

Economics

FIFTH EDITION



N. GREGORY MANKIW
HARVARD UNIVERSITY

 HOCHSCHULE
WECHTENSTEIN

/V SOUTH-WESTERN
1* CENGAGE Learning-

Table of Contents

To the Student vli



PART I INTRODUCTION 1

CHAPTER 1 TEN PRINCIPLES OF ECONOMICS 3

How People Make Decisions 4

Principle 2: The Owl of Something Is Worth Yfni G
Up or Out » f>

3: Kstinnnl People Think at the Margin 6

4: People Respond to Incentives 7

How Firms Interact &

Principle 5: You Can't Make Everyone Geller Oil f

Principle 6: Markets Are Usually a Good Way to

Organize Economic Activity 8

IN THE NEWS Incentive Pay 9

Principle 7: Governments Can Sometimes Improve
Market Outcomes 10

FY1 Adam Smith and the Invisible Hand 11

the Economy » i Whole World 12

Principle 8: A Country's Standard of Living Depends
on Its Ability to Produce Goods and Services 12

Principle 9: Prices Rise When the Quantity Demanded
Exceeds Supply 13

THE NEWS Why You Should Study Economics 14

Principle 10: Society Faces a Short-Run
Tradeoff Between Inflation and Unemployment 14

15

Why Read This Book 16

Summary 17

Key Concepts 17

(or Review i&

and Applications 18

CHAPTER 2 THINKING LIKE AN ECONOMIST 21

The Economist as a Scientist 22

The Scientific Method: Observation, Theory, and
More Observation 22

The Realist Assumptions 23

Economic Models 23

Our First Model- The Circular-Flow Diagram 24

Our Second Model. The Production

Frontier 25

FY1 Who Studies Economics? 29

The Economist as a Policy Advisor 30

Positive versus Normative Analysis 30

Economists in Wellington 31

IN THE NEWS Firms Hire Economists 32

Why Economists' Advice Is Always

Why Ennioinifti DIMjyee 34
 DifferpTicm in Scientific Judgnwntn M
 Differeruw. m Values 34
 versus Reality 35

Going 3*
 IN THE NEWS Environmental Economics 37

Summary 3S
 Key Concept* W
 Questions fur R*vi#w 3B
 Fritbtfrn* md Applications 38

APPtNUI* (iraphing: A Brief Review 40
 Graph* d' a Single Voruibk 40
 Graphs nt Two VaxubUi; The Codrdlrul* Sratem 41
 C.ure<f In the Coordinate System 42
 Slnpe M
 Cause and Effect 46

CHAPTER 3
 INTERDEPENDENCE AND THE GAINS FROM
 TRADE 49

A Faiable fnr t*f Mnd>m Economy 50
 Production t'c*=sll*ilitcs 50
 52

Cumparativ* Advantage: Tlie Driving Force of
 Specialization ^4
 Absolute Ad*-uii4g* >t
 ily Cuvt and Comparative Ad 54
 Advantage and Trade SS
 Hie Price of the Tradf 56

Applications uf Cumparativf AftvajiE^me 57
 FYI The L*gj*cy of Adam Smith and David Ricarda 57
 Should Tttftt Wnnd* Mc.hr IfisOwu Liwn? 58
 Should the Vnrt+d S Q I H Trade with OUtr

THE NEWS Th* Changing F K § Q(International
 Trad. S9

60
 Key Concepts 40
 Questions for Rrvl#w 61



PART II
HOW MARKETS WORK 63

CHAPTER 4
 THE MARKET FORCES OF SUPPLY
 AND DEMAND 65

and Competition 66
 IsaNWkvt? 6b
 WhatlsC'ompctitiun?

Utnuind 67
 I he Cteoiand Cu/ve: Tnc Relationship Price
 and Quantity DtiimndH t>7
 Market Dcti\aml vtiitup Individual Demand 69
 Shifts in the Demand Curvr M
 CASE STUDV Two W*y> to Reduce the Qujniily of
 Smoking Demanded 71

Supply 73
 Th* Supply Cuivc; The Rfl*OnnBh<p between
 flnd QuanQiy Supplied 71
 Market Supply versus Individual Supply 73
 Shifts in the Supply Curve 74

Supply And Demand Tog*ther 77
 Lquilibrium 77
 Ihrec Slops to Analyzing Changes in Equilibrium 79

How PriE» AMnrat* Resources 83
 IN THE NEWS Th* Htlilum Market 83
 IN THE NEWS Prk* tncrtaus
 04

Summary 85
 Key Concepts 86

Problems and Application* 87

CHAPTER 5
ELASTICITY AND ITS APPLICATION

The Elasticity of Demand W
 The Price Elasticity of Demand and Us
 Computing the Price Elasticity of Demand
 The Midpoint Method: A Better Way to
 Measure Percentage Change and Elasticity 91
 The Variety of Demand Curves 12
 Interpreting and the Price Elasticity of Demand
 Elasticity and Total Revenue Along a Linear
 Demand Curve 15
 Other Elasticities SR
 The Elasticity of Supply and Demand 16

The Elasticity of Supply 99
 The Price Elasticity of Supply and Determinants 99
 Computing the Price Elasticity of Supply 100
 The Variety of Supply Curves 100

Three Applications of Supply, Demand/ and
 Elasticity 112
 ("An Good MPWR for Farming He Bad Mews for
 the World Oil Price to Keep the Price of Oil High? 115
 Drug Interdiction and the
 Drug-Related Crime? 106

10S
 Summary IDS

Problems and Applications 110

CHAPTER 6
SUPPLY, DEMAND, AND GOVERNMENT
POLICIES 113

Controls on Prices 114
 How Price Ceilings Affect Market Outcomes 114
 CASE STUDY Lines at the Gas Pump 11*

CASE STUDY Rent Control in the Short Run and the
 Long Run 117
 How Price Controls Affect Market Outcomes 118
 CASE STUDY The Minimum Wage 119
 Evaluating Price Controls 121
 IN THE NEWS President Chavez versus the
 Market 122

123
 How Taxation on Sellers Affects Market Outcomes 124
 How Taxation on Buyers Affects Market Outcomes 125
 CASE STUDY Can Congress Distribute the
 Burden of a Payroll Tax? 127
 Elasticity and Tax Incidence 127
 CASE STUDY Who Pays the Luxury Tax? 130
 131
 Problems and Applications 132



PART III
MARKETS AND WELFARE 135

CHAPTER 7
CONSUMERS, PRODUCERS, AND THE EFFICIENCY
OF MARKETS 137

Consumer Surplus 138
 Using the Demand Curve to Measure Consumer
 Surplus 139

How a Higher Price Raises Consumer Surplus 140
 What Does Consumer Surplus Measure? 141

Producer Surplus 143
 Cost and the Willingness to Sell 143
 Using the Supply Curve to Measure Producer Surplus 144
 How a Higher Price Raises Producer Surplus 145

Market Efficiency 147
 The Benevolent Social Planner 147
 Evaluating Market Equilibrium 148
 CASE STUDY Should There Be a Market in
 Organs? 150
 IN THE NEWS Ticket Scalping 151

Conclusion: Market Efficiency and Market Failure 152
 IN THE NEWS The Miracle of the Market 153

Summary 154
 Key Concepts 155
 Questions for Review 156
 Problems and Applications 157

CHAPTER 8
APPLICATION: THE COSTS OF TAXATION 159

The Deadweight Loss of Taxation 159
 How a Tax Affects Market Participants 161
 Deadweight Losses and the Gains from
 Trade 162

The Determinants of the Deadweight Loss 164
 CASE STUDY The Deadweight Loss Debate 166

Deadweight Loss and Tax Revenue as Tax Rates Vary 167
 FYI Henry George and the Land Tax 169
 CASE STUDY The Laffer Curve and Supply-Side
 Economics 169
 IN THE NEWS On the Way to France 170

Summary 172

Key Concepts 173
 Questions for Review 173
 and Applications 173

CHAPTER 9
APPLICATION: INTERNATIONAL TRADE 177

Determinants of Trade 173
 The Equilibrium without Trade 176
 The World Price and Comparative Advantage 179
 The Winners and Losers from Trade 180
 Tariffs and Losses of an Exporting Country 181
 Tariffs and Gains of an Importing Country 191

The Leverage for Trade Policy 185
 FYI Import Quotas: Another Way to Restrict
 Trade 185
 Other Benefits of International Trade 186
 IN THE NEWS Should the Winners from Free Trade
 Compensate the Losers? 187

The Arguments for Free Trade 183
 The Protection Argument 184
 IN THE NEWS Offshore Outsourcing 189
 The National-Security Argument 190
 The Infant Industry Argument 191
 The Unholy Trinity Argument 191
 The Trade Protection-as-a-Bargaining-Chip Argument 191
 IN THE NEWS Second Thoughts about Free
 Trade? 192
 CASE STUDY Trade Agreements and the World Trade
 Organization 192

Conclusion 154
 -Summary 155
 Key Concepts 196
 Questions for Review 196
 Problems and Applications 196



PART IV THE ECONOMICS OF THE PUBLIC SECTOR 201

CHAPTER 10 EXTERNALITIES 203

and Market Inefficiency 201

Welfare Economics. A Recap 205

Negative Externalities 205

Positive Externalities 207

CASE STUDY Technology Spillovers, Industrial Policy,
and Patent Protection 208

Public Policies toward Externalities 209

Command-and-Control Policies: Regulation 209

Market-Based Policy 1, Current Tax and Subsidy

Subsidies 210

CASE STUDY Why Is Gasoline Taxed So Heavily? 211

Market-Based Policy 2. The Pigou Follies: Pollution Permits 212

Objective Functions and the Economic Analysis of Pollution 214

Private Solutions to Externalities 215

The Property Rights Approach to Externalities 215

IN THE NEWS The Case for Taxing Carbon 216

The Coase Theorem 217

Why Private Solutions Do Not Always Work 218

Conclusion 219

Summary 220

Key Concepts 221

Questions for Review 221

Problems and Applications 221

CHAPTER 11 PUBLIC GOODS AND COMMON RESOURCES

The Different Kinds of Goods 226

Public Goods 227

The Free-Rider Problem 228

Some Important Characteristics 228

CASE STUDY Are Lighthouses Public Goods? 330

The Difficult Job of Cost-Benefit Analysis 230

CASE STUDY How Much Is a Life Worth? 331

Common Resources 232

The Tragedy of the Commons 232

Some Important Characteristics

IN THE NEWS The Bloomberg Plan 234

CASE STUDY Why the Cows? Not the Fish? 236

The Importance of Property Rights 237

Summary 237

238

for Review 255

Problems and Applications 238

CHAPTER 12 THE DESIGN OF THE TAX SYSTEM 241

A Financial Overview of the U.S. Government 242

The Federal Government 242

CASE STUDY The Fiscal Challenge Ahead 246

State and Local Government 248

and Efficiency 249

Deadweight Losses 250

CASE STUDY Should Income or Consumption Be
Taxed? 251

Administrative Burden 251

Marginal Tax Rates versus Average Tax Rates 252

Lump-Sum Taxes 253

Taxes and Equity 253

The Benefit Principle 254

The Ability-to-Pay Principle 254

CASE STUDY How the Tax Burden Is Distributed 25S
 Tax Incidence and Tax Equilibrium 256
 CASE STUDY Who Pays the Corporate Income
 Tax? 257
 IN THE NEWS Questions and Answers about Tax
 Reform 25B

Conclusion: The Trade-off between Equity

Summary 261
 Key Concepts 260
 Questions for Review 261
 Problems and Applications 261



**PART V
 FIRM BEHAVIOR AND
 THE ORGANIZATION OF
 INDUSTRY 265**

**CHAPTER 13
 THE COSTS OF PRODUCTION 267**

What Are Costs? 268
 Total Revenue, Total Cost, and Profit 26S
 Explicit and Opportunity Costs 268
 The Real Cost of Capital and Opportunity Cost
 Economic Profit versus Accounting Profit
 Average and Marginal Costs 271
 The Production Function 271
 From the Production Function to the
 Cost Curve 273

The Various Measures of Cost 274
 Average and Variable Costs 274
 Marginal and Average Total Cost 275
 Cost Curves and the Production Function 276
 Typical Cost Curves 273
 Costs in the Short Run and in the Long Run 2S0
 The Relationship between Short-Run and Long-Run
 Total Cost 277
 and Diseconomies of Scale 281
 Five Lessons from a Pin Factory 282
 Conclusion 2S2
 Summary 2R3
 Key Concept* 284
 (Questions for Review 284
 Problems and Applications 284

**CHAPTER 14
 FIRMS IN COMPETITIVE MARKETS 28V**

What Is a Competitive Market? 200
 The Intensity of Competition 290
 The Revenue of a Competitive Firm 290
 Profit Maximization and the Competitive Firm's Supply
 Curve 2M
 A Simple Example of Profit Maximization 292
 The Marginal-Cost Curve and the Firm's Supply
 Decision 2S3
 The Firm's Short-Run Decision to Shut Down 2y^
 Sunk Costs and Oilier Sunk Costs 2%
 CASE STUDY Near-Empty Restaurants and Qf-SejKon
 Miniature Golf 297
 The Firm's Long-Run Decision to Enter or Exit a
 Market 298
 Measuring Profit in Our Graph for the Competitive
 Firm 299
 The Supply Curve in a Competitive Market 100
 The Short Run: Market Supply with a Fixed Number
 of Firms 301
 The Long Run: Market Supply with Entry and Exit 301
 Why Do Competitive Firms Stay in Business If They
 Make Zero Profit? 301
 A Shift in Demand in the Short Run and Long Run 303

Why the Long-Run Supply Curve Might Slope Upward	304
Conclusion: Behind the Supply Curve	306
Summary	307
Key Concept*	307
Questions for Review	W7
Principles and Applications	305
CHAPTER 15	
MONOPOLY	311
Why Monopolies Arise	
Monopoly Resources	
Government-Created	313
Natural Monopolies	314
How Monopolies Make Profit and Pricing Decisions	315
Monopoly versus Competition	315
A Monopoly's Revenue	316
Profit Maximization	319
FYI Why a Monopoly Does Not Have a Supply Curve	320
A Monopoly's Profit	320
CASE STUDY Monopoly Drugs versus Generic Drugs	321
The Welfare Costs of Monopolies	322
The Deadweight Loss	323
The Monopoly's Profit: A Social Cost?	325
Price Discrimination	326
A Fair Deal about Pricing	326
The Moral of the Little Story	327
Advantages of Price Discrimination	328
of Price Discrimination	329
IN THE NEWS Tickets and Other Schemes?	330
Public Policy toward Monopolies	H2
Increasing Competition with Antitrust Legislation	333
IN THE NEWS Airline Mergers	333
IN THE NEWS Public Transport and Privatization	334
Public Ownership	336
Doing Nothing	336
Conclusion: The Prevalence of Monopolies	337
Summary	338
Key Concepts	339
Questions (or Review)	334
Problems and Applications	340
CHAPTER 16	
MONOPOLISTIC COMPETITION	345
Between Monopoly and Perfect Competition	346
Competition with Differentiated Products	348
The Monopolistically Competitive Firm	348
The Long-Run Equilibrium	348
Monopolistic versus Perfect Competition	351
Monopolistic Competition and the Welfare of Society	352
IN THE NEWS Insufficient Variety as a Market Failure	354
Advertising	355
The Difference between Advertising and the Price of Eyeglasses	356
CASE STUDY Advertising and the Price of Eyeglasses	357
Advertising as a Signal of Quality	357
FYI Galbraith vs. Hayek	358
Names	359
Conclusion	361
Summary	U?
Key Concepts	362
Questions (or Review)	363
Problems and Applications	
CHAPTER 17	
OLIGOPOLY	365
Markets with Only a Few Sellers	366
A Duopoly Example	366
Competition, Monopolies, and Cartels	366
The Equilibrium for an Oligopoly	368
How the Size of an Oligopoly Affects the Market Outcome	369

The Economics of Cooperation 37D
 The Prisoners' Dilemma 370
 Oligopolies and the Prisoners' Dilemma 172
 CASE STUDY OPEC and the World Oil Market 373
 Other Examples of the Prisoners' Dilemma 373
 The Prisoners' Dilemma and the Welfare of Society 375
 Why People Sometimes Cooperate 376
 CASE STUDY The Prisoners' Dilemma
Tournament 37b
 IN THE NEWS Aumann and Schilling 377

Public Policy toward Unemployment 37s
 The Trade-off between Unemployment and Antitrust Laws 378
CASE STUDY An Illegal Phone Call 379
 Competition over Antitrust Policy 379
 IN THE NEWS Public Price Fixing 380
 IN THE NEWS A Reversal of Policy 382
CASE STUDY The Microsoft Case 383

384
Summary 385
 Key Concepts 385
 Questions for Review 385
 Problems and Applications



PART VI
THE ECONOMICS OF LABOR
MARKETS 389

CHAPTER 18
THE MARKETS FOR THE FACTORS OF
PRODUCTION 391

The Demand for Labor 392

The Competitive Profit-Maximizing Firm 392
 The Production Function and the Marginal Product of Labor 392
 The Value of the Marginal Product and the Demand for Labor 392
 What Causes the Labor Demand Curve to Shift? 397
 FYI Input Demand and Output Supply: Two Sides of the Same Coin 397
FYI *The Luddite Revolt* 39f

The Supply of Labor 399
 The Trade-off between Work and Leisure 399
 What Caused the Labor Supply Curve to Shift? 399

Equilibrium in the Labor Market 400
 Shifts in Labor Supply 400
 IN THE NEWS The Economics of Immigration 402
 Sustaining Labor Supply 403
 CASE STUDY Productivity and Wages 404

The Factors of Production: Land and Capital 403
 Firms Monopsony 406
 Equilibrium in the Markets for Land and Capital
 Input Prices among the Factors of Production 407
 FYI What Is Capital Income? 408
 CASE STUDY The Economics of the Black Death 409

409
Summary 410
 Key Concepts 410
 Questions for Review 410
 Problems and Applications 411

CHAPTER 19
EARNINGS AND DISCRIMINATION 413

Some Determinants of Equilibrium Wages 414
 Compensating Differentials 414
 Human Capital 414
 CASE STUDY The Increasing Value of Skills 415
 Ability, Effort, and Chance 416
 IN THE NEWS The Loss of Manufacturing Jobs 417
 CASE STUDY The Benefits of Beauty 416
 An Alternative View of Education: Signaling 419
 The Stigler Phenomenon 419
 IN THE NEWS The Human Capital of Terrorists 420

Above-equilibrium Wages: Minimum-Wage Unions, and Efficiency Wages	421
The Economics of Immigration	422
Measuring Unemployment Discrimination	432
CASE STUDY Is Emily More Employable than Lakshya?	424
Discrimination by Employer's	421
CASE STUDY Segregated Streetcars and the Profit Motive	425
IN THE NEWS Gender Differences	426
Discrimination by Customers and Coverage	426
CASE STUDY Discrimination in Sports	42B
Conclusion	429
Summary	429
Key Concepts	43U
Questions for Review	430
Formulas and Applications	430
CHAPTER 20	
INCOME INEQUALITY AND POVERTY	433
The Measurement of Inequality	434
US. Income Inequality	434
Internationality around the World	435
High Poverty Rate	437
Problems in Measuring Inequality	438
CASE STUDY Alternative Measures of Inequality	439
Economic Mobility	440
IN THE NEWS What Do We Know of Rising Inequality	441
The Political Philosophy of Redistributing Income	443
Utilitarianism	442
Liberalism	443
Liberalism	444
to Induce Poverty	445
Minimum-Wage? Income	446
Welfare	446
Progressive Income Tax	447
In-Kind and Cash	447
IN THE NEWS Child Labor	448
Antipoverty Programs and Welfare Incentives	

Summary	452
Key Concepts	452
Questions for Review	452
Problems and Applications	453



PART VII

TOPICS FOR FURTHER STUDY 455

CHAPTER 21	
THE THEORY OF CONSUMER CHOICE	457
The Budget Constraint: What the Consumer Can Afford	458
the Consumer Wants	459
Representing Preferences with Indifference Curves	460
Four Properties of Indifference Curves	461
Two Extreme Examples of Indifference Curves	462
Optimization: What the Consumer Chooses	464
The Consumer's Optimal Choices	464
FYI: Utility and Alternative Ways to and Optimization	465
How Changes in Income Affect the Consumer's Choices	466
How Changes in Prices Affect the	
Income and Substitution Effects	468
Deriving the Offer Curve	470
Three Applications	471
Do All Downward-Sloping	472

TABLE OF CONTENTS

CASE STUDY The Search for Gliffen Goods	473
Huiv Do Wages AffwrJ jhorSiiply?	473
CASE STUDY Income Effects on Labor Supply; Historical Trends, Lottery Winners, and the Carnegie Conjecture	476
Huw Do Inters! Ifates Affect Housthold SavingV	477
Cuntliuaion; Do I'ople Really Think Thia Way?	479
Sumnuiy	480
Key Cnnc^pn	480
Qnt^tiuna for Review	480
Problems and Applications	481
CHAPTER 22	
FRONTIERS OF MICROECONOMICS	483
Asymmetric Information	484
Hidden Actions: Prinripals, Agi-iita, and Moral Hazard	484
Hidden Characteristics: Advtr>e Selection and the lament Problem	485
f Yf Corporate Management	486
Signaling 1° Convey Private Information	487
CASE STUDY Gifti as Signals	487
Screening to Indiiifis Iiiftfirmation revelation	488
Asymmetric Iniofmaton and Puhlif 3'olky	488
PrllHcal	
Arrow's Impossibility Theorem	491
I he Median Votr h King	491
E'olfticia^ Arv Pouple TIHI	491
IN THE NEWS Fdrm Policy and Politics	494
People Aren't Always Rational	494
reople Caj-e dbinit Faimptw	497
IN THE NEWS This Is Your Brain on Economics	498
Conclusion	500
Summary	501
Key Concepts	513
yue^Iions foi Re vie iv	501
Problems and Applj^alions	502



PART VIII THE DATA OF MACROECONOMICS 505

CHAPTER 23

MEASURING A NATION'S INCOME 505

The Economy's Incmne and Fvpndihirg 503

The Measurement of Ores PomcstLc Product 510

"GPP lithe Market Value,..." 510

"...of All.../ Mi}

*..., Guuds and Servifp^ - -." 511

"...FroduLed..." 511

"... Within a Country,..." 511

"... In d Given Period

The Ccuipnents at

Consumption 511

FYI Othei Meaiura^ oHncome 513

CoVlytuifent Purcha&es 514

Nut Experts 514

CASE STUDY The Component; of U.S. GDP 515

ReaJ venua Nominal f.fJP 515

A Mumfrical Fxample 516

The GDP Deflator 517

STUDY Real GOP Over Recent History 513

Is GDP a Good Measure of Economic Well-Being? 519
 IN THE NEWS The Underground Economy 520
 CASE STUDY International Differences in GDP and the
 Quality of Life 522

Conclusion 523
 FYI Who Wins at the Olympics? 524

Summary 524
 Key Concepts 525
 Questions for Review 525
 Problems and Applications 525

CHAPTER 24 MEASURING THE COST OF LIVING 529

The Consumer Price Index 530
 How the Consumer Price Index Is Calculated 530
 Problems in Measuring the Cost of Living 532
 FYI What Is in the CPI's Basket? 533
 IN THE NEWS Accounting for Quality Change 534
 The GDP Deflator and the Consumer Price Index 536

Correcting Economic Variables for the Effects of
 Inflation 537
 Dollar Movements from Different Countries 538
 Indexation 538
 Real and Nominal Interest Rates 539
 FYI Mr. Index Goes to Hollywood 539
 CASE STUDY Interest Rates in the U.S. Economy 541

Conclusion 542
 Summary 542
 Key Concepts 543
 Questions for Review 543
 Problems and Applications 543



PART IX THE REAL ECONOMY IN THE LONG RUN 547

CHAPTER 35 PRODUCTION AND GROWTH 549

Economic Growth around the World 590
 FYI A Picture Is Worth a Thousand Statistics 552
 FYI Are You Richer Than the Richest American? 554

Productivity; Its Role and Determinants 554
 Why Productivity Is So Important 554
 How Productivity Is Determined 555
 FYI The Production Function 557
 IN THE NEWS Measuring Capital 558
 CASE STUDY Are Natural Resources a Limit to
 Growth? 558

Economic Growth and Public Policy 560
 Saving and Investment 561
 Diminishing Returns and the Catch-Up Effect 561
 Investment (and Trade) 562

IN THE NEWS Promoting Human Capital 564
 Health and Nutrition 565
 Property Rights and Political Stability 566
 Free Trade 567
 Research and Development 366
 Population Growth 568
 IN THE NEWS Escape from Malthus 570

l; The Importance at Lung-Run Growth 572
Summary 573
Key Concepts 573
Question* Inr Krvjew 573
Problem* and Applications 574

CHAPTER 26
SAVING, INVESTMENT, AND THE FINANCIAL SYSTEM 575

Financial TnaHttutan* in th* U.S. Economy 576
Financial Market* Wfi
Financial internirdiflrieK 578
FYI Key Numbers for Stock Watchm 579
Summing Up SW

Saving and Invctitfrnci in lhc Nattundi Income Accounts 5S1
Some Iiiipurkunt Idenlilies 581
The Meaning t£ So ving and Investment 583

The Market fur Loanable Funds 583
Supply and DtriTUiPi for Loanable Funds 584
Policy 1: Saving intmtiYts 566
Pohcy 2: [nvtattiwnt Incentives 587
IN THE NEWS ln Praise of Misers 533
Potky 3: GuvtriiHitJit Budget Deficits and

CASE STUDY Tha History of U.S. Go^orrnent 591

t'nnrtusian 5V3
Summary 594
Key Conc#p(* W

and Applications MS

CHAPTER 27
THE BASIC TOOL5 OF FINANCE 597

Valuer Mfiguring the Time VJIUC of Money
FYI Th* Magk of Compounding rind l^e Rule
ot70 600

Managing Kink frOO
Risk Avmmn M>1
The M^rkf 15 rnr ln*Luranfe ftOI
P^YI The P*c'uMBTfr>M oi Hnahn Inwjranc* 602

Diversification of Firm-Sp*riflc Ki^k. fi
TheTiade-of(between Klsk and Ketwn

Valuation 606

60fi

TIH; EflititaU Mjrkeu. iivpoiiosis 606
CASE STUDY ftandofn Walks ond Inde^c Funds 60?
IN THE NEWS NfluroHnanw 608
Market brdtiuiulit} 609

bIO

fil 1

Kty Concepts till
Qucsl'oi for Review fill
Pratt!™ and Applicjilioni 611

CHAPTER 28
UNEMPLOYMENT 613

identifying Unemployment 614
Htiw 1H Unempkiymiint Mt^uied? 614
CASE STUDY Labor-Force Parbdpation of M^«n «nd
Womwi in th» U-S- Economy 617
IN THE NEWS Th* Ri» of AduH Mais
Jablesnasa 618
l^H-H the LnempluvPicnl R^ttf Mg^urc Wlijl We
Want Tt To? 619
How 1nng Arp th* llnpmplyed \%^ithuut Work? 621
Why Are There Always Sonu: Ptupk: L'nemployi'd? 62?

Job
Why Some Fncntual UntmpkijniHit Is Intv itdb 633

FYI The Jobs Numb«r 623
Policy and Job Scarth 624
surdntt! b25

IN THE NEWS UnamployniBnt Policy Al Horn*
and Abroad 626

Minimum-Wage LJW* 617

and CnifKtlv* B^T^ining 629

FYI Who Earns ths Minimum Wag«? 629

The (lcwioiiffll "f Uniimn 630

Art Unions Gnnnd nr Had for the Econmny? ft31

The Theory of 632
Worker l leal Hi 6T2
Worker Tiunover 6,12

Worker Quality 633
 Worker Effort* 633
 CASE STUDY Henry Ford and the Very Generous

Conclusion 634

Key Concepts 635
 Questions for Review 636
 Additional Applications 636



PART X MONEY AND PRICES IN THE LONG RUN 639

CHAPTER 29 THE MONETARY SYSTEM 641

The Meaning of Money 642
 The Function* of Money M2
 The Kinds of Money M3
 IN THE NEWS Monetary Lessons from Iraq 644
 Money in the U.S. Economy M5
 FYI Credit Cards, Debit Cards, and Money M7
 CASE STUDY Where Has All the "P" Currency? 647

The Federal Reserve System 648
 The Fed's Organization 648
 The Federal Open Market Committee 648

Banks and the Money Supply 649
 The Simple Case of the Federal Reserve's Balance Sheet 650
 Money Creation with the Fractional-Reserve Banking System 650
 The Money Multiplier 651

The Fed's Tools of Monetary Control 653
 IN THE NEWS The Financial Crisis of 2008 654
 Problems in Controlling the Money Supply 655
 CASE STUDY Bank Runs and the Money Supply 657
 The Federal Funds Rate 637

Conclusion 658
 Summary 659
 Key Concepts 659
 Questions for Review 660
 Additional Applications 660

CHAPTER 30 MONEY GROWTH AND INFLATION 663

The Classical Theory of Inflation 664
 The Level of Prices and the Value of Money 664
 Money Supply, Money Demand, and
 Inflation: Effects of a Monetary Expansion 666
 A Brief History of the Adjustment Process 667
 The Classical Dichotomy and Monetary Neutrality 668
 Velocity and the Quantity Equation 670
 CASE STUDY Money and Prices During Four
 Hyperinflations 672
 The Inflation Tax 673
 The Fisher Effect 674
 IN THE NEWS A Recipe for Economic Disaster 675

The Causes of Inflation 676
 A Fall in Purchasing Power: The Quantity Fallacy 677
 Relative-Price Variability and the Misallocation of
 Resources 679
 Confusion and Misconceptions 681
 A Special Case of Unanticipated Inflation: Arithmetic
 Redistributions of Wealth 662
 CASE STUDY The Washoe Gold and the Free-Silver
 Movement 662

Conclusion 684
 Summary 685
 Key Concepts 685
 Questions for Review 685
 Problems and Applications 686



PART XI THE MACROECONOMICS OF OPEN ECONOMIES 689

CHAPTER 31 OPEN-ECONOMY MACROECONOMICS: BASIC CONCEPTS 691

The International Flows of Goods and Capital 692

The Flow of Goods, Exports, Imports, and Net Exports 692

CASE STUDY The Increasing Openness of the U.S. Economy 693

IN THE NEWS Breaking Up the Chain of Production 694

The Flow of Factor Resources: Net Capital Outflow 696

The Equality of Net Exports and Net Capital Outflow 697

Saving, Investment, and Their Relationship To the International Flow 698

Summing Up 700

CASE STUDY Is the U.S. Trade Deficit a National Problem? 700

The Prices for International Transactions: Real and Nominal Exchange Rates 703

Nominal Exchange Rates 703

FYI The Euro 704

Real Exchange Rate* 704

IN THE NEWS How a Weak Dollar Boosts Exports 706

A Fundamental Theory of Exchange Rate Determination; Purchasing-Power Parity 707

The Basic Logic of Purchasing-Power Parity 710

Implications of Purchasing-Power Parity 710
CASE STUDY The Nominal Exchange Rate During a Hyperinflation 707

Limitations of Purchasing-Power Parity 710

CASE STUDY The Hamburg Standard 711

712

Summary 712

Key Concepts 713

Questions for Review 711

Problems and Applications 713

CHAPTER 32

A MACROECONOMIC THEORY OF THE OPEN ECONOMY 715

Supply and Demand for Foreign-Currency Exchange 716

The Market for Loanable Funds 716

The Market for Foreign-Currency Exchange 718

FYI Purchasing-Power Parity as a Special Case 720

Equilibrium in the Open Economy 721

Net Capital Outflow: The Link between the Two Markets 721

Simultaneous Equilibrium in Two Markets 722

FYI Disentangling Supply and Demand 724

How Policies Affect an Open Economy 724

IN THE NEWS Firms' Investment? 724

IN THE NEWS What Causes the U.S. Trade Deficit? 726

Deficit? 726

Capital Flight 730

CASE STUDY Capital Flows from China 732

733

Summary 734

Key Concepts 734

Questions for Review 714

Problems and Applications 714



PART XII SHORT-RUN ECONOMIC FLUCTUATIONS 737

CHAPTER 33 AGGREGATE DEMAND AND AGGREGATE SUPPLY 739

Three Key Facts about Economic Fluctuations 740
 Fact 1: Economic Fluctuations Are Irregular and Unpredictable 740

Fact 2: Most Macroeconomic Quantities Fluctuate Together 740

Fact 3: As Output Falls, Unemployment Rises 742

Explaining Short-Run Economic Fluctuations 742

The Assumptions of Classical Economics 742

IN THE NEWS Offbeat Indicators 743

The Reality of Short-Run Fluctuations 744

The Model of Aggregate Demand and Aggregate Supply 745

The Aggregate-Demand Curve 746

Why the Aggregate-Demand Curve Slopes Downward 746

Why the Aggregate-Demand Curve Might Shift 749

IN THE NEWS The 2003 Fiscal Stimulus 750

The Long-Run Aggregate-Supply Curve 751

Why the Aggregate-Supply Curve Is Vertical in the Long Run 752

Why the Long-Run Aggregate-Supply Curve Shifts 753

Using the Short-Run Aggregate Supply to Explain Short-Run Growth and Inflation 755

Why the Short-Run Aggregate-Supply Curve Slopes Upward 755

Why the Short-Run Aggregate-Supply Curve Might Shift 760

Two Causes of Long-Run Inflation? 761

The Phillips Curve and the Short-Run Aggregate Demand 762

FYI Monetary Neutrality Revisited 764

CASE STUDY Two Big Shifts in Aggregate Demand

The Great Depression and World War II 765

CASE STUDY The Recession of 2001 767

The Effects of a Shift in Aggregate Supply 767

FYI The Origins of Aggregate Demand and Aggregate

Supply 770

Key Concepts 771

Key Concepts 773

(Applications for the Field 773)

Examples and Applications 773

CHAPTER 34

THE INFLUENCE OF MONETARY AND FISCAL POLICY ON AGGREGATE DEMAND 777

How Monetary Policy Influences Aggregate Demand 778

The Theory of Liquidity Preference 779

The Downward Slope of the Aggregate-Demand Curve 781

FYI Interest Rates in the Long Run and the Short Run 782

Changes in the Money Supply 783

The Role of Interest Rates in Monetary Policy 784

IN THE NEWS The FOMC Explains Its Policy 785

CASE STUDY Why the Fed Watches the Stock Market and Vice Versa 786

How Fiscal Policy Influences Aggregate Demand 787

Changes in Government Purchases 787

The Multiplier Effect 788

A Closer Look at the Spending Multiplier 789

Other Applications of the Multiplier Effect 791

The Crowding-Out Effect 791
Clumps in Taxes 792
FYI How Fiscal Policy Might Affect Supply 793

Policy to Stabilize the Economy 793
Tilt Case for Active Stabilization Policy 794
CASE STUDY Keynesianism in the White House 795
The Case against Active Stabilization Policy 795
Automatic Stabilizers 797

Conclusion 797
Summary 796
Key Concepts 798
Questions for Review 799
Problems and Applications 797

CHAPTER 35
THE SHORT-RUN TRADE-OFF BETWEEN
INFLATION AND UNEMPLOYMENT 801

The Phillips Curve
Origins of the Phillips Curve
Aggregate Demand, Aggregate Supply, and the Phillips Curve

Shifts in the Phillips Curve: The Role of Cost Curves 803
The Long-Run Phillips Curve
The Meaning of "Natural" Unemployment
Karl Marx's Theory and Evidence 808
The Short-Run Phillips Curve
The Natural Rate Hypothesis
Hypothesis 810

Shifts in the Phillips Curve: The Role of Supply Shocks 811

IN THE NEWS Will Stagflation Return? 815

The Cost of Inflation
The Short-Run Phillips Curve and the Long-Run Phillips Curve
The Natural Rate Hypothesis
The Volcker Disinflation
The Long-Run Phillips Curve

IN THE NEWS Managing Expectations 822
Conclusion BIZ
Summary 924
Key Concepts 824
Problems and Applications #23



PART XIII
FINAL THOUGHTS 827

CHAPTER 36
FIVE DEBATES OVER MACROECONOMIC
POLICY 829

Should Monetary and Fiscal Policymakers Try to
Stabilize the Economy? 829

Pro: Policymakers Should Try to Stabilize the
Economy 829

Con: Policymakers Should Not Try to Stabilize the
Economy 829

Should Monetary Policy Be Made by Rule Rather Than
Discretion? 830

Pro: Monetary Policy Should Be Made by Rule 830
Con: Monetary Policy Should Not Be Made by Rule
IN THE NEWS Inflation Targeting 834

Should the Central Bank Aim for Zero
Inflation? 835
Pro: The Central Bank Should Aim for
Zero Inflation 835

Central Bank Should Not Aim for Zero
Inflation 837

Should the Budget be Tighter? 638
Pro: The Government Should Tighten the Budget #59
Con: The Government Should Not Tighten the Budget 840

Should the Tax Laws Be Reformed to Encourage
Saving? *MI*
Pro: The Tax Laws Should Be Reformed to Encourage
Saving *SAT*

IN THE NEWS Dealing with Deficit* B42
Con: The Tax Laws Should Be Reformed to
844

Conduct of the
Summary 846
Questions for Review *Hfi*
and Applications *K47*

Glossary 849
Index *S57*