter 33 / ECONOMIC GROWTH 687

What Is Economic Growth? 687 / Economic Growth and the Production Possibilities Curve 688 / The Aggregate Production Function 689 / The Law of Diminishing Marginal Returns 689 / Thomas Malthus and Population Growth 691 / Example 33.1 "Birth Rights" and Population Control 692 / Test Yourself 695 / David Ricardo and Capital Formation 695 / Capital Formation and Economic Growth 698 / The Role of Human Capital 700 / The Role of Technological Change 700 / Determinants of Technological Change 702 / ECONOMIC ISSUES OF THE 1990s: HAS THE UNITED STATES LOST ITS TECHNOLOGICAL EDGE? 704 / Entrepreneurship and the Social Environment 706 / IF THE ROBOTS ARE COMING, CAN MASS UNEMPLOYMENT BE FAR BEHIND? 707 / The Gap Between Actual and Potential Output 708 / Test Yourself 709 / Summary 709 / Concepts for Review 710

#### Chapter 34 / THE LESS DEVELOPED COUNTRIES 711

Less Developed Countries: Definitions and Characteristics 711 / Barriers to Development and the Need for Capital Formation 714 / The Population Explosion 716 / Technology: A Crucial Factor 717 / Entrepreneurship and Social Institutions 719 / Lack of Natural Resources 719 / The Role of Government 720 / Example 34.1 Economic Development with an Unlimited Labor Supply 721 / Test Yourself 722 / Balanced Growth