

Brief Contents

Preface 15

PART 1 Introduction

- 1 Introduction to Macroeconomics 29
- 2 The Measurement and Structure of the National Economy 50

PART 2 Long-Run Economic Performance

- 3 Productivity, Output, and Employment 89
- 4 Consumption, Saving, and Investment 136
- 5 Saving and Investment in the Open Economy 200
- 6 Long-Run Economic Growth 235
- 7 The Asset Market, Money, and Prices 269

PART 3 Business Cycles and Macroeconomic Policy

- 8 Business Cycles 306
- 9 The *IS-LM/AD-AS* Model: A General Framework for Macroeconomic Analysis 342
- 10 Classical Business Cycle Analysis: Market-Clearing Macroeconomics 393
- 11 Keynesianism: The Macroeconomics of Wage and Price Rigidity 434

PART 4 Macroeconomic Policy: Its Environment and Institutions

- 12 Unemployment and Inflation 475
- 13 Exchange Rates, Business Cycles, and Macroeconomic Policy in the Open Economy 508
- 14 Monetary Policy and the Federal Reserve System 559
- 15 Government Spending and Its Financing 606

Appendix A: Some Useful Analytical Tools 645

Glossary 652

Name Index 662

Subject Index 664

Detailed Contents

Preface 15

PART 1 Introduction

CHAPTER 1 Introduction to Macroeconomics 29

1.1 What Macroeconomics Is About 29

Long-Run Economic Growth 30

Business Cycles 32

Unemployment 33

Inflation 34

The International Economy 35

Macroeconomic Policy 36

Aggregation 38

1.2 What Macroeconomists Do 38

Macroeconomic Forecasting 38

Macroeconomic Analysis 39

Macroeconomic Research 39

Data Development 40

IN TOUCH WITH DATA AND RESEARCH:

Developing and Testing an Economic Theory 41

1.3 Why Macroeconomists Disagree 42

Classicals Versus Keynesians 43

A Unified Approach to Macroeconomics 45

CHAPTER 2 The Measurement and Structure of the National Economy 50

2.1 National Income Accounting: The Measurement of Production, Income, and Expenditure 50

IN TOUCH WITH DATA AND RESEARCH:

The National Income and Product Accounts in Malaysia 52

Why the Three Approaches Are Equivalent 53

2.2 Gross Domestic Product 54

The Product Approach to Measuring GDP 54

IN TOUCH WITH DATA AND RESEARCH:

Natural Resources, the Environment, and the National Income Accounts 57

The Expenditure Approach to Measuring GDP 58

The Income Approach to Measuring GDP 61

2.3 Saving and Wealth 64

Measures of Aggregate Saving 65

The Uses of Private Saving 67

Relating Saving and Wealth 69

2.4 Real GDP, Price Indexes, and Inflation 71

Real GDP 71

Price Indexes 73

IN TOUCH WITH DATA AND RESEARCH:

The Computer Revolution and Chain-Weighted GDP 74

IN TOUCH WITH DATA AND RESEARCH:

CPI Inflation vs. Core Inflation 76

APPLICATION The Federal Reserve's Preferred Inflation Measures 78

2.5 Interest Rates 80

PART 2 Long-Run Economic Performance

CHAPTER 3 Productivity, Output, and Employment 89

3.1 How Much Does the Economy Produce? The Production Function 90

APPLICATION The Production Function and Changes of Productivity in the European Union 91

The Shape of the Production Function 93

The Marginal Product of Capital 94

The Marginal Product of Labor 95

Supply Shocks 98

3.2 The Demand for Labor 99

The Marginal Product of Labor and Labor Demand:
An Example 100

A Change in the Wage 102

The Marginal Product of Labor and the Labor
Demand Curve 103

Factors That Shift the Labor Demand Curve 104

Aggregate Labor Demand 106

3.3 The Supply of Labor 106

The Income–Leisure Trade-Off 107

Real Wages and Labor Supply 108

The Labor Supply Curve 110

Aggregate Labor Supply 111

3.4 Labor Market Equilibrium 112

Full-Employment Output 114

APPLICATION Output, Employment, and the Real Wage During
Oil Price Shocks 115

3.5 Unemployment 116

Measuring Unemployment 116

Changes in Employment Status 117

IN TOUCH WITH DATA AND RESEARCH:
Labor Market Data in Kazakhstan 118

How Long Are People Unemployed? 119

APPLICATION Unemployment Duration and the 2007–2009
Recession 120

Why There Always Are Unemployed People 122

IN TOUCH WITH DATA AND RESEARCH:
Alternative Measures of the Unemployment Rate 123

**3.6 Relating Output and Unemployment:
Okun's Law 125****APPENDIX 3.A The Growth Rate Form of Okun's
Law 135****CHAPTER 4 Consumption, Saving, and Investment 136****4.1 Consumption and Saving 137**

The Consumption and Saving Decision of an
Individual 138

Effect of Changes in Current Income 139

Effect of Changes in Expected Future Income 140

APPLICATION The Idiosyncrasy of Singapore's Aggregate
Consumption 141

Effect of Changes in Wealth 144

Effect of Changes in the Real Interest Rate 144

Fiscal Policy 146

IN TOUCH WITH DATA AND RESEARCH:

Interest Rates 147

APPLICATION How Investors Respond to Tax Incentives 151

4.2 Investment 153

The Desired Capital Stock 154

Changes in the Desired Capital Stock 157

APPLICATION Measuring the Effects of Taxes on Investment 160

From the Desired Capital Stock to Investment 161

Investment in Inventories and Housing 164

IN TOUCH WITH DATA AND RESEARCH:

Investment and the Stock Market 164

4.3 Goods Market Equilibrium 166

The Saving–Investment Diagram 167

APPLICATION Macroeconomic Consequences of the Boom
and Bust in Stock Prices 171

**APPENDIX 4.A A Formal Model of Consumption and
Saving 183****CHAPTER 5 Saving and Investment in the Open
Economy 200****5.1 Balance of Payments Accounting 201**

The Current Account 201

IN TOUCH WITH DATA AND RESEARCH:

The Balance of Payments Accounts in Malaysia 203

The Financial Account 204

The Relationship Between the Current Account and
the Financial Account 205

Net Foreign Assets and the Balance of Payments
Accounts 207

APPLICATION The United States as International Debtor 208

**5.2 Goods Market Equilibrium in an Open
Economy 210****5.3 Saving and Investment in a Small Open
Economy 212**

The Effects of Economic Shocks in a Small Open Economy 215

5.4 Saving and Investment in Large Open Economies 217

APPLICATION The Impact of Globalization on High-Income Economies 219

APPLICATION Recent Trends in the U.S. Current Account Deficit 221

5.5 Fiscal Policy and the Current Account 223

The Critical Factor: The Response of National Saving 223

The Government Budget Deficit and National Saving 224

APPLICATION The Twin Deficits 225

CHAPTER 6 Long-Run Economic Growth 235

6.1 The Sources of Economic Growth 236

Growth Accounting 238

APPLICATION The Post-1973 Slowdown in Productivity Growth 241

APPLICATION The Recent Trends in UK Productivity 242

6.2 Long-Run Growth: The Solow Model 245

Setup of the Solow Model 246

The Fundamental Determinants of Long-Run Living Standards 253

APPLICATION The Growth of China 258

6.3 Endogenous Growth Theory 260

6.4 Government Policies to Raise Long-Run Living Standards 262

Policies to Affect the Saving Rate 262

Policies to Raise the Rate of Productivity Growth 262

CHAPTER 7 The Asset Market, Money, and Prices 269

7.1 What Is Money? 269

IN TOUCH WITH DATA AND RESEARCH:
Money in a Prisoner-of-War Camp 270

The Functions of Money 271

IN TOUCH WITH DATA AND RESEARCH:
The Monetary Aggregates 273

IN TOUCH WITH DATA AND RESEARCH:

The Effect of Dollarization on the United States and Other Nations 274

7.2 Portfolio Allocation and the Demand for Assets 276

Expected Return 276

Risk 277

Liquidity 277

Time to Maturity 277

Types of Assets and Their Characteristics 278

IN TOUCH WITH DATA AND RESEARCH:

Capital Flows and Property Prices 281

Asset Demands 283

7.3 The Demand for Money 283

The Price Level 284

Real Income 284

Interest Rates 285

The Money Demand Function 285

Other Factors Affecting Money Demand 287

Velocity and the Quantity Theory of Money 289

7.4 Asset Market Equilibrium 292

Asset Market Equilibrium: An Aggregation Assumption 292

The Asset Market Equilibrium Condition 294

7.5 Money Growth and Inflation 295

APPLICATION Money Growth and Inflation in European Countries in Transition 296

The Inflation Rate and the Nominal Interest Rate 298

APPLICATION Inflation Expectations and Linkers 299

PART 3 Business Cycles and Macroeconomic Policy

CHAPTER 8 Business Cycles 306

8.1 What Is a Business Cycle? 307

8.2 The American Business Cycle: The Historical Record 309

The Pre-World War I Period 309

- The Great Depression and World War II 309
 Post-World War II U.S. Business Cycles 311
 The “Long Boom” 312
 The Great Recession 312
 Have American Business Cycles Become Less Severe? 313
- 8.3 Business Cycle Facts 316**
 The Cyclical Behavior of Economic Variables: Direction and Timing 316
 Production 317
 Expenditure 319
 Employment and Unemployment 320
 APPLICATION The Job Finding Rate and the Job Loss Rate 321
 Average Labor Productivity and the Real Wage 324
 Money Growth and Inflation 325
 Financial Variables 326
 International Aspects of the Business Cycle 327
 IN TOUCH WITH DATA AND RESEARCH: Coincident and Leading Indexes 328
- 8.4 Business Cycle Analysis: A Preview 332**
 IN TOUCH WITH DATA AND RESEARCH: The Seasonal Cycle and the Business Cycle 333
 Aggregate Demand and Aggregate Supply: A Brief Introduction 334
- CHAPTER 9 The $IS-LM/AD-AS$ Model: A General Framework for Macroeconomic Analysis 342**
- 9.1 The FE Line: Equilibrium in the Labor Market 343**
 Factors That Shift the FE Line 343
- 9.2 The IS Curve: Equilibrium in the Goods Market 345**
 Factors That Shift the IS Curve 347
- 9.3 The LM Curve: Asset Market Equilibrium 349**
 The Interest Rate and the Price of a Nonmonetary Asset 350
 The Equality of Money Demanded and Money Supplied 350
 Factors That Shift the LM Curve 353
- 9.4 General Equilibrium in the Complete $IS-LM$ Model 357**
 Applying the $IS-LM$ Framework: A Temporary Adverse Supply Shock 358
 APPLICATION The Oil Price Shock of 2008 360
 IN TOUCH WITH DATA AND RESEARCH: Econometric Models and Macroeconomic Forecasts for Monetary Policy Analysis 360
- 9.5 Price Adjustment and the Attainment of General Equilibrium 362**
 The Effects of a Monetary Expansion 362
 Classical Versus Keynesian Versions of the $IS-LM$ Model 366
- 9.6 Aggregate Demand and Aggregate Supply 367**
 The Aggregate Demand Curve 368
 The Aggregate Supply Curve 370
 Equilibrium in the $AD-AS$ Model 373
 Monetary Neutrality in the $AD-AS$ Model 373
- APPENDIX 9.A Worked-Out Numerical Exercise for Solving the $IS-LM/AD-AS$ Model 383
- APPENDIX 9.B Algebraic Versions of the $IS-LM/AD-AS$ Model 386
- CHAPTER 10 Classical Business Cycle Analysis: Market-Clearing Macroeconomics 393**
- 10.1 The Real Business Cycle Theory 394**
 APPLICATION Calibrating the Business Cycle 397
- 10.2 Fiscal Policy Shocks in the Classical Model 404**
- 10.3 Unemployment in the Classical Model 408**
 Jobless Recoveries 410
- 10.4 Money in the Classical Model 412**
 Monetary Policy and the Economy 412
 Monetary Nonneutrality and Reverse Causation 413
 The Nonneutrality of Money: Additional Evidence 414
- 10.5 The Misperceptions Theory and the Nonneutrality of Money 415**

Monetary Policy and the Misperceptions Theory 418

Rational Expectations and the Role of Monetary Policy 420

IN TOUCH WITH DATA AND RESEARCH:
Are Price Forecasts Rational? 422

APPENDIX 10.A Worked-Out Numerical Exercise for Solving the Classical AD–AS Model with Misperceptions 431

APPENDIX 10.B An Algebraic Version of the Classical AD–AS Model with Misperceptions 432

CHAPTER 11 Keynesianism: The Macroeconomics of Wage and Price Rigidity 434

11.1 Real-Wage Rigidity 435

Some Reasons for Real-Wage Rigidity 435

The Efficiency Wage Model 436

Wage Determination in the Efficiency Wage Model 437

Employment and Unemployment in the Efficiency Wage Model 438

Efficiency Wages and the *FE* Line 440

IN TOUCH WITH DATA AND RESEARCH:
Efficiency Wages 441

11.2 Price Stickiness 442

Sources of Price Stickiness: Monopolistic Competition and Menu Costs 442

11.3 Monetary and Fiscal Policy in the Keynesian Model 448

Monetary Policy 448

Fiscal Policy 451

11.4 The Keynesian Theory of Business Cycles and Macroeconomic Stabilization 455

Keynesian Business Cycle Theory 455

Macroeconomic Stabilization 457

Supply Shocks in the Keynesian Model 460

IN TOUCH WITH DATA AND RESEARCH:
DSGE Models and the Classical–Keynesian Debate 462

APPENDIX 11.A Labor Contracts and Nominal-Wage Rigidity 468

APPENDIX 11.B Worked-Out Numerical Exercise for Calculating the Multiplier in a Keynesian Model 471

APPENDIX 11.C The Multiplier in the Keynesian Model 473

PART 4 Macroeconomic Policy: Its Environment and Institutions

CHAPTER 12 Unemployment and Inflation 475

12.1 Unemployment and Inflation: Is There a Trade-Off? 475

The Expectations-Augmented Phillips Curve 478

The Shifting Phillips Curve 481

12.2 Macroeconomic Policy and the Phillips Curve 486

IN TOUCH WITH DATA AND RESEARCH:
The Lucas Critique 487

The Long-Run Phillips Curve 488

12.3 The Problem of Unemployment 489

The Costs of Unemployment 489

The Long-Term Behavior of the Unemployment Rate 490

12.4 The Problem of Inflation 493

The Costs of Inflation 493

IN TOUCH WITH DATA AND RESEARCH:
Indexed Contracts 495

12.5 Fighting Inflation: The Role of Inflationary Expectations 498

IN TOUCH WITH DATA AND RESEARCH:
The Sacrifice Ratio 500

The U.S. Disinflation of the 1980s and 1990s 502

CHAPTER 13 Exchange Rates, Business Cycles, and Macroeconomic Policy in the Open Economy 508

13.1 Exchange Rates 509

Nominal Exchange Rates 509

IN TOUCH WITH DATA AND RESEARCH:
Exchange Rates 510

Real Exchange Rates 511

- Appreciation and Depreciation 512
 Purchasing Power Parity 513
 IN TOUCH WITH DATA AND RESEARCH:
 McParity 514
 The Real Exchange Rate and Net Exports 516
 APPLICATION The Value of the Hong Kong Dollar and Net Exports 518
- 13.2 How Exchange Rates Are Determined: A Supply-and-Demand Analysis** 520
 Macroeconomic Determinants of the Exchange Rate and Net Export Demand 522
- 13.3 The IS–LM Model for an Open Economy** 524
 The Open-Economy IS Curve 525
 Factors That Shift the Open-Economy IS Curve 528
 The International Transmission of Business Cycles 530
- 13.4 Macroeconomic Policy in an Open Economy with Flexible Exchange Rates** 531
 A Fiscal Expansion 531
 A Monetary Contraction 534
- 13.5 Fixed Exchange Rates** 536
 Fixing the Exchange Rate 537
 Monetary Policy and the Fixed Exchange Rate 539
 Fixed Versus Flexible Exchange Rates 542
 Currency Unions 543
 APPLICATION Is Either the United States or Europe an Optimum Currency Area? 544
 APPLICATION European Monetary Unification 546
- APPENDIX 13.A Worked-Out Numerical Exercise for the Open-Economy IS–LM Model 553
- APPENDIX 13.B An Algebraic Version of the Open-Economy IS–LM Model 556
- CHAPTER 14 Monetary Policy and the Federal Reserve System 559
- 14.1 Principles of Money Supply Determination** 560
 Open-Market Operations 562
 The Money Multiplier 563
 Bank Runs 566
 APPLICATION The Money Multiplier During Severe Financial Crises 567
- 14.2 Monetary Control in the United States** 572
 The Federal Reserve System 572
 The Federal Reserve’s Balance Sheet and Open-Market Operations 573
 Reserve Requirements 575
 Discount Window Lending 576
 APPLICATION The Lender of Last Resort 577
 Interest Rate on Reserves 578
- 14.3 Setting Monetary Policy Targets** 578
 Targeting the Federal Funds Rate 578
- 14.4 Making Monetary Policy in Practice** 582
 Lags in the Effect of Monetary Policy 582
 Conducting Monetary Policy Under Uncertainty 584
 Monetary Policy in the Great Recession 586
 APPLICATION Is There Really a Zero Lower Bound? 587
 APPLICATION Contagion Effects of the 2008 Global Financial Crisis 591
- 14.5 The Conduct of Monetary Policy: Rules Versus Discretion** 592
 The Monetarist Case for Rules 593
 Rules and Central Bank Credibility 595
 The Taylor Rule 596
 Other Ways to Achieve Central Bank Credibility 599
 APPLICATION Inflation Targeting 600
- CHAPTER 15 Government Spending and Its Financing 606
- 15.1 The Government Budget: Some Facts and Figures** 606
 Government Outlays 606
 Taxes 608
 Deficits and Surpluses 612

15.2 Government Spending, Taxes, and the Macroeconomy 614

Fiscal Policy and Aggregate Demand 614

Government Capital Formation 617

Incentive Effects of Fiscal Policy 617

APPLICATION **Supply-Side Economics** 620**15.3 Government Deficits and Debt** 622

The Growth of the Government Debt 622

APPLICATION **Social Security: How Can It Be Fixed?** 624

The Burden of the Government Debt on Future Generations 626

Budget Deficits and National Saving: Ricardian Equivalence Revisited 627

Departures from Ricardian Equivalence 629

IN TOUCH WITH DATA AND RESEARCH:

Measuring the Impact of Government Purchases on the Economy 631**15.4 Deficits and Inflation** 632

The Deficit and the Money Supply 632

Real Seignorage Collection and Inflation 634

APPLICATION **Quantitative Easing and Inflation** 638APPENDIX 15.A **The Debt–GDP Ratio** 644APPENDIX A **Some Useful Analytical Tools** 645

A.1 Functions and Graphs 645

A.2 Slopes of Functions 646

A.3 Elasticities 647

A.4 Functions of Several Variables 648

A.5 Shifts of a Curve 648

A.6 Exponents 649

A.7 Growth Rate Formulas 649

Problems 650

Glossary 652

Name Index 662

Subject Index 664