

# Money, Banking, and Financial Markets

Stephen G. Cecchetti

**Brandeis University** 



Boston Burr Ridge, IL Dubuque, IA Madison, WI New York San Francisco St. Louis Bangkok Bogota Caracas Kuala Lumpur Lisbon London Madrid Mexico City Milan Montreal New Delhi Santiago Seoul Singapore Sydney Taipei Toronto



# **Contents**

### Parti Money and the Financial System 1

```
AN INTRODUCTION TO MONEY AND THE FINANCIAL SYSTEM 2
CHAPTER 1
             The Five Parts of the Financial System
             The Five Core Principles of Money and Banking 4
               Core Principle I: Time Has Value 4
               Core Principle 2: Risk Requires Compensation 5
               Core Principle 3: Information Is the Basis for Decisions 5
               Core Principle 4: Markets Set Prices and Allocate Resources 6
               Core Principle 5: Stability Improves Welfare 7
             Special Features of This Book 7
               Your Financial World 7
               Applying the Concept 8
               In the News 8
               Tools of the Trade 9
             The Organization of This Book 10
             Terms 11
             Chapter Lessons
                              11
             Problems
                       11
CHAPTER 2
             MONEY AND THE PAYMENTS SYSTEM
                                                  13
             Money and How We Use It
               Means of Payment 14
                Unit of Account 14
               Store of Value 15
             ® Your Financial World: Don't. Worry about Counterfeit Currency
             • Applying the Concept: A Professor Issues Currency
                                                                  16
             The Payments System 17
                Commodity and Fiat Monies 17
               Checks
               EJectronic Payments
             © Your Financial World: Debit Cards versus Credit Cards
             @ Applying die Concept: Writing a Check at Wal-Mart 22
             The Future of Money
             Measuring Money 24
             • In the News: Prepare for Paperless Payments
```

Part II

	<ul> <li>© Applying the Concept: Where Are All Those \$100 Bills? 28</li> <li>• Tools of the Trade: Measures of Inflation 31</li> <li>Terms 32</li> </ul>
	Chapter Lessons 32
	Problems 33
CHAPTER 3	FINANCIAL INSTRUMENTS, FINANCIAL MARKETS, AND FINANCIAL INSTITUTIONS 35 Financial Instruments 36
	Uses of Financial Instruments 37
	® Applying the Concept: Terrorism Insurance 38
	Characteristics of Financial Instruments: Standardization and Information 39
	® Applying the Concept: Henry Blodget and Investor Information 40 Underlying versus Derivative Instruments 41
	A Primer for Valuing Financial Instruments 41
	• Your Financial World: Disability Income Insurance 42
	Examples of Financial Instruments 43
	Financial Markets 44
	The Role of Financial Markets 45
	© Your Financial World: Are You Making Your Broker's Yacht Payments? 46
	The Structure of Financial Markets 46
	<ul> <li>© Tools of the Trade: Trading in Financial Markets 48</li> <li>• In the News: Regulators to Waive Many Rules to Encourage U.S. S toe k Trad ing 51</li> </ul>
	Characteristics of a Well-Run Financial Market 52
	<ul><li>9 Applying the Concept: Financial Development Requires Investor</li><li>Protection 52</li></ul>
	Financial Institutions 53
	The Role of Financial Institutions 54
	The Structure of the Financial Industry 54
	9 Your Financial World: Shop for a Mortgage 57
	Terms 5 7
	Chapter Lessons 58
	Problems 59
Interest Markets	Rates, Financial Instruments, and Financial
CHAPTER 4	FUTURE VALUE, PRESENT VALUE, AND INTEREST RATES 62 Valuing Monetary Payments Now and in the Future 63 Future Value and Compound Interest 63

9 Your Financial World: How Long Does Your Investment Take to

Double? 66

Present	Value	66		

- Tools of the Trade: Computing Compound Annual Rates 71

  Some Terminology: Interest Rates and Discount Rates 71
- Your Financial World: Should You Buy a New Car Now or Wait? 72
   Applying Present Value 73

Internal Rate of Return 73

- Applying the Concept: Retirement 75
- In the News: Pentagon Shows That It Doesn't Always Pay to Take the Money and Run 76

Bonds: The Basics 76

Real and Nominal Interest Rates 80

- @ Your Financial World: Pay Off Your Credit Card Debt as Fast as You Can 81
- ® Applying the Concept: High Interest Rates, Low Interest Rates 83Terms 85

Chapter Lessons 85

Problems 86

Appendix 4: The Algebra of Present-Value Formulas 88

#### CHAPTER 5 UNDERSTANDING RJSK 90

Defining Risk 91

 Applying the Concept: It's Not Just Expected Return That Matters 92

Measuring Risk 92

Possibilities, Probabilities, and Expected Value 92 Measures of Risk 96

- ® Your Financial World: Choosing the Right Amount of Car Insurance 96
- Tools of the Trade: The Impact of Leverage on Risk 98
- @ Applying the Concept: Government-Run Lotteries 101

Risk Aversion, the Risk Premium, and the Risk-Return Trade-off 102

Sources of Risk: Idiosyncratic and Systematic Risk 103

© Your Financial World: Your Risk Tolerance 104

Reducing Risk through Diversification 105

- Your Financial World: A Guide to Evaluating Risk 106
   Hedging Risk 107
   Spreading Risk 108
- In the News: A Poor Retirement 110

Terms 110

Chapter Lessons 111

Problems 112

Appendix 5 A: A Quick Test to Measure Your Risk Tolerance 115 Appendix 5B: The Mathematics of Diversification 117

CHAPTER 6	BONDS, BOND PRICES, AND THE DETERMINATION OF INTEREST RATES 119
	Bond Prices 120
	Zero-Coupon Bonds 120
	Fixed-Payment Loans 121
	Coupon Bonds J 2 J
	® Your Financial World: Are You Making an Interest-Free Loan to
	the IRS? 122
	Consols 122
	Bond Yields 123
	Yield to Maturity 123
	Current Yield 124
	Holding Period Returns 124
	9 Tools of the Trade: Reading the Bond Page 126
	The Bond Market and the Determination of Interest Rates 128
	Bond Supply, Bond Demand, and Equilibrium in the Bond Market 130
	Factors That Shift Bond Supply 13 J
	• Your Financial World: Interest-Only Mortgages 133
	Factors That Shift Bond Demand 134
	Understanding Changes in Equilibrium Bond Prices
	and Interest Rates 135
	9 Applying the Concept: When Russia Defaulted 136
	Why Bonds Are Risky 138
	Default Risk 139
	<ul><li>9 Applying the Concept: Risky Truck-School Student Loans 142</li><li>Inflation Risk 142</li></ul>
	9 Your Financial World: Bonds Guaranteed to Beat Inflation 143
	Interest-Rate Risk 143
	9 In the News: David Bowie Becomes a Bond 144
	Terms 145
	Chapter Lessons 146
	Problems 147
CHAPTER 7	THE RISK AND TERM STRUCTURE OF INTEREST RATES 149
	Ratings and the Risk Structure of Interest Rates 149
	Bond Ratings 150
	Commercial Paper Ratings 152
	9 Applying the Concept: The Day General Electric Went
	Too Far 153
	The Impact of Ratings on Yields 153
	Your Financial World: Your Credit Rating 157  Michael Millian and the History of Lab Product 157
	Michael Milken and the History of Junk Bonds 157
	Differences in Tax Status and Municipal Bonds 159

	<ul> <li>Your Financial World: Which Bond Is Best for You? 160  The Term Structure of Interest Rates 160  The Expectations Hypothesis 162  The Liquidity Premium Theory 164  9 Tools of the Trade: Reading Charts 166  The Information Content of Interest Rates 168  Information in the Risk Structure of Interest Rates 168  Information in the Term. Structure of Interest Rates 168  9 Applying the Concept: The Flight to Quality 170  In the News: The Future is in Bonds 173  Terms 174  Chapter Lessons 174  Problems 175</li> </ul>
CHAPTER 8	STOCKS, STOCK MARKETS, AND MARKET EFFICIENCY 177  The Essential Characteristics of Common Stock 178  Measuring the Level of the Stock Market 180  The Dow Jones Industrial Average 181  The Standard & Poor's 500 Index 181  Other U.S. Stock Market Indexes 182  World Stock Indexes 182  9 Your Financial World: Reading Stock Indexes in the Business News 183  Valuing Stocks 184  Fundamental Value and the Dividend-Discount Model 185  9 Tools of the Trade: Beware Percentage Changes 186  Why Stocks Are Risky 188  Risk and the Value of Stocks 189  ® Applying the Concept: Can We Justify Current Stock Prices? 191  The Theory of Efficient Markets 191  Investing in Stocks for the Long Run 192  @ Your Financial World: Should You Own Stocks? 195  The Stock Market's Role in the Economy 195  • In the News: Don't Just Analyze the Market, Analyze the Investor. 196  ® Applying the Concept: What Was the Internet Bubble All About? 198  Terms 199  Chapter Lessons 199  Problems 200
CHAPTER 9	DERIVATIVES: FUTURES, OPTIONS, AND SWAPS 202 The Basics: Defining Derivatives 202 Forwards and Futures 203 Margin Accounts and Marking to Market 204

Hedging and Speculating with Futures 206 © Applying the Concept: Who Can Use Commodity Futures Markets? 207 Arbitrage and the Determinants of Futures Prices 207 **Options** 209 Calls, Puts, and All That: Definitions Using Options 210 Pricing Options: Intrinsic Value and the Option Premium 213 The Value of Options: Some Examples 215 9 Your Financial World: Should You Accept Options as Part of Your Pay? 217 • Tools of the Trade: Options and Investment under Uncertainty Swaps 218 Understanding Interest-Rate Swaps 219 Pricing and Using Interest-Rate Swaps 220 • Your Financial World: Should You Believe Corporate Financial Statements? 221 9 Applying the Concept: What Was Long-Term Capital. Management Doing? 222 • In the News: Enron Had More Than One Way to Disguise Rapid Rise in Debt 223 Terms 224 Chapter Lessons 224 **Problems** 225 CHAPTER 10 FOREIGN EXCHANGE 228 Foreign Exchange Basics The Nominal Exchange Rate 230 The Real Exchange Rate 231 • Your Financial World: Following Exchange Rates in the News 232 Foreign Exchange Markets 235 Exchange Rates in the Long Run The Law of One Price 235 Purchasing Power Parity 236 9 Applying the Concept: The Big Mac Index 240 • Tools of the Trade: Accounting for International Transactions 242 Exchange Rates in the Short Run The Supply of Dollars 243 The Demand for Dollars 243 Equilibrium in the Market for Dollars 244 Shifts in the Supply of and Demand for Dollars 244 Explaining Exchange Rate Movements 246 • Applying the Concept: The Fall of the Korean Won 248 249 Government Policy and Foreign Exchange Intervention

- In the News: The Muscle-Bound Dollar May Now Be an Achilles' Heel 250
- Your Financial World: Investing Overseas 252

Terms 252

Chapter Lessons 252

Problems 253

Appendix 10: Interest-Rate Parity and Short-Run Exchange Rate Determination 256

### Part III Financial Institutions 258

CHAPTER 11 THE ECONOMICS OF FINANCIAL INTERMEDIATION 259

The Role of Financial Intermediaries 259

Pooling Savings 263

Safekeeping, Payments System Access, and Accounting 264

Providing Liquidity 266

• Your Financial World: Guard Your Identity 266

Diversifying Risk 267

Collecting and Processing Information 268

Information Asymmetries and Information Costs 268

- Applying the Concept: What's Happening to Bank Loans? 270

  \*Adverse Selection 271
- Your Financial World: Your First Credit Card 273
   Solving the Adverse Selection Problem <sub>1</sub>273
- 9 In the News: When Standards Are Unacceptable 274
- Applying the Concept: Deflation, Net Worth, and Information Costs 277

Mora! Hazard: Problem and Solutions 278

• Your Financial World: Private Mortgage Insurance 278

Financial Intermediaries and Information Costs 281

Screening and Certifying to Reduce Adverse Selection 281 Monitoring to Reduce Moral Hazard 282

 Applying the Concept; How Companies Finance Investment and Growth 282

Terms 284

Chapter Lessons 284

Problems 285

CHAPTER 12 DEPOSITORY INSTITUTIONS: BANKS AND BANK MANAGEMENT 286

The Balance Sheet of Commercial Banks 287

Assets: Uses of Funds 287

Liabilities: Sources of Funds 289

- Your Financial World: Choosing the Right Bank for You 291
- Tools of the Trade: A. Catalog of Depository Institutions 294

Bank Capita! and Profitability 295 9 Applying the Concept: U.S. Commercial Bank Profitability in the 1990s 296 O//-Ba!ance-Sheet Activities 298 9 Your Financial World: The Cost of Payday Loans Bank Risk: Where It Comes from and What to Do about It 299 Liquidity *Risk* 300 Credit Risk 302 ® Applying the Concept: Ending Discrimination in Lending 304 Interest-Rate Risk 304 Trading Risk 307 9 In the News: Financial Institutions Find It as Hard as Ever to Spot Rogue Traders 308 ^ Other Risks 309 9 Applying the Concept: The Collapse of Japanese Banks 312 Terms 314 Chapter Lessons 314 Problems 315 CHAPTER 13 FINANCIAL INDUSTRY STRUCTURE 317 • Banking Industry Structure 318 A Short History of U.S. Banking 318 Competition and Consolidation 320 The Globalization of Banking 324 The Future of Banks 326 © Your Financial World: Making Payments on Your Foreign Vacation 326 • In the News: Bringing Universal Banks Down to Earth 328 Nondepository Institutions 330 Insurance Companies 331 © Your Financial World: How Much Life Insurance Do You Need? 334 ® Applying the Concept: Reinsurance and "Cat Bonds" 336 Pension Funds 336 © Applying the Concept: Public Pensions and the Social Security System Securities Firms: Brokers, Mutual Funds, and Investment Banks 340 Finance Companies 341 9 Tools of the Trade: Hedge Funds 342 9 Your Financial World: Pawnshops 343 Government-Sponsored Enterprises 344 Terms 346

Chapter Lessons 346

Problems 347

CHAPTER 14	REGULATING THE FINANCIAL SYSTEM 349
T	he Sources and Consequences of Runs, Panics, and Crises 350
T	he Government Safety Net 354
	The Unique Role of Depository Institutions 355
	The Government as Lender of Last Resort 356
9	Your Financial World: Your Investments Are
	Your Responsibility 3.57
	Government Deposit Insurance 357
9	Applying the Concept: The Day the Bank of New York Borrowed \$23 Billion 358  Problems Created by the Government Safety Net 359
•	Applying the Concept: The Impact of Changing Deposit Insurance Limits 360
R	egulation and Supervision of the Financial System 360
®	Your Financial World: Are Your Deposits Insured? 362
	Restrictions on Competition 363
	Asset Holding Restrictions and Minimum Capital Requirements 364
	Disclosure Requirements 365
	Supervision and Examination 365
9	Tools of the Trade: The Basel Accords, Old and New 366 The Challenge to Regulators and Supervisors 367
•	Applying the Concept: The Horror of the Zombie S&Ls 368
	In the News*. Judging the Effects of New Rules on Bank Capital 370 erms 372
C	Chapter Lessons 372
	roblems 373
Central Baseline Stability	anks, Monetary Policy, and Financial
•	
CHAPTER 13	CENTRAL BANKS IN THE WORLD TODAY 376

# Part IV

Financial System Stability 383

The Basics: How Central Banks Originated and Their Role Today 377 The Government's Bank 377 The Bankers' Bank 378 Stability: The Primary Objective of All Central Banks 380 Low;, Stable Inflation 381 • Your Financial World: Why Inflation Is Bad for You 382 High, Stable Rea! Growth 383

> ® Applying the Concept: Stable Countries Grow Faster 384 Interest-Rate and Exchange-Rate Stability 386

Meeting the Challenge: Creating a Successful Central Bank The Need for Independence 388

```
Life? 388
               Decision Making by Committee 389
               The Need for Accountability and Transparency 389
            9 Applying the Concept: Independent Central Banks Deliver Lower
                            390
               Inflation
               The Policy Framework, Policy Trade-offs, and Credibility 392
            Fitting Everything Together: Central Banks and Fiscal Policy 393
            • In the News: A Little Bit of Inflation Could Go a Long Way
                                                                         394
            Terms 397
            Chapter Lessons
                              398
             Problems
CHAPTER 16 THE STRUCTURE OF CENTRAL BANKS: THE FEDERAL RESERVE AND
            THE EUROPEAN CENTRAL BANK
            The Structure of the Federal Reserve System
               The Federal Reserve Banks 403
               The Board of Governors 405
             9 Your Financial World: Treasury Direct 406
               The Federal Open Market Committee 407
             9 Tools of the Trade: Decoding the FOMC's Statement
                                                                  410
             Assessing the Federal Reserve System's Structure 411
               Independence from Political Influence
                                                  411
               Decision Making by Committee
                                             411
               Accountability and Transparency
                                              411
             9 Applying the Concept: The Evolution of Federal Reserve
                Independence 412
               Policy Framework 413
             The European Central Bank 413
             • Your Financial World: The Fed Can't Save You from a
               Stock-Market Crash 414
               Organizational Structure 415
               Accountability and Transparency 417
                The Price Stability Objective and Monetary Policy Strategy 418
             9 Applying the Concept: The New Bank of Japan
             • In the News: No Place Like Home
             Terms 423
             Chapter Lessons '423
             Problems 424
CHAPTER 17
             THE CENTRAL BANK BALANCE SHEET AND THE MONEY SUPPLY
             PROCESS
                        426
             The Central Bank's Balance Sheet 427
               Assets 428
                Liabilities 429
```

9 Your Financial World: Does News about the Fed Affect Your Daily

The Importance of Disclosure 431

Your Financial World: Why We Still Have Cash 431
 The Monetary Base 432

Changing the Size and Composition of the Balance Sheet 432

Open Market Operations 433

Foreign Exchange Intervention 434

Discount Loans 435

Cash Withdrawal 436

9 Applying the Concept: The Fed's Response on September 11, 2001 439

The Deposit Expansion Multiplier 440

Deposit Creation in a Single Bank 440

Deposit Expansion in a System of Banks 441

The Monetary Base and the Money Supply 445

Deposit Expansion with Excess Reserves and Cash Withdrawals 446
The Arithmetic of the Money Mu!tit>!ier 446

- Your Financial World: Your Excess Reserves 447
- Tools of the Trade: The Irrelevance of Reserve Requirements 450
- Applying the Concept: Monetary Policy in the 1930s 452
   The Limits of the Central Bank's Ability to Control the Quantity of Money 452

9 In the News: Record Federal Deficit Forecast 454

Terms 457

Chapter Lessons 457

Problems 458

CHAPTER 18 MONETARY POLICY: USING INTEREST RATES TO STABILIZE THE
DOMESTIC ECONOMY 460

The Federal Reserve's Monetary Policy Toolbox 461

The Target Federal Funds Rate and Open Market Operations 462

Discount Lending, the Lender of Last Resort,

and Crisis Management 464

- Your Financial World: What the Federal Funds Rate Means to You 465
- Tools of the Trade: The Mechanics of Open Market Operations 466 Reserve Requirements 469
- 9 Applying the Concept: Making January 1, 2000, Uneventful 470Operational Policy at the European Central Bank 472

The ECB's Target Interest Rate and Open Market Operations 472

The Marginal Lending Facility 473

The Deposit Facility 473

Reserve Requirements 474

Linking Tools to Objectives: Making Choices 475

Desirable	Features	of $a$	Policy	Instrument	475

- 9 Applying the Concept: Choosing an Operating Instrument 476
   Operating Instruments and Intermediate Targets 477
- 9 Applying the Concept: Inflation Targeting 478
- A Guide to Central Bank Interest Rates: The Taylor Rule 480
- Wour Financial World: Economic Flistory Is Constantly Changing 483
- In the News: Central Banks Move to Raise Rates as Inflation Fears Begin to Emerge 484

Terms 486

Chapter Lessons 486

Problems 487

#### CHAPTER 19 EXCHANGE-RATE POLICY AND THE CENTRAL BANK '489

Linking Exchange-Rate Policy with Domestic Monetary Policy 490

Inflation and the Long-Run Implications of Purchasing Power Parity
490

Interest Rates and the Short-Run Implications of Capital Market Arbitrage 492

Capital Controls and the Policymakers' Choice 493

Mechanics of Exchange-Rate Management 494

The Central Bank's Balance Sheet 495

- Applying the Concept: Malaysia Imposes Capital Controls 495
- Your Financial World: Emerging-Markets Crises and You 496
   Sterilized Intervention 498

The Costs, Benefits, and Risks of Fixed Exchange Rates 500

Assessing the Costs and Benefits 500

- 9 Your Financial World: Don't Bet on Exchange Rates 501
   The Danger of Speculative Attacks 502
   Summarizing the Case for a Fixed Exchange Rate 503
- 9 Applying the Concept: The Gold Standard: An Exchange-Rate Regime Whose Time Has Passed 504

Fixed Exchange-Rate Regimes 506

Exchange-Rate Pegs and the Bretton Woods System 506

- 9 Your Financial World: Should You Buy Gold? 507
- Tools of the Trade: The Role of the International Monetary Fund Today 508

Hard Pegs: Currency Boards and Dollarization 508

• • In the News: The False Promise of Dollarization 512

Terms 512

Chapter Lessons 512

Problems 514

Appendix 19: What You Really Need to Know about the Balance of >• Payments 516

# Part V Mod

ern Mone	etary Economics 518
CHAPTER 20	MONEY GROWTH, MONEY DEMAND, AND MODERN MONETARY POLICY 519
	Why We Care about Monetary Aggregates 520
	The Quantity Theory and the Velocity of Money 523
	Velocity and the Equation of Exchange 523
	9 Applying the Concept: Inflation and the Collapse of the Soviet Union 524
	The Quantity Theory of Money 526 The Facts about Velocity 527
	• Your Financial World: Understanding Inflation Statistics 528
	The Demand for Money 531
	• Applying the Concept: The. ECD's Reference Value for Money  Growth 532
	The Transactions Demand for Money 533
	Your Financial World: Free Checking Accounts
	Are Rarely Free 536
	The Portfolio Demand for Money 536
	Targeting Money Growth in a Low-Inflation Environment 537
	The Instability of U.S. Money Demand 538
	9 Tools of the Trade: Using Statistical Models
	in Policy Evaluation 541
	Targeting Money Growth: The Fed and the ECB 541
	<ul><li>9 Applying the Concept: Financial Innovation and the Shifting Velocity of Money 542</li></ul>
	• In the News: Dropping Anchor 546
	Terms 547
	Chapter Lessons 548
	Problems 549
CHAPTER 21	MODERN'MONETARY POLICY AND AGGREGATE DEMAND 550
	Output and Inflation in the Long Run 551
	Potential Output 551
	Long-Run Inflation 552
	Money Growth, Inflation, and Aggregate Demand 552
	• Your Financial World: Using the Word <i>Inflation</i> 554
	The Monetary Policy Reaction Curve 555
	Monetary Policy and the Real Interest Rate 555  Aggregate Demand and the Real Interest Rate 555
	O Tools of the Trade: Messuring Inflation Expectations 558

- 9 Tools of the Trade: Measuring Inflation Expectations 558 •
- Your Financial World: It's the Real Interest Rate That Matters 559
- Applying the Concept: Investment and the Business Cycle 560 The Long-Run Real Interest Rate 562

Inflation, the Real Interest Rate, and the Monetary Policy Reaction Curve 562

CHAPTER 22

## The Aggregate Demand Curve 570 Output, Inflation, 'and the Aggregate Demand Curve 570 The Slope of the Aggregate Demand Curve 571 Why the Aggregate Demand Curve Slotses Down 572 Shifting the Aggregate Demand Curve 573 ® Applying the Concept: The Remarkable 1990s • In the News: On Presidential Politics, the Fed Walks a Tightrope 579 Terms 580 Chapter Lessons - 580 Problems 582 UNDERSTANDING BUSINESS CYCLES The Aggregate Supply Curve 585 Inflation Persistence and the Short-Run Aggregate Substy Curve 585 Shifts in the Short-Run Aggregate Supply Curve 588 The Long-Run Aggregate Supply Curve 591 9 Your Financial World: The Problem with Measuring GDP • Tools of the Trade: Defining a Recession: The NBER Reference Cycle 594 Equilibrium and the Determination of Output and Inflation Short-Run Equilibrium 596 Adjustment to Long-Run Equilibrium 596 The Impact of Shifts in Aggregate Demand on Output and Inflation 9 Applying the Concept: Inflation and the Vietnam War © Your Financial World: Keeping Track of the Tax Code 602 The Impact of Inflation Shocks on Output and Inflation ' 602 Shifts in Potential Output and Real Business Cycle Theory 603 9 Applying the Concept: What Causes Recessions? 606 Stabilization Policy 606 Monetary Policy 606 Fiscal Policy 611 9 Applying the Concept: Do Tax Cuts Really Stimulate the Economy? 612 • In the News; The Real Threat of Stagnation 613 Terms 614 Chapter Lessons 615 Problems 616

CHAPTER 23	MONETARY POLICY, OUTPUT, AND INFLATION
	IN THE SHORT RUN 618
	The Monetary Policy Transmission Mechanism 621
	The Traditional Channels: Interest Rates and Exchange Rates 621
	Asset Price Channels: Wealth and Investment 622
	9 Tools of the Trade: Correlation Does Not Imply Causality 623
	Bank Lending and Balance-Sheet Channels 624
	9 Your Financial World: Don't Count on Inflation to Bail
	You Out 625
	The Challenges Modern Monetary Policymakers Face 627
	© Applying the Concept: What Happened in Japan? 628  Estimating Potential GDP 630
	• In the News: When It Comes to Crystal-Ball Gazing, the Fed Trounces the Private Sector 632
	Deflation and the Zero Nominal-Interest-Rate Bound 633
	# Applying the Concept: Inflation and Slow Growth in the 1970s 634
	Booms and Busts in Equity and Property Prices 638
	The Evolving Structure of the Financial System 639
	9 Your Financial World: Know the Level of Inflation 640
	Terms 641

Chapter Lessons 642

Problems 642

Glossary *G-0 Index 1-1*