# THE ECONOMICS OF MONEY, BANKING, AND FINANCIAL MARKETS

**Eleventh Edition** 

Global Edition

Frederic S. Mishkin

Columbia University

**PEARSON** 

# **Brief Contents**

PART 1	Introduction 47	
	1 Why Study Money, Banking, and Financial Markets?	48
	2 An Overview of the Financial System	
	3 What Is Money?	
PART 2	Financial Markets 109	
	4 The Meaning of Interest Rates	110
	5 The Behavior of Interest Rates	131
	6 The Risk and Term Structure of Interest Rates	162
	7 The Stock Market, the Theory of Rational Expectations, and the Efficient Market Hypothesis	186
PART 3	Financial Institutions 207	
	8 An Economic Analysis of Financial Structure	208
	9 Banking and the Management of Financial Institutions	
	10 Economic Analysis of Financial Regulation	
	11 Banking Industry: Structure and Competition	280
	12 Financial Crises in Advanced Economies	313
	13 Financial Crises in Emerging Economies	338
PART 4	Central Banking and the Conduct of Monetary Policy 359	
	14 Central Banks: A Global Perspective	360
	15 The Money Supply Process	386
	16 Tools of Monetary Policy	411
	17 The Conduct of Monetary Policy: Strategy and Tactics	436
PART 5	International Finance and Monetary Policy 469	
	18 The Foreign Exchange Market	470
	19 The International Financial System	497
PART 6	Monetary Theory 525	
	20 Quantity Theory, Inflation, and the Demand for Money	526
	21 The IS Curve	544
	22 The Monetary Policy and Aggregate Demand Curves	
	23 Aggregate Demand and Supply Analysis	
	24 Monetary Policy Theory	
	25 The Role of Expectations in Monetary Policy	
	26 Transmission Mechanisms of Monetary Policy	672

## Chapters on the Web

- 1 The ISLM Model
- 2 Nonbank Finance
- 3 Financial Derivatives
- 4 Conflicts of Interest in the Financial Services Industry

# Contents in Detail

PART 1

### Introduction 47 **CHAPTER 1** Why Study Money, Banking, and Financial Markets? 48 Why Study Financial Markets?......48 Why Study Financial Institutions and Banking?......51 Why Study Money and Monetary Policy?......53 Fiscal Policy and Monetary Policy ......57 Why Study International Finance?......58 The Foreign Exchange Market 58 Summary 61 • Key Terms 62 • Questions 62 • Applied Problems 63 • Data Analysis Problems 63 • Web Exercises 64 • Web References 64 **APPENDIX TO CHAPTER 1** Defining Aggregate Output, Income, the Price Level, and the Inflation Rate 65 Aggregate Output and Income .......65 Growth Rates and the Inflation Rate .......67 **CHAPTER 2** An Overview of the Financial System 68 Structure of Financial Markets......71

Financial Market Instruments	73
Money Market Instruments	73
Following the Financial News Money Market Rates 74	
Capital Market Instruments	75
<b>Following the Financial News</b> Capital Market Interest Rates 76	
Internationalization of Financial Markets	77
<b>Global</b> Are U.S. Capital Markets Losing Their Edge? 78	
International Bond Market, Eurobonds, and Eurocurrencies	
Function of Financial Intermediaries: Indirect Finance	79
<b>Following the Financial News</b> Foreign Stock Market Indexes 80	
Transaction Costs	80
<b>Global</b> The Importance of Financial Intermediaries Relative to Securities Markets: An International Comparison 81	
Risk Sharing	
Asymmetric Information: Adverse Selection and Moral Hazard	
Economies of Scope and Conflicts of Interest	
Types of Financial Intermediaries	
Depository Institutions	
Investment Intermediaries	
Regulation of the Financial System	88
Increasing Information Available to Investors	
Ensuring the Soundness of Financial Intermediaries	
Financial Regulation Abroad	91
CHAPTER 3 What Is Money? 95	
Meaning of Money	95
Functions of Money	
Medium of Exchange	
Unit of Account	
Evolution of the Payments System	
Commodity Money	
Fiat Money	
Checks	99
Electronic Payment	
E-Money	. 100

APPLICATION Will Bitcoin Become the Money of the Future?
The Federal Reserve's Monetary Aggregates
Following the Financial News The Monetary Aggregates 103
FYI Where Are All the U.S. Dollars? 104
Summary 105 • Key Terms 106 • Questions 106 • Applied Problems 107 • Data Analysis Problems 108 • Web Exercises 108 • Web References 108
Financial Markets 109
CHAPTER 4 The Meaning of Interest Rates 110
Measuring Interest Rates
APPLICATION Simple Present Value
APPLICATION How Much Is That Jackpot Worth? 112  Four Types of Credit Market Instruments 113  Yield to Maturity 114
APPLICATION Yield to Maturity on a Simple Loan114
APPLICATION Yield to Maturity and the Yearly Payment on a Fixed-Payment Loan116
APPLICATION Yield to Maturity and Bond Price for a Coupon Bond117
APPLICATION Yield to Maturity on a Perpetuity119
APPLICATION Yield to Maturity on a Discount Bond
The Distinction Between Interest Rates and Returns121
Maturity and the Volatility of Bond Returns: Interest-Rate Risk
Summary
APPLICATION Calculating Real Interest Rates
CHAPTER 4 WEB APPENDIX Measuring Interest-Rate Risk: Duration
Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin
CHAPTER 5 The Behavior of Interest Rates 131
Determinants of Asset Demand
Wealth 132 Expected Returns 132

Risk	132
Liquidity	133
Theory of Portfolio Choice	133
Supply and Demand in the Bond Market	134
Demand Curve	
Supply Curve	135
Market Equilibrium	136
Supply and Demand Analysis	137
Changes in Equilibrium Interest Rates	137
Shifts in the Demand for Bonds	138
Shifts in the Supply of Bonds	141
<b>APPLICATION</b> Changes in the Interest Rate Due to Expected Inflation:	
The Fisher Effect	143
<b>APPLICATION</b> Changes in the Interest Rate Due to a Business Cycle Expansion	145
APPLICATION Explaining Low Japanese Interest Rates	146
Supply and Demand in the Market for Money:	
The Liquidity Preference Framework	147
Changes in Equilibrium Interest Rates in the Liquidity Preference Framework	150
Shifts in the Demand for Money	
Shifts in the Supply of Money	
APPLICATION Changes in the Equilibrium Interest Rate Due to	
Changes in Income, the Price Level, or the Money Supply	151
Changes in Income	
Changes in the Price Level	
Changes in the Money Supply	
Money and Interest Rates	
•	1 3 3
<b>APPLICATION</b> Does a Higher Rate of Growth of the Money Supply	
Lower Interest Rates?	
Summary 158 • Key Terms 158 • Questions 158 • Applied Problems 159	,
Data Analysis Problems 160 • Web Exercises 161 • Web References 161	

### **CHAPTER 5 WEB APPENDIX 1**

### **Models of Asset Pricing**

Go to the Companion Website, http://www.pearsonglobal editions.com/Mishkin

### **CHAPTER 5 WEB APPENDIX 2**

Applying the Asset Market Approach to a Commodity Market: The Case of Gold

Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin

### **CHAPTER 5 WEB APPENDIX 3**

### **Loanable Funds Framework**

The Risk and Term Structure of Interest Rates 162	
Risk Structure of Interest Rates	162
Default Risk	
FYI Conflicts of Interest at Credit-Rating Agencies and the Global Financial Crisis	166
APPLICATION The Global Financial Crisis and the Baa-Treasury Spread	167 168
APPLICATION Effects of the Obama Tax Increase on Bond Interest Rates	169
Term Structure of Interest Rates	170
Following the Financial News Yield Curves 170	
Expectations Theory  Segmented Markets Theory  Liquidity Premium and Preferred Habitat Theories.  Evidence on the Term Structure.	175 176
<b>FYI</b> The Yield Curve as a Forecasting Tool for Inflation and the Business Cycle 180	
Summary	180
APPLICATION Interpreting Yield Curves, 1980–2014  Summary 182 • Key Terms 182 • Questions 182 • Applied Problems 184 • Data Analysis Problems 184 • Web Exercises 185 • Web References 185	180
CHAPTER 7 The Stock Market, the Theory of Rational Expectations, and the Efficient Market Hypothesis 186	
Computing the Price of Common Stock	186
The One-Period Valuation Model	
The Generalized Dividend Valuation Model	
How the Market Sets Stock Prices	
APPLICATION Monetary Policy and Stock Prices	
APPLICATION The Global Financial Crisis and the Stock Market	
The Theory of Rational Expectations	
Formal Statement of the Theory	
Rationale Behind the Theory	
Implications of the Theory	194
The Efficient Market Hypothesis: Rational Expectations in Financial Markets	
Rationale Behind the Hypothesis  Random-Walk Behavior of Stock Prices	
<b>Global</b> Should Foreign Exchange Rates Follow a Random Walk? 198	

APPLICATION Practical Guide to Investing in the Stock Market	198
How Valuable Are Reports Published by Investment Advisers?	198
Should You Be Skeptical of Hot Tips?	199
FYI Should You Hire an Ape as Your Investment Adviser? 200	
Do Stock Prices Always Rise When There Is Good News?	200
Efficient Market Prescription for the Investor	200
Why the Efficient Market Hypothesis Does Not Imply	
That Financial Markets Are Efficient	201
<b>APPLICATION</b> What Do Stock Market Crashes Tell Us About the Efficient	
Market Hypothesis and the Efficiency of Financial Markets?	202
Behavioral Finance	202
Summary 203 • Key Terms 204 • Questions 204 • Applied Problems 205 • Data Analysis Problems 206 • Web Exercises 206 • Web References 206	

### **CHAPTER 7 WEB APPENDIX**

### **Evidence on the Efficient Market Hypothesis**

Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin

207

# PART 3 Financial Institutions

# CHAPTER 8 An Economic Analysis of Financial Structure 208

Basic Facts About Financial Structure Throughout the World	208
Transaction Costs	211
How Transaction Costs Influence Financial Structure	211
How Financial Intermediaries Reduce Transaction Costs	212
Asymmetric Information: Adverse Selection and Moral Hazard	213
The Lemons Problem: How Adverse Selection Influences	
Financial Structure	213
Lemons in the Stock and Bond Markets	214
Tools to Help Solve Adverse Selection Problems	214
FYI The Enron Implosion 216	
How Moral Hazard Affects the Choice Between Debt	
and Equity Contracts	219
Moral Hazard in Equity Contracts: The Principal–Agent Problem	
Tools to Help Solve the Principal–Agent Problem	
How Moral Hazard Influences Financial Structure in Debt Markets	222
Tools to Help Solve Moral Hazard in Debt Contracts	
Summary	
APPLICATION Financial Development and Economic Growth	225
FYI The Tyranny of Collateral 226	

APPLICATION Is China a Counterexample to the Importance of Financial Development?	227
Summary 228 • Key Terms 229 • Questions 229 • Applied Problems 230 Data Analysis Problems 231 • Web Exercises 231 • Web References 231	
CHAPTER 9 Banking and the Management of Financial Institutions 232	
The Bank Balance Sheet	
Liabilities	
Assets	
Basic Banking	
General Principles of Bank Management	
Liquidity Management and the Role of Reserves	
Liability Management	
Capital Adequacy Management	
APPLICATION Strategies for Managing Bank Capital	
APPLICATION How a Capital Crunch Caused a Credit Crunch During the Global Financial Crisis	247
Managing Credit Risk	
Screening and Monitoring	
Long-Term Customer Relationships	
Loan Commitments	
Collateral and Compensating Balances	
Credit Rationing.	
Managing Interest-Rate Risk	
Gap and Duration Analysis	
APPLICATION Strategies for Managing Interest-Rate Risk	
Off-Balance-Sheet Activities	254
Loan Sales	
Generation of Fee Income	
Trading Activities and Risk Management Techniques	255
<b>Global</b> Barings, Daiwa, Sumitomo, Société Générale, and JP Morgan Chase: Rogue Traders and the Principal–Agent Problem 256	
Summary 257 • Key Terms 258 • Questions 258 • Applied Problems 259 Data Analysis Problems 259 • Web Exercises 260 • Web References 260	•
CHARTER O WER ARRESTOLV 4	

### CHAPTER 9 WEB APPENDIX 1

### **Duration Gap Analysis**

Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin

### **CHAPTER 9 WEB APPENDIX 2**

### Measuring Bank Performance

CHAPTER 10	
Economic Analysis of Financial Regulation 261	
Asymmetric Information as a Rationale for Financial Regulation	
<b>Global</b> The Spread of Government Deposit Insurance Throughout the World: Is This a Good Thing? 263	201
Drawbacks of the Government Safety Net	264
Types of Financial Regulation	
Restrictions on Asset Holdings	
Capital Requirements	
Prompt Corrective Action	
<b>Global</b> Where Is the Basel Accord Heading After the Global Financial Crisis?	268
Financial Supervision: Chartering and Examination	
Assessment of Risk Management	
Disclosure Requirements	2/1
<b>FYI</b> Mark-to-Market Accounting and the Global Financial Crisis 272	
Consumer Protection	
Restrictions on Competition	
Summary	273
Global International Financial Regulation 274	
Summary 277 • Key Terms 277 • Questions 277 • Applied Problems 278  Data Analysis Problems 278 • Web Exercises 279 • Web References 279	•
CHAPTER 10 WEB APPENDIX 1 The 1980s Banking and Savings and Loan Crisis	
Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin	
CHAPTER 10 WEB APPENDIX 2 Banking Crises Throughout the World	
Go to the Companion Website, $http://www.pearsonglobal editions.com/Mishkin$	
CHAPTER 11	
Banking Industry: Structure and Competition 280	
Historical Development of the Banking System	
Multiple Regulatory Agencies	
Financial Innovation and the Growth of the "Shadow Banking System"	
Responses to Changes in Demand Conditions: Interest-Rate Volatility	
<b>FYI</b> Will "Clicks" Dominate "Bricks" in the Banking Industry? 287	209
,	200
Securitization and the Shadow Banking System	

<b>FYI</b> Bruce Bent and the Money Market Mutual Fund Panic of 2008 291	
Financial Innovation and the Decline of Traditional Banking	292
Structure of the U.S. Commercial Banking Industry	
Restrictions on Branching.	
Response to Branching Restrictions	
Bank Consolidation and Nationwide Banking	
The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994	
What Will the Structure of the U.S. Banking Industry Look Like in the Future?	
Are Bank Consolidation and Nationwide Banking Good Things?	300
<b>Global</b> Comparison of Banking Structure in the United States and Abroad 301	
Separation of Banking and Other Financial Service Industries	302
Erosion of Glass-Steagall	302
The Gramm-Leach-Bliley Financial Services Modernization Act of 1999:	
Repeal of Glass-Steagall	
Implications for Financial Consolidation	303
<b>FYI</b> The Global Financial Crisis and the Demise of Large, Free-Standing Investment Banks 303	
Separation of Banking and Other Financial Services Industries	
Throughout the World	304
Thrift Industry: Regulation and Structure	304
Savings and Loan Associations	304
Mutual Savings Banks	
Credit Unions	
International Banking Eurodollar Market	
<b>Global</b> Ironic Birth of the Eurodollar Market 307	
Structure of U.S. Banking Overseas	307
Foreign Banks in the United States	
Summary 309 • Key Terms 310 • Questions 310 • Data Analysis	
Problems 311 • Web Exercises 312 • Web References 312	
CHARTER 42	
CHAPTER 12 Financial Crises in Advanced Economies 313	
	242
What Is a Financial Crisis?	
Dynamics of Financial Crises	
Stage One: Initial Phase	
Stage Two: Banking Crisis	
APPLICATION The Mother of All Financial Crises: The Great Depression  Stock Market Crash	
Bank Panics	
Continuing Decline in Stock Prices	
Debt Deflation	
International Dimensions	320

The Global Financial Crisis of 2007–2009	
Causes of the 2007–2009 Financial Crisis	320
FYI Collateralized Debt Obligations (CDOs) 321	
Effects of the 2007–2009 Financial Crisis.	322
<b>Inside the Fed</b> Was the Fed to Blame for the Housing Price Bubble? 323	
<b>Global</b> The European Sovereign Debt Crisis 326	
Height of the 2007–2009 Financial Crisis	327
Government Intervention and the Recovery	
Short-term Responses and Recovery	
<b>Global</b> Latvia's Different and Controversial Response: Expansionary Contraction	329
Stabilizing the Global Financial System: Long-term Responses	
Global Financial Regulatory Framework	
Policy Areas at the National Level	330
FYI The LIBOR Scandal 332	
Future Regulations and Policy Areas at the International Level	333
Bilateral and Multilateral Supervisory Cooperation	
Collective Supervisory Cooperation	
Collectively Coordinated Macroeconomic Stability Plans	
Self-Discipline	334
Problems 336 • Web Exercises 337 • Web References 337  CHAPTER 13  Financial Crises in Emerging Economies 338	
	220
Dynamics of Financial Crises in Emerging Market Economies	
Stage Two: Currency Crisis	
Stage Three: Full-Fledged Financial Crisis	
APPLICATION Crisis in South Korea, 1997–1998	
Financial Liberalization and Globalization Mismanaged	345
Perversion of the Financial Liberalization and Globalization Process: Chaebols	246
and the South Korean Crisis.	
Stock Market Decline and Failure of Firms Increase Uncertainty	
Adverse Selection and Moral Hazard Problems Worsen, and the Economy Contracts  Currency Crisis Ensues	
Final Stage: Currency Crisis Triggers Full-Fledged Financial Crisis	
Recovery Commences	
APPLICATION The Argentine Financial Crisis, 2001–2002	350
Severe Fiscal Imbalances	
Adverse Selection and Moral Hazard Problems Worsen	
Bank Panic Begins	351
Currency Crisis Ensues	0 ~ 1

Currency Crisis Triggers Full-Fledged Financial Crisis	
<b>Global</b> When an Advanced Economy Is Like an Emerging Market Economy: The Icelandic Financial Crisis of 2008 355	
Preventing Emerging Market Financial Crises	355
Beef Up Prudential Regulation and Supervision of Banks	
Encourage Disclosure and Market-Based Discipline	
Limit Currency Mismatch	356
Sequence Financial Liberalization	357
Summary 357 • Rey Terms 357 • Questions 358	
Central Banking and the Conduct of Monetary Policy	359
CHAPTER 14 Central Banks: A Global Perspective 360	
Origins of the Federal Reserve System	360
Structure of the Federal Reserve System	361
Federal Reserve Banks	361
Member Banks	
Board of Governors of the Federal Reserve System	
Federal Open Market Committee (FOMC)	364
<b>Inside the Fed</b> The FOMC Meeting 365	
How Independent Is the Fed?	366
Inside the Fed Styles of Federal Reserve Chairs: Bernanke and Yellen Versus Greenspan 366	
Should the Fed Be Independent?	368
The Case for Independence	
The Case Against Independence	
Central Bank Independence and Macroeconomic Performance Throughout the World	370
Explaining Central Bank Behavior	371
Structure and Independence of the European Central Bank	371
Governing Council Executive Board and General Council	372
Central Banks Round the World	376
Central Banks in Developing Countries and Emerging Economies	377
<b>Global</b> Islamic Finance: Alternative Ethical Solutions to Financial Stability 378	
People's Bank of China	379
Multinational Central Banks in Developing Countries	
Central Bank Reforms in South America	380
Currency Unions in Developing Nations	380
Structure and Independence of Other Foreign Central Banks	381
Bank of Canada	381
Bank of England	381

Bank of Japan	382
The Trend Toward Greater Independence	
Summary 383 • Key Terms 383 • Questions 383 • Data Analysis	
Problems 384 • Web Exercises 385 • Web References 385	
CHAPTER 15	
The Money Supply Process 386	
Three Players in the Money Supply Process	386
The Fed's Balance Sheet	
Liabilities.	
Assets	
Control of the Monetary Base	388
Federal Reserve Open Market Operations.	
Shifts from Deposits into Currency	
Loans to Financial Institutions	391
Other Factors That Affect the Monetary Base	391
Overview of the Fed's Ability to Control the Monetary Base	392
Multiple Deposit Creation: A Simple Model	393
Deposit Creation: The Single Bank	393
Deposit Creation: The Banking System	
Deriving the Formula for Multiple Deposit Creation	
Critique of the Simple Model	398
Factors That Determine the Money Supply	
Changes in the Nonborrowed Monetary Base, $MB_n$	
Changes in Borrowed Reserves, BR, from the Fed	
Changes in the Required Reserve Ratio, rr	
Changes in Excess Reserves	
Changes in Currency Holdings	
Overview of the Money Supply Process	
The Money Multiplier	
Deriving the Money Multiplier	
Intuition Behind the Money Multiplier	
Money Supply Response to Changes in the Factors	404
<b>APPLICATION</b> Quantitative Easing and the Money Supply, 2007–2014	
Summary 407 • Key Terms 407 • Questions 407 • Applied Problems 408	•
Data Analysis Problems 409 • Web Exercises 409 • Web References 410	

### **CHAPTER 15 WEB APPENDIX 1**

The Fed's Balance Sheet and the Monetary Base

Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin

### **CHAPTER 15 WEB APPENDIX 2**

The M2 Money Multiplier

### **CHAPTER 15 WEB APPENDIX 3**

### **Explaining the Behavior of the Currency Ratio**

Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin

### **CHAPTER 15 WEB APPENDIX 4**

### The Great Depression Bank Panics, 1930–1933, and the Money Supply

CHAPTER 16 Tools of Monetary Policy 411	
The Market for Reserves and the Federal Funds Rate	411
Demand and Supply in the Market for Reserves	412
How Changes in the Tools of Monetary Policy Affect the Federal Funds Rate	413
APPLICATION How the Federal Reserve's Operating Procedures Limit Fluctuations in the Federal Funds Rate	417
Conventional Monetary Policy Tools	
Open Market Operations	
Discount Policy and the Lender of Last Resort	
<b>Inside the Fed</b> A Day at the Trading Desk 420	
Reserve Requirements	422
Inside the Fed Using Discount Policy to Prevent a Financial Panic 423	
Interest on Reserves	424
Relative Advantages of the Different Tools	424
Nonconventional Monetary Policy Tools and Quantitative Easing	
Liquidity Provision	
Large-Scale Asset Purchases	426
<b>Inside the Fed</b> Fed Lending Facilities During the Global Financial Crisis 427	
Quantitative Easing Versus Credit Easing	
Forward Guidance and the Commitment to Future Policy Actions	430
Monetary Policy Tools of the European Central Bank	
Open Market Operations	
Lending to Banks	
Reserve Requirements	
Summary 432 • Key Terms 433 • Questions 433 • Applied Problems 434 • Data Analysis Problems 435 • Web Exercises 435 • Web References 435	•
CHAPTER 17	
The Conduct of Monetary Policy: Strategy and Tactics 436	
The Price Stability Goal and the Nominal Anchor	
The Role of a Nominal Anchor	
The Time-Inconsistency Problem	
Other Goals of Monetary Policy	
High Employment and Output Stability	438

Economic Growth	
Stability of Financial Markets	
Interest-Rate Stability	
Stability in Foreign Exchange Markets	
Should Price Stability Be the Primary Goal of Monetary Policy?	
Hierarchical Versus Dual Mandates	
Price Stability as the Primary, Long-Run Goal of Monetary Policy	
Inflation Targeting	.441
Inflation Targeting in New Zealand, Canada, and the United Kingdom	
Advantages of Inflation Targeting	
Disadvantages of Inflation Targeting	
The Evolution of the Federal Reserve's Monetary Policy Strategy	
The Fed's "Just Do It" Monetary Policy Strategy	
The Long Road to Inflation Targeting	. 449
<b>Inside the Fed</b> Ben Bernanke's Advocacy of Inflation Targeting 449	
<b>Global</b> The European Central Bank's Monetary Policy Strategy 450	
Lessons for Monetary Policy Strategy from the Global Financial Crisis	.451
Implications for Inflation Targeting	
Should Central Banks Try to Stop Asset-Price Bubbles?	
Two Types of Asset-Price Bubbles	
The Debate Over Whether Central Banks Should	
Try to Pop Bubbles	.454
Tactics: Choosing the Policy Instrument	.457
Criteria for Choosing the Policy Instrument	
Tactics: The Taylor Rule	
,	
Inside the Fed The Fed's Use of the Taylor Rule 463	
Inside the Fed Fed Watchers 463	
Summary 464 • Key Terms 464 • Questions 465 • Applied Problems 466 • Data Analysis Problems 466 • Web Exercises 467 • Web References 468	
CHAPTER 17 WEB APPENDIX 1  Monetary Targeting  Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin	
35 to the Companion website, http://www.pearsongiobaleditions.com//wishkin	
CHAPTER 17 WEB APPENDIX 2 A Brief History of Federal Reserve Policymaking Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin	
International Finance and Manatany Policy 440	

### International Finance and Monetary Policy 469

### **CHAPTER 18**

### The Foreign Exchange Market 470

Foreign Exchange Market	470
What Are Foreign Exchange Rates?	471

Following the Financial News Foreign Exchange Rates 472	
Why Are Exchange Rates Important?	472
How Is Foreign Exchange Traded?	
Exchange Rates in the Long Run	
Law of One Price	
Theory of Purchasing Power Parity	474
Why the Theory of Purchasing Power Parity Cannot Fully Explain Exchange Rates	
Factors That Affect Exchange Rates in the Long Run	476
Exchange Rates in the Short Run: A Supply and Demand Analysis	
Supply Curve for Domestic Assets	
Demand Curve for Domestic Assets	
Equilibrium in the Foreign Exchange Market	
Explaining Changes in Exchange Rates	
Shifts in the Demand for Domestic Assets	
Recap: Factors That Change the Exchange Rate	483
APPLICATION Effects of Changes in Interest Rates on the Equilibrium Exchange Rate	485
APPLICATION Why Are Exchange Rates So Volatile?	486
APPLICATION The Dollar and Interest Rates	487
APPLICATION The Global Financial Crisis and the Dollar  Summary 489 • Key Terms 489 • Questions 489 • Applied Problems 490 • Data Analysis Problems 491 • Web Exercises 491 • Web References 492  APPENDIX TO CHAPTER 18  The Interest Parity Condition 493	
Comparing Expected Returns on Domestic and Foreign Assets	493
Interest Parity Condition	
CHAPTER 19 The International Financial System 497 Intervention in the Foreign Exchange Market Foreign Exchange Intervention and the Money Supply.	497
Inside the Fed A Day at the Federal Reserve Bank of New York's Foreign Exchange Desk 498	
Unsterilized Intervention	
Balance of Payments	
<b>Global</b> Why the Large U.S. Current Account Deficit Worries Economists 503	
Exchange Rate Regimes in the International Financial System	503
Gold Standard	
The Bretton Woods System	
How a Fixed Exchange Rate Regime Works	
Speculative Attacks	506

APPLICATION The Foreign Exchange Crisis of September 1992  The Policy Trilemma	
APPLICATION How Did China Accumulate \$4 Trillion	
of International Reserves?	509
Monetary Unions	510
<b>Global</b> Will the Euro Survive? 511	
Managed Float	511
Capital Controls	512
Controls on Capital Outflows	512
Controls on Capital Inflows	512
The Role of the IMF	513
Should the IMF Act as an International Lender of Last Resort?	513
International Considerations and Monetary Policy	514
Direct Effects of the Foreign Exchange Market on Monetary Policy	514
Balance-of-Payments Considerations	
Exchange Rate Considerations	515
To Peg or Not to Peg: Exchange-Rate Targeting as an Alternative Monetary Policy Strategy	515
Advantages of Exchange-Rate Targeting.	
Disadvantages of Exchange-Rate Targeting	
When Is Exchange-Rate Targeting Desirable for Industrialized Countries?	
When Is Exchange-Rate Targeting Desirable for Emerging Market	
Countries?	
Currency Boards	519
<b>Global</b> Argentina's Currency Board 520	
Dollarization	521
Summary 521 • Key Terms 522 • Questions 522 • Applied Problems 523  Data Analysis Problems 524 • Web Exercises 524 • Web References 524	•
Monetary Theory 525	
CHAPTER 20 Quantity Theory, Inflation, and the Demand for Money 526	
Quantity Theory of Money	526
Velocity of Money and Equation of Exchange	
From the Equation of Exchange to the Quantity Theory of Money	
Quantity Theory and the Price Level	
Quantity Theory and Inflation	529
APPLICATION Testing the Quantity Theory of Money	530
Budget Deficits and Inflation	
Government Budget Constraint	
Hyperinflation	
APPLICATION The Zimbabwean Hyperinflation	534

Keynesian Theories of Money Demand	
Transactions Motive	
Precautionary Motive	
Speculative Motive	
Portfolio Theories of Money Demand  Theory of Portfolio Choice and Keynesian Liquidity Preference	
Other Factors That Affect the Demand for Money	
Summary	
Empirical Evidence for the Demand for Money	
Interest Rates and Money Demand	
Stability of Money Demand	
Summary 540 • Key Terms 540 • Questions 540 • Applied Problems 542	•
Data Analysis Problems 542 • Web Exercises 543 • Web References 543	
CHAPTER 20 WEB APPENDIX 1	
The Baumol-Tobin and Tobin Mean Variance Model	
Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin	
· · · · · · · · · · · · · · · · · · ·	
CHAPTER 20 WEB APPENDIX 2	
Empirical Evidence on the Demand for Money	
•	
Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin	
CHAPTER 21	
The IS Curve 544	
Planned Expenditure and Aggregate Demand	544
The Components of Aggregate Demand	
Consumption Expenditure	
	5 15
<b>FYI</b> Meaning of the Word <i>Investment</i> 546	
Planned Investment Spending	546
Net Exports	
Government Purchases and Taxes	549
Goods Market Equilibrium	550
Solving for Goods Market Equilibrium	
Deriving the IS Curve	551
Understanding the IS Curve	
What the IS Curve Tells Us: Intuition	
What the IS Curve Tells Us: Numerical Example	
Why the Economy Heads Toward Equilibrium	
Factors That Shift the IS Curve	
Changes in Government Purchases	553
APPLICATION The Vietnam War Buildup, 1964–1969	554

APPLICATION The Fiscal Stimulus Package of 2009	556
Changes in Autonomous Spending	557
Changes in Financial Frictions	
Summary of Factors That Shift the IS Curve	559
Summary 559 • Key Terms 559 • Questions 560 • Applied Problems 561 • Data Analysis Problems 562 • Web Exercises 563 • Web References 563	
CHAPTER 22 The Monetary Policy and Aggregate Demand Curves 564	
The Federal Reserve and Monetary Policy	564
The Monetary Policy Curve	
The Taylor Principle: Why the Monetary Policy Curve Has an Upward Slope	
Shifts in the MP Curve	
Movements Along Versus Shifts In the MP Curve	568
<b>APPLICATION</b> Movement Along the MP Curve:	
The Rise in the Federal Funds Rate Target, 2004–2006	568
<b>APPLICATION</b> Shift in the MP Curve: Autonomous Monetary	
Easing at the Onset of the Global Financial Crisis	568
The Aggregate Demand Curve	569
Deriving the Aggregate Demand Curve Graphically	
Factors That Shift the Aggregate Demand Curve	571
FYI Deriving the Aggregate Demand Curve Algebraically 571	
Summary 575 • Key Terms 575 • Questions 575 • Applied Problems 576 • Data Analysis Problems 577 • Web Exercises 578 • Web References 578	
CHAPTER 23 Aggregate Demand and Supply Analysis 579	
Aggregate Demand	579
Following the Financial News Aggregate Output, Unemployment, and Inflation	
Deriving the Aggregate Demand Curve	
Factors That Shift the Aggregate Demand Curve	581
FYI What Does Autonomous Mean? 582	
Aggregate Supply	585
Long-Run Aggregate Supply Curve	585
Short-Run Aggregate Supply Curve	
Price Stickiness and the Short-Run Aggregate Supply Curve	587
Shifts in the Aggregate Supply Curves	
Shifts in the Long-Run Aggregate Supply Curve	
Shifts in the Short-Run Aggregate Supply Curve	
Equilibrium in Aggregate Demand and Supply Analysis	
Short-Run Equilibrium	
How the Short-Run Equilibrium Moves to the Long-Run Equilibrium over Time	
Self-Correcting Mechanism	193

Changes in Equilibrium: Aggregate Demand Shocks	595
APPLICATION The Volcker Disinflation, 1980–1986	596
APPLICATION Negative Demand Shocks, 2001–2004	598
Changes in Equilibrium: Aggregate Supply (Inflation) Shocks Temporary Supply Shocks	
APPLICATION Negative Supply Shocks, 1973–1975 and 1978–1980  Permanent Supply Shocks and Real Business Cycle Theory	
APPLICATION Positive Supply Shocks, 1995–1999 Conclusions	
APPLICATION Negative Supply and Demand Shocks and the 2007–2009 Financial Crisis	606
AD/AS Analysis of Foreign Business Cycle Episodes	606
APPLICATION The United Kingdom and the 2007–2009 Financial Crisis	608
APPLICATION China and the 2007–2009 Financial Crisis	
APPENDIX TO CHAPTER 23 The Phillips Curve and the Short-Run Aggregate Supply Curve 614 The Phillips Curve	
Phillips Curve Analysis in the 1960s	614
<b>FYI</b> The Phillips Curve Tradeoff and Macroeconomic Policy in the 1960s 616	
The Friedman-Phelps Phillips Curve Analysis  The Phillips Curve After the 1960s  The Modern Phillips Curve  The Modern Phillips Curve with Adaptive (Backward-Looking)	618
Expectations	619
The Short-Run Aggregate Supply Curve	620

### **CHAPTER 23 WEB APPENDIX 1**

The Effects of Macroeconomic Shocks on Asset Prices

Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin

### **CHAPTER 23 WEB APPENDIX 2**

Aggregate Demand and Supply: A Numerical Example

Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin

### **CHAPTER 23 WEB APPENDIX 3**

The Algebra of the Aggregate Demand and Supply Model

### **CHAPTER 23 WEB APPENDIX 4**

### The Taylor Principle and Inflation

Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin

Monetary Policy Theory 623	
Response of Monetary Policy to Shocks	
Response to an Aggregate Demand Shock	
Response to a Permanent Supply Shock	
Response to a Temporary Supply Shock	628
and Stabilizing Economic Activity	631
How Actively Should Policymakers Try to Stabilize Economic Activity?	631
Lags and Policy Implementation	
Inflation: Always and Everywhere a Monetary Phenomenon	632
<b>FYI</b> The Activist/Nonactivist Debate Over the Obama Fiscal Stimulus Package	633
Causes of Inflationary Monetary Policy	633
High Employment Targets and Inflation	
APPLICATION The Great Inflation	637
Monetary Policy at the Zero Lower Bound	639
Deriving the Aggregate Demand Curve with the Zero Lower Bound	639
The Disappearance of the Self-Correcting Mechanism at the	
Zero Lower Bound	641
APPLICATION Nonconventional Monetary Policy	
and Quantitative Easing	
Liquidity Provision	
Asset Furchases and Quantitative Easing	
APPLICATION Abenomics and the Shift in Japanese Monetary Policy in 2013	646
Summary 648 • Key Terms 648 • Questions 649 • Applied Problems 650	
Data Analysis Problems 650 • Web Exercises 651 • Web References 651	
CHAPTER 25	
The Role of Expectations in Monetary Policy 652	
Lucas Critique of Policy Evaluation	652
Econometric Policy Evaluation	653
APPLICATION The Term Structure of Interest Rates	
Policy Conduct: Rules or Discretion?	
Discretion and the Time-Inconsistency Problem	654

Types of Rules 655
The Case for Rules 655

FYI The Political Business Cycle and Richard Nixon 656	
The Case for Discretion	
<b>Global</b> The Demise of Monetary Targeting in Switzerland 657	
The Role of Credibility and a Nominal Anchor.  Benefits of a Credible Nominal Anchor.  Credibility and Aggregate Demand Shocks.  Credibility and Aggregate Supply Shocks	658 659
APPLICATION A Tale of Three Oil Price Shocks	
<b>Global</b> Ending the Bolivian Hyperinflation: A Successful Anti-Inflation Program	665
APPLICATION Credibility and the Reagan Budget Deficits	667
<b>Inside the Fed</b> The Appointment of Paul Volcker, Anti-Inflation Hawk 668	
Appoint "Conservative" Central Bankers	668
CHAPTER 26 Transmission Mechanisms of Monetary Policy 672	
Transmission Mechanisms of Monetary Policy  Traditional Interest-Rate Channels  Other Asset Price Channels  Credit View	673 674
FYI Consumers' Balance Sheets and the Great Depression 679	
Why Are Credit Channels Likely to Be Important?	680
APPLICATION The Great Recession.  Lessons for Monetary Policy	
APPLICATION Applying the Monetary Policy Lessons to Japan's Two Lost Decades  Summary 684 • Key Terms 684 • Questions 684 • Applied Problems 685 •  Data Analysis Problems 686 • Web Exercises 686 • Web References 687	683
CHAPTER 26 WEB APPENDIX Evaluating Empirical Evidence: The Debate Over the Importance of Money in Economic Fluctuations	
Go to the Companion Website, http://www.pearsonglobaleditions.com/Mishkin	
Glossary	689
Index	701

### Contents on the Web

The following chapters are available on our Companion Website at http://www.pearsonglobaleditions.com/Mishkin

WEB CHAPTER 1 The ISLM Model W-1	
Keynes's Fixed Price Level Assumption and the IS Curve	
The LM Curve	
Equilibrium in the Market for Money: The LM Curve	W-2
ISLM Approach to Aggregate Output and Interest Rates	W-4
Factors That Cause the LM Curve to Shift	W-5
Changes in Equilibrium Level of the Interest Rate and Aggregate Output Response to a Change in Monetary Policy	W-7
APPLICATION The Economic Stimulus Act of 2008	W-9
Effectiveness of Monetary Versus Fiscal Policy	
APPLICATION Targeting Money Supply Versus Interest Rates	W-13
Summary W-18 • Key Terms W-19 • Questions and Applied Problems W- Web Exercises W-19 • Web References W-20	W-16
Algebra of the ISLM Model W-21  Basic Closed-Economy ISLM Model	W-22 W-22
Open-Economy <i>ISLM</i> Model	
Implications	W-24
WEB CHAPTER 2 Nonbank Finance W-1	
Insurance	W-1
Life Insurance	
Property and Casualty Insurance	
The Competitive Threat from the Banking Industry	
FYI The AIG Blowup W-5	
<b>FYI</b> The Global Financial Crisis and the Monoline Insurers W-6	
APPLICATION Insurance Management	
Screening	
Restrictive Provisions	

Prevention of Fraud	W-8
Cancellation of Insurance	W-8
Deductibles	W-8
Coinsurance	
Limits on the Amount of Insurance	
Summary	W-9
Pension Funds	W-9
Private Pension Plans	W-10
Public Pension Plans	W-11
FYI Should Social Security Be Privatized? W-11	
Finance Companies	W-12
Securities Market Operations	W-13
Investment Banking	
Securities Brokers and Dealers	W-14
Organized Exchanges	W-14
Mutual Funds	W-15
FYI Sovereign Wealth Funds: Are They a Danger? W-16	
Money Market Mutual Funds	
Hedge Funds	W-17
Private Equity and Venture Capital Funds	W-18
Government Financial Intermediation	W-19
Federal Credit Agencies	
FYI The Global Financial Crisis and the Bailout of Fannie Mae and Fred	
SummaryW-21 • Key TermsW-22 • Questions W-22 • Applied Production Data Analysis Problems W-23 • Web Exercises W-24 • Web Refe	
WEB CHAPTER 3 Financial Derivatives W-1	\V/ 1
Hedging	
Interest-Rate Forward Contracts	W-2
APPLICATION Hedging with Interest-Rate Forward Contracts  Pros and Cons of Forward Contracts	
Financial Futures Contracts and Markets	
APPLICATION Hedging with Financial Futures	\X/_5
Organization of Trading in Financial Futures Markets	
The Globalization of Financial Futures Markets	
Explaining the Success of Futures Markets	
•	
APPLICATION Hedging Foreign Exchange Risk	
Hedging Foreign Exchange Risk with Forward Contracts	
Hedging Foreign Exchange Risk with Futures Contracts	
Options	
Options Contracts	
Profits and Losses on Option and Futures Contracts	W-12

APPLICATION Hedging with Future Options	W-15
Factors Affecting Option Premiums	
Summary	W-17
Swaps	
Interest-Rate Swap Contracts	W-18
APPLICATION Hedging with Interest-Rate Swaps	W-19
Advantages of Interest-Rate Swaps	W-19
Disadvantages of Interest-Rate Swaps	
Financial Intermediaries in Interest-Rate Swaps	
Credit Derivatives	
Credit Options	
Credit Swaps	
	VV-ZZ
APPLICATION Lessons from the Global Financial Crisis: When are Financial Derivatives Likely to Be a Worldwide Time Bomb?	
WEB CHAPTER 4 Conflicts of Interest in the Financial Industry W-1	
What Are Conflicts of Interest, and Why Are They Important?	W-2
Why Do We Care About Conflicts of Interest?	
Ethics and Conflicts of Interest	W-2
Types of Conflicts of Interest	
Underwriting and Research in Investment Banking	
Auditing and Consulting in Accounting Firms	
Credit Assessment and Consulting in Credit-Rating Agencies	W-4
FYI The Collapse of Arthur Andersen W-5	
Universal Banking	W-5
<b>FYI</b> Why Do Issuers of Securities Pay to Have Their Securities Rated? W-6	
FYI Banksters W-7	
Can the Market Limit Exploitations of Conflicts of Interest?	W-7
What Has Been Done to Remedy Conflicts of Interest?	W-9
Sarbanes-Oxley Act of 2002	W-9
<b>Global</b> Legal Settlement of 2002 W-10	
Dodd-Frank Bill of 2010	W-11
A Framework for Evaluating Policies to Remedy Conflicts of Interest	
APPLICATION Evaluating Sarbanes-Oxley, the Global Legal Settlement, and the Dodd-Frank Bill	