

# Contents

|          |                                                   |           |
|----------|---------------------------------------------------|-----------|
| <b>I</b> | <b>INTRODUCTION AND MEASUREMENT</b>               | <b>1</b>  |
| <b>1</b> | <b>Introduction</b>                               | <b>3</b>  |
| 1.1      | What Is Macroeconomics?                           | 3         |
| 1.2      | Post–World War II U.S. Economic Performance       | 5         |
|          | <i>Output</i>                                     | 6         |
|          | <i>Unemployment</i>                               | 7         |
|          | <i>Inflation</i>                                  | 8         |
|          | <i>Inflation and Unemployment</i>                 | 9         |
|          | <i>The Twin Deficits</i>                          | 12        |
| 1.3      | Central Questions in Macroeconomics               | 14        |
|          | <i>Increased Economic Instability</i>             | 14        |
|          | <i>The Output–Inflation Relationship</i>          | 14        |
|          | <i>A Growth Slowdown with Rising Unemployment</i> | 15        |
|          | <i>Implications of the Twin Deficits</i>          | 15        |
| 1.4      | Conclusion                                        | 15        |
| <b>2</b> | <b>Measurement of Macroeconomic Variables</b>     | <b>17</b> |
| 2.1      | The National Income Accounts                      | 17        |
| 2.2      | Gross Domestic Product                            | 18        |
| 2.3      | National Income                                   | 22        |
|          | <b>PERSPECTIVES 2.1 • WHAT GDP IS NOT</b>         | <b>23</b> |

- 2.4 Personal and Personal Disposable Income 25
- 2.5 Some National Income Accounting Identities 27
- 2.6 Measuring Price Changes: Real Versus Nominal GDP 29
- 2.7 The Consumer Price Index and the Producer Price Index 31
- 2.8 Measures of Cyclical Variation in Output 33
- 2.9 Conclusion 36

## **II MACROECONOMIC MODELS 38**

### **3 Classical Macroeconomics (I): Equilibrium Output and Employment 41**

- 3.1 The Starting Point 41
- 3.2 The Classical Revolution 42
- 3.3 Production 44
- 3.4 Employment 47
  - Labor Demand* 47
  - Labor Supply* 49
- 3.5 Equilibrium Output and Employment 52
  - The Determinants of Output and Employment* 53
  - Factors That Do Not Affect Output* 58
- PERSPECTIVES 3.1 • REAL BUSINESS CYCLES 59**
- 3.6 Conclusion 60

### **4 The Classical System (II): Money, Prices, and Interest 63**

- 4.1 The Quantity Theory of Money 63
  - The Equation of Exchange* 63
  - The Cambridge Approach to the Quantity Theory* 65
  - The Classical Aggregate Demand Curve* 67
- PERSPECTIVES 4.1 • MONEY IN  
HYPERINFLATIONS 70**
- 4.2 The Classical Theory of the Interest Rate 71

## 4.3 Policy Implications of the Classical Equilibrium Model 75

*Fiscal Policy* 75*Monetary Policy* 80**PERSPECTIVES 4.2 • SUPPLY-SIDE ECONOMICS—A  
MODERN CLASSICAL VIEW 81**4.4 The Classical System with Rigid Money Wages—One  
Explanation of Unemployment 82

## 4.5 Conclusion 86

**5 The Keynesian System (I):  
The Role of Aggregate Demand 89**

## 5.1 The Problem of Unemployment 89

5.2 The Simple Keynesian Model: Conditions for  
Equilibrium Output 93

## 5.3 The Components of Aggregate Demand 98

*Consumption* 98*Investment* 100*Government Spending and Taxes* 103

## 5.4 Determining Equilibrium Income 103

## 5.5 Changes in Equilibrium Income 107

## 5.6 Fiscal Stabilization Policy 113

**PERSPECTIVES 5.1 • FISCAL POLICY IN  
PRACTICE 114**

## 5.7 Conclusion 115

Appendix: Exports and Imports in the Simple  
Keynesian Model 118**6 The Keynesian System (II):  
Money, Interest, and Income 123**

## 6.1 Money in the Keynesian System 123

*Interest Rates and Aggregate Demand* 123*The Keynesian Theory of the Interest Rate* 126

## **PERSPECTIVES 6.1 • RESIDENTIAL CONSTRUCTION AND THE INTEREST RATE 127**

*The Keynesian Theory of Money Demand* 128  
*The Effects of an Increase in the Money Stock* 135  
*Some Implications of Interest on Money* 135  
*Summary* 137

### **6.2 The IS–LM Curve Model 138**

*Money Market Equilibrium: The LM Curve* 138  
*Product Market Equilibrium: The IS Curve* 150  
*The IS and LM Curves Combined* 163

### **6.3 Conclusion 165**

**Appendix: The Algebra of the IS–LM Model 167**

A.1 *The LM Curve* 168  
 A.2 *The IS Curve* 170  
 A.3 *Equilibrium in the IS–LM Curve Model* 171

## **7 The Keynesian System (III): Policy Effects in the IS–LM Model 173**

### **7.1 Factors Affecting Equilibrium Income and the Interest Rate 173**

*Monetary Influences: Shifts in the LM Schedule* 173  
*Real Influences: Shifts in the IS Schedule* 175

### **7.2 The Relative Effectiveness of Monetary and Fiscal Policy 181**

*Policy Effectiveness and the Slope of the IS  
Schedule* 182  
*Policy Effectiveness and the Slope of the LM  
Schedule* 187

### **7.3 Conclusion 193**

## **PERSPECTIVES 7.1 • THE MONETARY–FISCAL POLICY MIX: SOME HISTORICAL EXAMPLES 194**

**Appendix: Monetary and Fiscal Policy Multipliers in  
the IS–LM Curve Model 197**

A.1 *The Effects of Monetary and Fiscal Policy  
on Income* 197

A.2 Policy Effectiveness and the Slopes of the IS and  
LM Curves 199

## 8 The Keynesian System (IV): Aggregate Supply 203

- 8.1 The Keynesian Aggregate Demand Curve 204
- 8.2 The Keynesian Aggregate Demand Curve Combined with  
the Classical Theory of Aggregate Supply 210
- 8.3 The Keynesian Contractual View of the  
Labor Market 214

*Sources of Wage Rigidity* 215

*A Flexible-Price, Fixed-Money-Wage Model* 216

### PERSPECTIVES 8.1 • PRICE AND QUANTITY ADJUSTMENT IN GREAT BRITAIN, 1929–36 217

- 8.4 Labor Supply and Variability in the Money Wage 223

*The Classical and Keynesian Theories of Labor Supply* 223

*The Keynesian Aggregate Supply Curve with a Variable  
Money Wage* 225

*Policy Effects in the Variable-Wage Keynesian Model* 227

- 8.5 The Effects of Shifts in the Aggregate Supply  
Function 231

*The Behavior of Price and Output over the 1970s* 231

*Factors That Shift the Aggregate Supply Schedule* 233

*Supply-Side Factors, 1981–91* 239

- 8.6 Supply Shocks and Aggregate Demand Policy 240

- 8.7 Conclusion: Keynes Versus the Classics 242

*Keynesian Versus Classical Theories of Aggregate Demand* 242

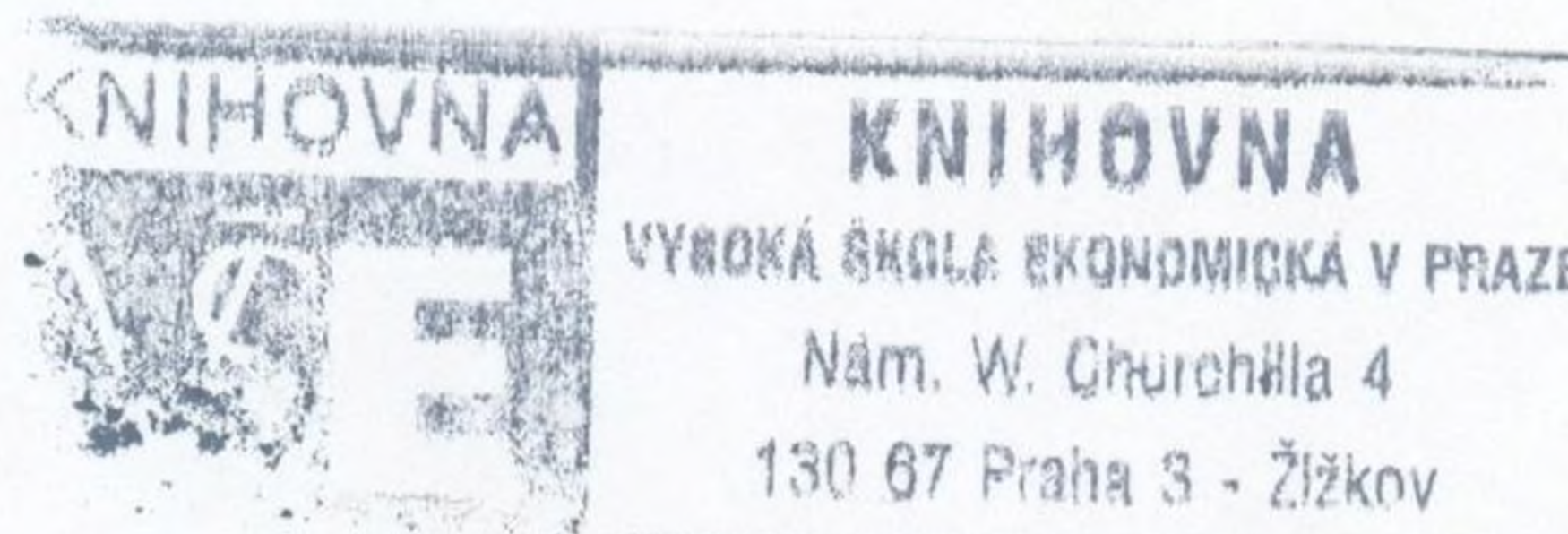
*Keynesian Versus Classical Theories of Aggregate Supply* 244

*Keynesian Versus Classical Policy Conclusions* 246

## 9 The Monetarist Counterrevolution 249

- 9.1 Introduction 249
- 9.2 The Reformulation of the Quantity Theory  
of Money 252

*Money and the Early Keynesians* 252



## PERSPECTIVES 9.1 • THE MONETARIST VIEW OF THE GREAT DEPRESSION 258

*Friedman's Restatement of the Quantity Theory: The Weak Form* 259

*Friedman's Restatement of the Quantity Theory: The Strong Form* 263

### 9.3 Monetary and Fiscal Policy: Monetarists Versus Keynesians 267

*Fiscal Policy* 267

*Monetary Policy* 273

### 9.4 Some Evidence on the Monetarist–Keynesian Controversy 278

*Evidence from Statistical Models* 278

*The Recent Behavior of the Money–Income Relationship* 279

### 9.5 Conclusion 283

## 10 Output, Inflation, and Unemployment: Monetarist and Keynesian Views 287

### 10.1 The Natural Rate Theory 288

### 10.2 Monetary Policy, Output, and Inflation: A Monetarist View 290

*Monetary Policy in the Short Run* 290

*Monetary Policy in the Long Run* 291

*Policy Implications* 296

### 10.3 A Keynesian View of the Output–Inflation Trade-off 298

*The Phillips Curve: A Keynesian Interpretation* 299

*Stabilization Policies for Output and Employment: The Keynesian View* 304

*Keynesian Doubts About the Natural-Rate Concept* 306

### 10.4 Monetarists Versus Keynesians 308

*Monetarist Versus Keynesian Theories of Aggregate Demand* 308

*Monetarist Versus Keynesian Theories of Aggregate Supply* 310

## 11 New Classical Economics 313

### 11.1 The New Classical Attack 314

*A Review of the Keynesian Position* 314

*The Rational Expectations Concept and Its Implications* 315  
*The New Classical Policy Conclusions* 322

11.2 A Broader View of the New Classical Position 325

11.3 The Keynesian Countercritique 327

*The Question of Persistence* 328

**PERSPECTIVES 11.1 • THE NEW CLASSICAL ECONOMICS AND THE DISINFLATION OF THE 1980s 330**

*The Extreme Informational Assumptions of Rational Expectations* 331

*Auction Market Versus Contractual Views of the Labor Market* 334

11.4 Conclusion 335

**PERSPECTIVES 11.2 • THE GREAT DEPRESSION: NEW CLASSICAL VIEWS 336**

## **12 New Classical and New Keynesian Directions 341**

12.1 Real Business Cycle Models 341

*Central Features of Real Business Cycle Models* 341

*A Simple Real Business Cycle Model* 343

*Effects of a Positive Shock to Technology* 345

*Macroeconomic Policy in a Real Business Cycle Model* 347

*Questions About Real Business Cycle Models* 349

**PERSPECTIVES 12.1 • LABOR MARKET FLOWS 350**

*Concluding Comment* 352

12.2 New Keynesian Economics 352

*Sticky Price (Menu Cost) Models* 353

*Efficiency Wage Models* 355

*Insider–Outsider Models and Hysteresis* 358

12.3 Conclusion 360

## **13 Macroeconomic Models: A Summary 363**

13.1 Theoretical Issues 363

13.2 Policy Issues 368

## **III EXTENSIONS OF THE MODELS 372**

### **14 Consumption and Investment 375**

#### **14.1 Consumption 375**

*Early Empirical Evidence on the Keynesian Consumption Function 375*

*The Life Cycle Theory of Consumption 380*

#### **PERSPECTIVES 14.1 • DECLINING U.S. PERSONAL SAVING 388**

*Policy Implications of the Life Cycle Hypothesis 389*

*The Permanent Income Hypothesis 391*

#### **14.2 Investment Spending 396**

*Business Fixed Investment 397*

*Other Components of Investment 405*

#### **PERSPECTIVES 14.2 • INVENTORIES IN THE RECENT RECESSION 413**

#### **14.3 Conclusion 415**

### **15 Money Demand 419**

#### **15.1 The Definition of Money 422**

*The Functions of Money 422*

*Components of the Money Supply 422*

#### **15.2 The Theory of the Transactions Demand for Money 424**

*The Inventory-Theoretic Approach to Money Demand 425*

*The Inventory-Theoretic Approach Continued: The Case of Uncertainty 434*

*Summary 438*

#### **15.3 Extensions of Keynes's Theory of the Demand for Money as a Store of Wealth 438**

*The Demand for Money as Behavior Toward Risk 439*

*Money Demand and the Rate of Interest 443*

#### **15.4 Instability of Money Demand 445**

*Evidence on the Instability of Money Demand 445*

*Explanation of Instability of Money Demand* 447

*Adjustments in the 1980s* 449

15.5 Conclusion 449

## **16 The Money Supply Process**

**453**

16.1 The Federal Reserve System 454

*The Structure of the Central Bank* 454

*Federal Reserve Control of the Money Stock* 454

*The Tools of Federal Reserve Control* 456

16.2 Bank Reserves and Bank Deposits 458

*A Simple Model of Deposit Creation* 459

*Deposit Creation: More General Cases* 465

16.3 Who Controls the Money Stock 468

**PERSPECTIVES 16.1 • THE MONEY SUPPLY DURING  
THE GREAT DEPRESSION 473**

16.4 Conclusion 476

## **17 The Supply Side: Intermediate- and Long-Term Economic Growth**

**479**

17.1 Long-Run Steady-State Growth 480

*Growth and the Aggregate Production Function* 480

*Sources of Economic Growth* 484

*Recent Developments in the Theory of Economic Growth* 487

**PERSPECTIVES 17.1 • ACCOUNTING FOR U.S.  
ECONOMIC GROWTH, 1929–82 488**

17.2 Determinants of Output Growth in Intermediate-Run  
Periods 491

*U.S. Economic Growth, 1960–91* 493

*The Supply-Side Position* 493

**PERSPECTIVES 17.2 • GROWTH AND PRODUCTIVITY  
SLOWDOWNS IN OTHER INDUSTRIALIZED  
ECONOMIES 494**

*The Keynesian Critique of Supply-Side Economics* 503

## PERSPECTIVES 17.3 • THE LAFFER CURVE 504

### 17.3 Supply-Side Economics and the Policies of the Reagan and Bush Administrations 508

*Economic Redirection in Reagan's First Term* 508

*The Second Reagan Administration* 510

*Initiatives in Bush's First Term* 511

### 17.4 Conclusion 511

## IV ECONOMIC POLICY 514

### 18 Fiscal Policy 517

#### 18.1 The Goals of Macroeconomic Policy 518

#### 18.2 The Goals of Macroeconomic Policymakers 519

*The Public-Choice View* 520

*The Partisan Theory* 523

## PERSPECTIVES 18.1 • RATIONAL EXPECTATIONS AND THE PARTISAN THEORY 524

#### 18.3 The Federal Budget 525

#### 18.4 The Economy and the Federal Budget: The Concept of Automatic Fiscal Stabilizers 529

#### 18.5 Keynesian Objections to Balanced-Budget Rules 535

#### 18.6 What About the Deficit? 536

*Cyclical Versus Structural Deficits* 537

*The Keynesian View of Deficits in the 1980s* 538

*Other Views of the Budget Deficit* 543

## PERSPECTIVES 18.2 • RICARDIAN EQUIVALENCE 544

#### 18.7 Conclusion 546

### 19 Monetary Policy 549

#### 19.1 The Monetary Policymaking Process 549

#### 19.2 A Strategy for Monetary Policy: Intermediate Targeting on Monetary Aggregates 551

#### 19.3 Emphasis on Interest Rates 553

|           |                                                                                 |     |
|-----------|---------------------------------------------------------------------------------|-----|
|           | <i>Interest Rate Targeting</i>                                                  | 553 |
|           | <i>Implications for the Money Stock</i>                                         | 553 |
| 19.4      | Implications of Intermediate Targeting on a Monetary Aggregate                  | 554 |
|           | <i>The Ideal Case for Targeting on a Monetary Aggregate</i>                     | 554 |
|           | <i>Less Than Ideal Cases for Intermediate Targeting on a Monetary Aggregate</i> | 556 |
| 19.5      | Implications of Targeting the Interest Rate                                     | 558 |
|           | <i>Uncertainty About the IS Schedule</i>                                        | 559 |
|           | <i>Uncertainty About Money Demand</i>                                           | 562 |
| 19.6      | Money Stock Versus Interest Rate Targets                                        | 563 |
|           | <i>The Sources of Uncertainty and the Choice of a Monetary Policy Strategy</i>  | 563 |
|           | <i>Other Considerations</i>                                                     | 564 |
| 19.7      | The Evolution of Federal Reserve Strategy                                       | 565 |
|           | <i>1970–79: Federal Funds Rate Targeting</i>                                    | 565 |
|           | <i>1979–82: Targeting Monetary Aggregates</i>                                   | 566 |
|           | <i>1982–?: Current Federal Reserve Strategy</i>                                 | 566 |
|           | <b>PERSPECTIVES 19.1 • INSTABILITY IN THE MONEY–INCOME RELATIONSHIP</b>         | 567 |
| 19.8      | Conclusion                                                                      | 569 |
|           | <b>Appendix to Part IV: Selected Macroeconomic Policy Actions, 1929–91</b>      | 572 |
| <b>V</b>  | <b>OPEN ECONOMY MACROECONOMICS</b>                                              | 580 |
| <b>20</b> | <b>Exchange Rates and the International Monetary System</b>                     | 583 |
| 20.1      | The U.S. Balance of Payments Accounts                                           | 584 |
|           | <i>The Current Account</i>                                                      | 584 |
|           | <i>The Capital Account</i>                                                      | 585 |
|           | <i>Official Reserve Transactions</i>                                            | 586 |
| 20.2      | Exchange Rates and the Market for Foreign Exchange                              | 587 |

|                                                             |     |
|-------------------------------------------------------------|-----|
| <i>Demand and Supply in the Foreign Exchange Market</i>     | 588 |
| <i>Exchange Rate Determination: Flexible Exchange Rates</i> | 591 |
| <i>Exchange Rate Determination: Fixed Exchange Rates</i>    | 593 |

## 20.3 The Current Exchange Rate System 596

|                                                  |     |
|--------------------------------------------------|-----|
| <i>Current Exchange Rate Arrangements</i>        | 596 |
| <i>How Much Managing? How Much Floating?</i>     | 597 |
| <i>The Breakdown of the Bretton Woods System</i> | 598 |

## 20.4 Advantages of Exchange Rate Flexibility 600

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <i>Policy Independence and Exchange Rate Flexibility</i>          | 601 |
| <i>Flexible Exchange Rates and Insulation from Foreign Shocks</i> | 604 |

## 20.5 U.S. Experience with Floating Exchange Rates 606

|                                       |     |
|---------------------------------------|-----|
| <i>The Dollar in Decline, 1976–80</i> | 608 |
| <i>The Rising Dollar, 1981–85</i>     | 610 |

## PERSPECTIVES 20.1 • THE WORLD'S LARGEST DEBTOR 612

|                                     |     |
|-------------------------------------|-----|
| <i>The Dollar's Slide (1985–88)</i> | 614 |
| <i>The Dollar Since 1988</i>        | 614 |

## 20.6 Fixed Versus Flexible Exchange Rates 614

|                                                      |     |
|------------------------------------------------------|-----|
| <i>Greater Policy Independence</i>                   | 615 |
| <i>Greater Insulation from Foreign Shocks</i>        | 616 |
| <i>Arguments for a Return to a Fixed Rate System</i> | 616 |
| <i>Alternatives to Flexible Exchange Rates</i>       | 618 |

## 20.7 Conclusion 620

## Appendix to Part V: An Open Economy Macroeconomic Model

623

### A.1 An Open Economy IS–LM Model 623

### A.2 Monetary and Fiscal Policy in an Open Economy: Fixed Exchange Rates 626

|                                              |     |
|----------------------------------------------|-----|
| <i>Monetary Policy: Fixed Exchange Rates</i> | 626 |
| <i>Fiscal Policy: Fixed Exchange Rates</i>   | 627 |

### A.3 Monetary and Fiscal Policy in an Open Economy: Flexible Exchange Rates 630

|                                                 |     |
|-------------------------------------------------|-----|
| <i>Monetary Policy: Flexible Exchange Rates</i> | 630 |
| <i>Fiscal Policy: Flexible Exchange Rates</i>   | 631 |

|     |                                                                             |            |
|-----|-----------------------------------------------------------------------------|------------|
| A.4 | Insulation of the Economy from Foreign Shocks Under Flexible Exchange Rates | 634        |
|     | <b>Glossary</b>                                                             | <b>637</b> |
|     | <b>Index</b>                                                                | <b>645</b> |