ECONOMICS

Nineteenth Edition

PAUL A. SAMUELSON

Institute Professor Emeritus Massachusetts Institute of Technology

WILLIAM D. NORDHAUS

Sterling Professor of Economics Yale University



Contents in Brief

A Centrist Proclamation xvi Preface xviii For the Student: Economics and the Internet xxiii

PART ONE	BASIC CONCEPTS
Chapter 1	The Central Concepts of Economics 3
Appendix 1	How to Read Graphs 18
Chapter 2	The Modern Mixed Economy 25
Chapter 3	Basic Elements of Supply and Demand 45
PART TWO	MICROECONOMICS: SUPPLY, DEMAND, AND PRODUCT MARKETS 63
Chapter 4	Supply and Demand: Elasticity and Applications 65
Chapter 5	Demand and Consumer Behavior 84
Appendix 5	Geometrical Analysis of Consumer Equilibrium 101
Chapter 6	Production and Business Organization 107
Chapter 7	Analysis of Costs 126
Appendix 7	Production, Cost Theory, and Decisions of the Firm 144
Chapter 8	Analysis of Perfectly Competitive Markets 149
Chapter 9	Imperfect Competition and Monopoly 169
Chapter 10	Competition among the Few 187
Chapter 11	Economics of Uncertainty 211
PART THREE	FACTOR MARKETS: LABOR, LAND, AND CAPITAL 227
Chapter 12	How Markets Determine Incomes 229
Chapter 13	The Labor Market 248
Chapter 14	Land, Natural Resources, and the Environment 267
Chapter 15	Capital, Interest, and Profits 283

Contents

A Centrist Proclamation xvi	Chapter 2
Preface xviii	The Modern Mixed Economy 2
For the Student: Economics and the Internet xxiii PART ONE	A. The Market Mechanism Not Chaos, but Economic Order How Markets Solve the Three Economic Problems The Dual Monarchy A Picture of Prices and Markets The Invisible Hand
BASIC CONCEPTS I	B. Trade, Money, and Capital 3 Trade, Specialization, and Division of Labor 31 ⊕
Chapter I	Money: The Lubricant of Exchange 33 Capital 33 Capital and Private Property ■
The Central Concepts of Economics 3	
A. Why Study Economics? 3	C. The Visible Hand of Government 3 Efficiency 35 © Imperfect Competition © Externalities © Public Goods © Equity 38 ©
For Whom the Bell Tolls Scarcity and Efficiency: The Twin Themes of Economics Scarcity and Efficiency Microeconomics and Macroeconomics The Logic of Economics Scarcity and Efficiency Microeconomics and Macroeconomics The Logic of Economics Scarcity and Macroeconomics Macroeco	Macroeconomic Growth and Stability 39 The Rise of the Welfare State 40 Conservative Backlash The Mixed Economy Today
B. The Three Problems of Economic Organization Market, Command, and Mixed Economies 8	Summary 41 © Concepts for Review 42 © Further Reading and Internet Websites 43 © Questions for Discussion 43 ©
C. Society's Technological Possibilities Inputs and Outputs 9 The Production-Possibility Frontier 9 Applying the PPF to Society's	Chapter 3 Basic Elements of Supply and Demand 4
Choices Opportunity Costs Efficiency Summary I5 Concepts for Review I5 Further Reading and Internet Websites I6 Questions for	A. The Demand Schedule The Demand Curve 47 Market Demand Forces behind the Demand Curve Shifts in Demand
Discussion 16 ⊗	B. The Supply Schedule 5 The Supply Curve 51 Forces behind the Supply Curve Shifts in Supply ●
Appendix I	• • •
How to Read Graphs The Production-Possibility Frontier 18 ● Production-Possibility Graph ● A Smooth Curve ● Slopes and Lines ● Slope of a Curved Line ● Slope as the Marginal Value ● Shifts of and Movement along Curves ● Some Special Graphs ●	C. Equilibrium of Supply and Demand Equilibrium with Supply and Demand Curves 54 • Effect of a Shift in Supply or Demand • Interpreting Changes in Price and Quantity • Supply, Demand, and Immigration • Rationing by Prices 59 •
Summary to Appendix 23 © Concepts for Review 24 © Questions for Discussion 24 ©	Summary 60 © Concepts for Review 61 © Further Reading and Internet Websites 61 © Questions for Discussion 61 ©

viii

PART TWO MICROECONOMICS: SUPPLY, DEMAND, AND PRODUCT MARKETS 63

Chapter 4	
Supply and Demand: Elasticity and Applications	65

A. Price Elasticity of Demand and Supply

Price Elasticity of Demand 65 ◆ Calculating Elasticities ◆
Price Elasticity in Diagrams ◆ A Shortcut for Calculating
Elasticities ◆ The Algebra of Elasticities ◆ Elasticity Is
Not the Same as Slope ◆ Elasticity and Revenue 70 ◆
The Paradox of the Bumper Harvest ◆ Price Elasticity of
Supply 72 ◆

B. Applications to Major Economic Issues
The Economics of Agriculture 73 ● Long-Run Relative
Decline of Farming ● Impact of a Tax on Price and
Quantity 75 ● Minimum Floors and Maximum
Ceilings 77 ● The Minimum-Wage Controversy ●
Energy Price Controls ● Rationing by the Queue, by
Coupons, or by the Purse? ●

Summary 81 ● Concepts for Review 82 ● Further Reading and Internet Websites 82 ● Questions for Discussion 82 ●

Chapter 5 g Demand and Consumer Behavior 84

Choice and Utility Theory 84 ● Marginal Utility and the Law of Diminishing Marginal Utility ● A Numerical Example ● Derivation of Demand Curves 87 ● The Equimarginal Principle ● Why Demand Curves Slope Downward ● Leisure and the Optimal Allocation of Time ● Analytical Developments in Utility Theory ● An Alternative Approach: Substitution Effect and Income Effect 89 ● Substitution Effect ● Income Effect ● From Individual to Market Demand 91 ● Demand Shifts ● Substitutes and Complements ● Empirical Estimates of Price and Income Elasticities ● The Economics of Addiction 94 ● The Paradox of Value 95 ● Consumer Surplus ●

Summary 98 ● Concepts for Review 99 ● Further Reading and Internet Websites 99 ● Questions for Discussion 99 ●

Appendix 5

Geometrical Analysis of Consumer Equilibrium 101

The Indifference Curve 101 ● Law of Substitution ● The Indifference Map ● Budget Line or Budget Constraint 103 ● The Equilibrium Position of Tangency 104 ● Changes in Income and Price 104 ● Income Change ● Single Price Change ● Deriving the Demand Curve 105 ●

Summary to Appendix 106 ● Concepts for Review 106 ● Questions for Discussion 106 ●

Chapter 6 Production and Business Organization

107

A. Theory of Production and Marginal Products

Basic Concepts 107 ● The Production Function ● Total,
Average, and Marginal Product ● The Law of Diminishing
Returns ● Returns to Scale 111 ● Short Run and Long
Run 112 ● Technological Change 113 ● Productivity and
the Aggregate Production Function 116 ● Productivity ●
Productivity Growth from Economies of Scale and Scope ●
Empirical Estimates of the Aggregate Production Function ●

B. Business Organizations

118

The Nature of the Firm 118 ● Big, Small, and Infinitesimal Businesses 119 ● The Individual Proprietorship ● The Partnership ● The Corporation ● Ownership, Control, and Executive Compensation ●

Summary 123 ● Concepts for Review 124 ● Further Reading and Internet Websites 124 ● Questions for Discussion 124 ●

Chapter 7 Analysis of Costs

126

A. Economic Analysis of Costs

126

Total Cost: Fixed and Variable 126 ● Fixed Cost ● Variable Cost ● Definition of Marginal Cost 127 ● Average Cost 129 ● Average or Unit Cost ● Average Fixed and Variable Costs ● The Relation between Average Cost and Marginal Cost ● The Link between Production and Costs 132 ● Diminishing Returns and U-Shaped Cost Curves ● Choice of Inputs by the Firm 134 ● Marginal Products and the Least-Cost Rule ●

B. Economic Costs and Business Accounting The Income Statement, or Statement of Profit and Loss 135 ● The Balance Sheet 136 ● Accounting Conventions ● Financial Finagling ●

135

Discussion 166 •

C. Opportunity Costs Opportunity Cost and Markets 140 ●	Chapter 9 Imperfect Competition and Monopoly
Summary 141 ● Concepts for Review 142 ● Further Reading and Internet Websites 142 ● Questions for Discussion 142 ●	
Appendix 7 Production, Cost Theory, and Decisions	Imperfections 173 ● Costs and Market Imperfection ● Barriers to Entry ●
of the Firm A Numerical Production Function 144 • The Law of Diminishing Marginal Product 144 • Least-Cost Factor Combination for a Given Output 145 • Equal-Product Curves • Equal-Cost Lines • Equal-Product and Equal-Cost Contours: Least-Cost Tangency • Least-Cost Conditions •	B. Monopoly Behavior The Concept of Marginal Revenue 177 ● Price, Quantity, and Total Revenue ● Marginal Revenue and Price ● Elasticity and Marginal Revenue ● Profit-Maximizing Conditions 180 ● Monopoly Equilibrium in Graphs ● Perfect Competition as a Polar Case of Imperfect Competition ● The Marginal Principle: Let Bygones Be Bygones 183 ● Loss Aversion and the Marginal Principle
Summary to Appendix 147 ● Concepts for Review 148 ● Questions for Discussion 148 ●	Summary 184 ● Concepts for Review 185 ● Further Reading and Internet Websites 185 ● Questions for Discussion 186 ●
Chapter 8	Discussion for •
	49
A. Supply Behavior of the Competitive Firm Behavior of a Competitive Firm 149 • Profit	Chapter 10 49 Competition among the Few 18
Maximization ● Perfect Competition ● Competitive Supply Where Marginal Cost Equals Price ● Total Cost and the Shutdown Condition ●	A. Behavior of Imperfect Competitors Measures of Market Power ● The Nature of Imperfect Competition 189 ● Theories of Imperfect Competition 189 ● Collusive Oligopoly ● Monopolistic
B. Supply Behavior in Competitive Industries Summing All Firms' Supply Curves to Get Market Supply 154 ● Short-Run and Long-Run Equilibrium 155 The Long Run for a Competitive Industry ●	Competition ● Rivalry among the Few ● Price Discrimination 193 ●
	Thinking about Price Setting • Basic Concepts 196 • Alternative Strategies • Games, Games, Everywhere
and Diminishing Returns ● Fixed Supply and Economi Rent ● Backward-Bending Supply Curve ● Shifts in Supply ●	
D. Efficiency and Equity of Competitive Markets Evaluating the Market Mechanism 160 ● The Concept of Efficiency ● Efficiency of Competitive Equilibrium ● Equilibrium with Many Consumers and Markets ● Marginal Cost as a Benchmark for Efficiency ● Qualifications 163 ● Market Failures ● Two Cheers for the Market, but Not Three ●	on Imperfect Competition ● Regulating Economic Activity 201 ● Why Regulate Industry? ● Containing Market Power ● Remedying Information Failures ● Antitrust Law and Economics 203 ● The Framework Statutes ● Basic Issues in Antitrust Law: Conduct and
Summary 165 ● Concepts for Review 166 ● Further Reading and Internet Websites 166 ● Questions for	Summary 207 ● Concepts for Review 208 ● Further Reading and Internet Websites 208 ● Questions for

Discussion 209 •

X

Chapter I I Economics of Uncertainty	Summary 244 ● Concepts for Review 245 ● Further Reading and Internet Websites 245 ● Questions for Discussion 245 ●
A. Economics of Risk and Uncertainty	211
Speculation: Shipping Assets or Goods Across Space at Time 212 ● Arbitrage and Geographic Price Patterns Speculation and Price Behavior over Time ● Sheddin	• The Labor Market . 24
Risks through Hedging ● The Economic Impacts of Speculation ● Risk and Uncertainty 215 ●	A. Fundamentals of Wage Determination 246 The General Wage Level 248 ● Demand for Labor 249 ●
B. The Economics of Insurance Capital Markets and Risk Sharing ● Market Failures in Information 217 ● Moral Hazard and Adverse Selection ● Social Insurance 218 ● C. Health Care: The Problem That Won't Go Away	Marginal Productivity Differences ● International Comparisons ● The Supply of Labor 251 ● Determinants of Supply ● Empirical Findings ● Wage Differentials 253 ● Differences in Jobs: Compensating Wage Differentials ● Differences in People: Labor Quality ● Differences in People: The "Rents" of Unique Individuals ● Segmented Markets and Noncompeting Groups ●
The Economics of Medical Care 219 ● Special Econo Features of Health Care ● Health Care as a Social	B. Labor Market Issues and Policies 25
Insurance Program ● Rationing Health Care ●	The Economics of Labor Unions 257 ● Government and Collective Bargaining ● How Unions Raise
D. Innovation and Information Schumpeter's Radical Innovation ● The Economics of Information ● Intellectual Property Rights ● The Dilemma of the Internet ●	Wages 258 → Theoretical Indeterminacy of Collective Bargaining • Effects on Wages and Employment 259 • Has Unionization Raised Wages? • Unions and Classical Unemployment • Discrimination 260 • Economic
Summary 224 ● Concepts for Review 225 ● Furth Reading and Internet Websites 225 ● Questions for Discussion 225 ●	
PART THREE FACTOR MARKETS: LABOR, LAND, AND CAPITAL 227	Discrimination 264 ● Uneven Progress ● Summary 264 ● Concepts for Review 265 ● Further Reading and Internet Websites 265 ● Questions for Discussion 266 ●
Chapter 12 How Markets Determine Incomes	Chapter 14 229 Land, Natural Resources, and the Environment 26
Tiow Harkets Determine meetings	Land, Natural Resources, and the Environment 26
 A. Income and Wealth Income 230 ● Factor Incomes vs. Personal Incomes Role of Government ● Wealth 231 ● 	A. The Economics of Natural Resources 26 Resource Categories 268 • Fixed Land and Rents 269 • Rent as Return to Fixed Factors • Taxing Land •
B. Input Pricing by Marginal Productivity The Nature of Factor Demands 233 ● Demands for Factors Are Derived Demands ● Demands for Factors Are Interdependent ● Distribution Theory and Marginal Revenue Product 235 ● Marginal Revenue Product ● The Demand for Factors of Production 236 ● Factor Demands for Profit-Maximizing Firms ● Marginal Revenue Product and the Demand for Factors ● Supp of Factors of Production 238 ● Determination of Factors	of Pollution ● Policies to Correct Externalities 275 ● Government Programs ● Private Approaches ● Climate Change: To Slow or Not to Slow 278 ● Quarrel and Pollute, or Reason and Compute? ●
Prices by Supply and Demand 239 • The Distribution National Income 241 • Marginal-Productivity Theory Many Inputs • An Invisible Hand for Incomes? 243 •	of Summary 280 ● Concepts for Review 281 ● Further with Reading and Internet Websites 281 ● Questions for

323

323

330

339

Chapter 15	
Capital, Interest, and Profits	283

283

303

309

312

A. Basic Concepts of Interest and Capital

What Is Capital? Prices and Rentals on Investments Capital vs. Financial Assets The Rate of Return on Investments Rates of Return and Interest Rates 284 Rate of Return on Capital Financial Assets and Interest Rates The Present Value of Assets 285 Present Value for Perpetuities General Formula for Present Value Acting to Maximize Present Value The Mysterious World of Interest Rates Rates Real vs. Nominal Interest Rates

B. The Theory of Capital, Profits, and Interest
Basic Capital Theory 291 © Roundaboutness ©
Diminishing Returns and the Demand for Capital ©
Determination of Interest and the Return on Capital ©
Graphical Analysis of the Return on Capital © Profits as
a Return to Capital 295 © Reported Profit Statistics ©
Determinants of Profits © Empirical Evidence on

Summary 297 ⊕ Concepts for Review 298 ⊕ Further Reading and Internet Websites 298 ⊕ Questions for Discussion 299 ⊕

PART FOUR APPLICATIONS OF ECONOMIC PRINCIPLES 301

Chapter 16	
Government Taxation and Expenditure	

A. Government Control of the Economy

Returns to Labor and Capital @

B. Government Expenditures

Fiscal Federalism 309 ● Federal Expenditures ● State and Local Expenditures ● Cultural and Technological Impacts 311 ●

C. Economic Aspects of Taxation

Principles of Taxation 312 ● Benefit vs. Ability-to-Pay Principles ● Horizontal and Vertical Equity ● Pragmatic Summary 320 ⊚ Concepts for Review 321 ⊚ Further Reading and Internet Websites 321 ⊚ Questions for Discussion 321 ⊖

Chapter 17 Efficiency vs. Equality: The Big Tradeoff

A. The Sources of Inequality

The Distribution of Income and Wealth 324 How to Measure Inequality among Income Classes Distribution of Wealth Inequality across Countries
Poverty in America 327 Who Are the Poor? Who Are the Rich? Trends in Inequality

B. Antipoverty Policies

The Rise of the Welfare State The Costs of Redistribution 331 Redistribution Costs in Diagrams How Big Are the Leaks? Adding Up the Leaks Antipoverty Policies: Programs and Criticisms 333 Income-Security Programs Incentive Problems of the Poor The Battle over Welfare Reform 334 Two Views of Poverty Income-Support Programs in the United States Today The Earned-Income Tax Credit The 1996 U.S. Welfare Reform Economic Policy for the 21st Century 336

Summary 336 © Concepts for Review 337 © Further Reading and Internet Websites 337 © Questions for Discussion 338 ©

Chapter 18	
International Trade	339

A. The Nature of International Trade

International vs. Domestic Trade Trends in Foreign Trade The Reasons for International Trade in Goods and Services 340 Diversity in Natural Resources Differences in Tastes Differences in Costs

B. Comparative Advantage among Nations The Principle of Comparative Advantage 341 Uncommon Sense Ricardo's Analysis of Comparative Advantage The Economic Gains from Trade Trade ■

Outsourcing as Another Kind of Trade • Graphical Analysis of Comparative Advantage 344 • America without Trade • Opening Up to Trade • Extensions to Many Commodities and Countries 347 • Many Commodities • Many Countries • Triangular and Multilateral Trade • Qualifications and Conclusions 348 •

C. Protectionism

349

368

385

Supply-and-Demand Analysis of Trade and Tariffs 350 ● Free Trade vs. No Trade ● Trade Barriers ● The Economic Gosts of Tariffs ● The Economics of Protectionism 355 ● Noneconomic Goals ● Unsound Grounds for Tariffs ● Potentially Valid Arguments for Protection ● Other Barriers to Trade ● Multilateral Trade Negotiations 359 ● Negotiating Free Trade ● Appraisal ●

Summary 361 ● Concepts for Review 362 ● Further Reading and Internet Websites 362 ● Questions for Discussion 363 ●

PART FIVE MACROECONOMICS: ECONOMIC GROWTH AND BUSINESS CYCLES 365

Chapter 19	
Overview of Macroeconomics	

A. Key Concepts of Macroeconomics
The Birth of Macroeconomics 368 ● Objectives and
Instruments of Macroeconomics 370 ● Measuring
Economic Success ● The Tools of Macroeconomic
Policy ● International Linkages 376 ●

B. Aggregate Supply and Demand Inside the Macroeconomy: Aggregate Supply and Demand 377 ● Definitions of Aggregate Supply and Demand ● Aggregate Supply and Demand Curves ● Macroeconomic History: 1900–2008 380 ● The Role of

Summary 382 ● Concepts for Review 383 ● Further Reading and Internet Websites 383 ● Questions for Discussion 384 ●

Appendix 19
Macroeconomic Data for the United States

Macroeconomic Policy •

Chapter 20

Measuring Economic Activity

386

Gross Domestic Product: The Yardstick of an Economy's Performance 386 • Two Measures of National Product: Goods Flow and Earnings Flow • National Accounts Derived from Business Accounts • The Problem of "Double Counting" • Details of the National Accounts 391 • Real vs. Nominal GDP: "Deflating" GDP by a Price Index • Consumption • Investment and Capital Formation • Government Purchases • Net Exports • Gross Domestic Product, Net Domestic Product, and Gross National Product • GDP and NDP: A Look at Numbers • From GDP to Disposable Income • Saving and Investment • Beyond the National Accounts 400 • Price Indexes • Accounting Assessment 404 •

Summary 405 ● Concepts for Review 406 ● Further Reading and Internet Websites 406 ● Questions for Discussion 406 ●

Chapter 21

Consumption and Investment

408

A. Consumption and Saving

408

Budgetary Expenditure Patterns ◆ Consumption,
Income, and Saving 411 ◆ The Consumption Function ◆
The Saving Function ◆ The Marginal Propensity
to Consume ◆ The Marginal Propensity to Save ◆
Brief Review of Definitions ◆ National Consumption
Behavior 416 ◆ Determinants of Consumption ◆ The
National Consumption Function ◆ Alternative Measures
of Saving ◆

B. Investment

420

Determinants of Investment 420 ● Revenues ● Costs ● Expectations ● The Investment Demand Curve 421 ● Shifts in the Investment Demand Curve ● On to the Theory of Aggregate Demand 424 ● ;

Summary 424 ● Concepts for Review 425 ● Further Reading and Internet Websites 425 ● Questions for Discussion 426 ●

Chapter 22

Business Cycles and Aggregate Demand

428

A. What Are Business Cycles?

429

Features of the Business Cycle 429 ● Business-Cycle Theories 431 ● Financial Crises and Business Cycles ●

B. Aggregate Demand and Business Cycles The Theory of Aggregate Demand 432 The The	Chapter 24
Downward-Sloping Aggregate Demand Curve 433 ●	Monetary Policy and the Economy 475
Shifts in Aggregate Demand • Business Cycles and	A. Central Banking and the Federal Reserve System 475
Aggregate Demand ● Is the Business Cycle Avoidable? ●	The Essential Elements of Central Banking 476 • History
	Structure • Goals of Central Banks • Functions of
C. The Multiplier Model 437	the Federal Reserve • Central-Bank Independence •
Output Determined by Total Expenditures 437 •	How the Central Bank Determines Short-Term Interest
Reminder on the Meaning of Equilibrium • The	Rates 478 ● Overview of the Fed's Operations ●
Adjustment Mechanism • A Numerical Analysis • The	Balance Sheet of the Federal Reserve Banks • Operating
Multiplier 440 ● The Multiplier Model Compared with	Procedures • How the Federal Reserve Affects
the AS-AD Model ●	Bank Reserves 479 ● Open-Market Operations ●
	Discount-Window Policy: A Backstop for Open-Market
D. Fiscal Policy in the Multiplier Model 441	Operations ● The Role of Reserve Requirements ●
How Government Fiscal Policies Affect Output 442 ●	Determination of the Federal Funds Rate
Impact of Taxation on Aggregate Demand ● A	Determination of the redend rand rand
Numerical Example ● Fiscal-Policy Multipliers 446 ●	B. The Monetary Transmission Mechanism 484
Impact of Taxes • The Multiplier Model and the	A Summary Statement • The Effect of Changes in
Business Cycle ● The Multiplier Model in Perspective ●	Monetary Policy on Output ● The Challenge of
,	a Liquidity Trap • Monetary Policy in the AS-AD
Summary 449 ● Concepts for Review 450 ● Further	Framework • Monetary Policy in the Long Run •
Reading and Internet Websites 451 ● Questions for	, , ,
Discussion 451	C. Applications of Monetary Economics 489
***	Monetarism and the Quantity Theory of Money and
	Prices 489 ● The Roots of Monetarism ● The Equation
Chantou 22	of Exchange and the Velocity of Money • The Quantity
Chapter 23 Money and the Financial System 453	Theory of Prices ● Modern Monetarism ● The
,	Monetarist Platform: Constant Money Growth ● The
Overview of the Monetary Transmission Mechanism •	Monetarist Experiment ● The Decline of Monetarism ●
A. The Modern Financial System 454	Monetary Policy in an Open Economy 493 ●
· •	International Linkages • Monetary Transmission in
The Role of the Financial System ● The Functions of the Financial System ● The Flow of Funds ● A Menu of	the Open Economy 494 • From Aggregate Demand to
Financial Assets 456 • Review of Interest Rates •	Aggregate Supply 495 ●
Financial Assets 450 • Review of Interest Rates •	
B. The Special Case of Money 458	Summary 495 ● Concepts for Review 496 ● Further
The Evolution of Money 458 The History of Money ■	Reading and Internet Websites 497 ● Questions for
Components of the Money Supply • The Demand	Discussion 497 ●
for Money 461 ● Money's Functions ● The Costs of	
Holding Money Two Sources of Money Demand ■	PART SIX
Troiding Money • Two Sources of Money Demand •	GROWTH, DEVELOPMENT,
C. Banks and the Supply of Money 463	AND THE GLOBAL ECONOMY
How Banks Developed from Goldsmith Establishments •	499
Fractional-Reserve Banking • Final System	477
Equilibrium • A Modern Banking System •	
Equilibritain • 11 Modern Banking bystem •	Chanton 25
D. The Stock Market 465	Chapter 25
Risk and Return on Different Assets • Bubbles and	Economic Growth The Leng Town Significance of Crowth
Crashes ● Efficient Markets and the Random Walk ●	The Long-Term Significance of Growth ●
Personal Financial Strategies 470	A. Theories of Economic Growth 50
1 Cisonal Financial ou acegies 470	The Four Wheels of Growth 502 • Human Resources •
Summary 471 & Concents for Review 472 & Further	Natural Resources • Capital • Technological Change
Summary 471 ● Concepts for Review 472 ● Further Reading and Internet Websites 473 ● Questions for	and Innovation • Theories of Economic Growth 506 •
Discussion 473 • Questions for	
DISCUSSION 473 ▼	The Classical Dynamics of Smith and Malthus ●

545

564

Economic Growth with Capital Accumulation: The	
Neoclassical Growth Model • Geometrical Analysis	s
of the Neoclassical Model • The Central Role of	
Technological Change • Technological Change as	an
Economic Output ●	

B. The Patterns of Growth in the United States

The Facts of Economic Growth ● Relationship of the
Seven Trends to Economic-Growth Theories ● The
Sources of Economic Growth ● Recent Trends in

Productivity 516 ● The Productivity Rebound ●

Summary 518 ● Concepts for Review 519 ● Further Reading and Internet Websites 519 ● Questions for Discussion 520 ●

Chapter 26 The Challenge of Economic Development

A. Population Growth and Development 521
Malthus and the Dismal Science 521 ● Limits to Growth
and Neo-Malthusianism ●

B. Economic Growth in Poor Countries

Aspects of a Developing Country 524 ●

Human Development ● The Four Elements

in Development 525 ● Human Resources ● Natural

Resources ● Capital ● Technological Change and

Innovations ● Vicious Cycles to Virtuous Circles ●

Strategies of Economic Development 531 ● The

Backwardness Hypothesis ● Industrialization

vs. Agriculture ● State vs. Market ● Growth and

Outward Orientation ● Summary Judgment ●

C. Alternative Models for Development

A Bouquet of "ISMS" 533 ● The Central Dilemma:

Market vs. Command ● The Asian Models 534 ● Asian

Dragons ● The Rise of China ● Socialism 535 ● The

Failed Model: Centrally Planned Economies 536 ●

Baleful Prophesies ● From Textbooks to Tactics: Soviet
Style Command Economy ● From Marx to Market ● A

Final Note of Cautious Optimism ●

Summary 539 ● Concepts for Review 540 ● Further Reading and Internet Websites 540 ● Questions for Discussion 541 ●

Chapter 27
Exchange Rates and the International
Financial System 543
Trends in Foreign Trade 544 ●

A. The Balance of International Payments

Balance-of-Payments Accounts 545 ● Debits and
Credits ● Details of the Balance of Payments ●

B. The Determination of Foreign Exchange Rates 548

Foreign Exchange Rates 548 ● The Foreign Exchange

Market 549 ● Effects of Changes in Trade ● Exchange

Rates and the Balance of Payments ● Purchasing-Power

Parity and Exchange Rates ●

C. The International Monetary System

Fixed Exchange Rates: The Classical Gold

Standard 554 ● Hume's Adjustment Mechanism ●

Updating Hume to Modern Macroeconomics ●

International Monetary Institutions After World

War II 557 ● The International Monetary Fund ●

The World Bank ● The Bretton Woods System ●

Intervention ● Flexible Exchange Rates 559 ● Today's

Hybrid System 560 ● Concluding Thoughts ●

Summary 560 ● Concepts for Review 561 ● Further Reading and Internet Websites 562 ● Questions for Discussion 562 ●

Chapter 28 Open-Economy Macroeconomics

A. Foreign Trade and Economic Activity

521

524

Economy Macroeconomics 564

Net Exports and Output in the Open Economy ●
Determinants of Trade and Net Exports ● Short-Run
Impact of Trade on GDP 566 ● The Marginal Propensity
to Import and the Spending Line ● The Open-Economy
Multiplier ● Trade and Finance for the United States
Under Flexible Exchange Rates 569 ● The Monetary
Transmission Mechanism in an Open Economy 571 ●

B. Interdependence in the Global Economy 574
Economic Growth in the Open Economy 574 ◆ Saying and Investment in the Open Economy 574 ◆ Determination of Saying and Investment at Full Employment ◆ Promoting Growth in the Open Economy 578 ◆

C. International Economic Issues Competitiveness and Productivity 580 ● "The Deindustrialization of America" ● Trends in Productivity ● The European Monetary Union 581 ● Toward a Common Currency: The Euro ● Costs and Benefits of Monetary Union ● Final Assessment 583 ●

Summary 583 ● Concepts for Review 585 ● Further Reading and Internet Websites 585 ● Questions for Discussion 585 ●

PART SEVEN UNEMPLOYMENT, INFLATION, AND ECONOMIC POLICY 587

Chapter 29	
Unemployment and the Foundations	•
of Aggregate Supply	589

A. The Foundations of Aggregate Supply 589 Determinants of Aggregate Supply 590 ◎ Potential Output ◎ Input Costs ◎ Aggregate Supply in the Short Run and Long Run 593 ◎ Sticky Wages and Prices and the Upward-Sloping AS Curve ◎

B. Unemployment 595 © Impact of Unemployment 595 © Economic Impact © Social Impact © Okun's Law 597 © Economic Interpretation of Unemployment 597 © Equilibrium Unemployment © Disequilibrium Unemployment © Microeconomic Foundations of Inflexible Wages © Labor Market Issues 601 © Who Are the Unemployed? © Duration of Unemployment © Sources of Joblessness © Unemployment by Age ©

Summary 606 ⊕ Concepts for Review 607 ⊕ Further Reading and Internet Websites 607 ⊕ Questions for Discussion 607 ⊕

Chapter 30		
Inflation		609

A. Definition and Impact of Inflation What Is Inflation? 609 The History of Inflation Three Strains of Inflation Anticipated vs. Unanticipated Inflation The Economic Impacts of Inflation 614 Impacts on Income and Wealth Distribution Impacts on Economic Efficiency Macroeconomic Impacts What Is the Optimal Rate of Inflation?

B. Modern Inflation Theory Prices in the AS-AD Framework 617 © Expected Inflation © Demand-Pull Inflation © Cost-Push Inflation and "Stagflation" © Expectations and Inflation © Price Levels vs. Inflation © The Phillips Curve 620 © ShortRun Phillips Curve © The Nonaccelerating Inflation Rate of Unemployment © From Short Run to Long Run © The Vertical Long-Run Phillips Curve © Quantitative Estimates © Doubts about the NAIRU © Review ©

C. Dilemmas of Anti-Inflation Policy

624

How Long Is the Long Run? How Much Does It Cost to Reduce Inflation? Credibility and Inflation Policies to Lower Unemployment

Summary 627 ⊙ Concepts for Review 628 ⊙ Further Reading and Internet Websites 628 ⊙ Questions for Discussion 629 ⊙

Chapter 3 I Frontiers of Macroeconomics 630

A. The Economic Consequences of the Government Debt

630

Fiscal History 631 © Government Budget Policy 632 © Actual, Structural, and Cyclical Budgets © The Economics of the Debt and Deficits 633 © The Short-Run Impact of Government Deficits 633 © Short Run vs. Long Run © Fiscal Policy and the Multiplier Model © Government Debt and Economic Growth 634 © Historical Trends © External vs. Internal Debt © Efficiency Losses from Taxation © Displacement of Capital © Debt and Growth ©

B. Advances in Modern Macroeconomics 638 Classical Macroeconomics and Say's Law 639 ⊕ Say's Law of Markets ⊕ Modern Classical Macroeconomics 639 ⊕ Rational Expectations ⊕ Real Business Cycles ⊕ The Ricardian View of Fiscal Policy ⊕ Efficiency Wages ⊕ Supply-Side Economics ⊕ Policy Implications 642 ⊕ Policy Ineffectiveness ⊕ The Desirability of Fixed Rules ⊕ A New Synthesis? ⊕

C. Stabilizing the Economy

643

The Interaction of Monetary and Fiscal Policies 643 © Demand Management © The Fiscal-Monetary Mix © Rules vs. Discretion 646 © Budget Constraints on Legislatures? © Monetary Rules for the Fed? ©

D. Economic Growth and Human Welfare 648 The Spirit of Enterprise 649 © Fostering Technological Advance ◎

Summary 650 ⊚ Concepts for Review 652 ⊚ Further Reading and Internet Websites 652 ⊚ Questions for Discussion 652 ⊚

Glossary of Terms 654 Index 677