

The background of the cover features a large, stylized seal of the United States Federal Reserve System. The seal is circular and contains an eagle with its wings spread, perched atop a classical building with columns. The words "FEDERAL RESERVE SYSTEM" are visible around the perimeter of the seal, and "UNITED STATES" is at the top. The entire seal is rendered in a high-contrast, black and white style.

**THE ECONOMICS OF
MONEY,
BANKING,
AND FINANCIAL
MARKETS**

GLOBAL EDITION

Tenth Edition

Frederic S. Mishkin
Columbia University

PEARSON

Boston · Columbus · Indianapolis · New York · San Francisco · Upper Saddle River
Amsterdam · Cape Town · Dubai · London · Madrid · Milan · Munich · Paris · Montreal · Toronto
Delhi · Mexico City · São Paulo · Sydney · Hong Kong · Seoul · Singapore · Taipei · Tokyo

Contents

PART 1

INTRODUCTION 43

CHAPTER 1

Why Study Money, Banking, and Financial Markets?	44
Why Study Financial Markets?	44
The Bond Market and Interest Rates	44
The Stock Market	46
Why Study Financial Institutions and Banking?	46
Structure of the Financial System	47
Financial Crises	48
Banks and Other Financial Institutions	48
Financial Innovation	48
Why Study Money and Monetary Policy?	49
Money and Business Cycles	49
Money and Inflation	49
Money and Interest Rates	52
Conduct of Monetary Policy	52
Fiscal Policy and Monetary Policy	53
Why Study International Finance?	54
The Foreign Exchange Market	54
The International Financial System	56
How We Will Study Money, Banking, and Financial Markets	56
Exploring the Web	57
Collecting and Graphing Data	57
Web Exercises	57
Concluding Remarks	58
Summary 59 • Key Terms 60 • Questions 61 • Applied Problems 62 • Web Exercises 62 • Web References 63	

APPENDIX TO CHAPTER 1

Defining Aggregate Output, Income, the Price Level, and the Inflation Rate	64
Aggregate Output and Income	64
Real Versus Nominal Magnitudes	64
Aggregate Price Level	65
Growth Rates and the Inflation Rate	66

CHAPTER 2

An Overview of the Financial System	67
Function of Financial Markets	67
Structure of Financial Markets	69
Debt and Equity Markets	69
Primary and Secondary Markets	70

Exchanges and Over-the-Counter Markets	71
Money and Capital Markets	71
Financial Market Instruments	72
Money Market Instruments	72
Following the Financial News Money Market Rates 73	
Capital Market Instruments	74
Following the Financial News Capital Market Interest Rates 75	
Internationalization of Financial Markets	76
Global Are U.S. Capital Markets Losing Their Edge? 77	
International Bond Market, Eurobonds, and Eurocurrencies	77
World Stock Markets	78
Function of Financial Intermediaries: Indirect Finance	78
Following the Financial News Foreign Stock Market Indexes 79	
Transaction Costs	79
Global The Importance of Financial Intermediaries Relative to Securities Markets: An International Comparison 80	
Risk Sharing	80
Asymmetric Information: Adverse Selection and Moral Hazard	81
Economies of Scope and Conflicts of Interest	83
Types of Financial Intermediaries	83
Depository Institutions	83
Contractual Savings Institutions	85
Investment Intermediaries	86
Regulation of the Financial System	87
Increasing Information Available to Investors	87
Ensuring the Soundness of Financial Intermediaries	87
Financial Regulation Abroad	90
Summary 90 • Key Terms 91 • Questions 91 • Applied Problems 92 • Web Exercises 93 • Web References 93	

CHAPTER 3

What Is Money? 94

Meaning of Money	94
Functions of Money	95
Medium of Exchange	95
Unit of Account	96
Store of Value	97
Evolution of the Payments System	98
Commodity Money	98
Fiat Money	98
Checks	98
Electronic Payment	99
E-Money	99

FYI Are We Headed for a Cashless Society? 100

Measuring Money 100
 The Federal Reserve's Monetary Aggregates 101
Following the Financial News: The Monetary Aggregates 102
FYI Where Are All the U.S. Dollars? 102
 Summary 104 • Key Terms 104 • Questions 104 • Applied Problems 106 •
 Web Exercises 106 • Web References 106

PART 2

FINANCIAL MARKETS 107

CHAPTER 4

Understanding Interest Rates 108
 Measuring Interest Rates 108
 Present Value 108
APPLICATION Simple Present Value 110
APPLICATION How Much Is That Jackpot Worth? 110
 Four Types of Credit Market Instruments 111
 Yield to Maturity 112
APPLICATION Yield to Maturity on a Simple Loan 112
APPLICATION Yield to Maturity and the Yearly Payment
 on a Fixed-Payment Loan 114
APPLICATION Yield to Maturity and the Bond Price for a Coupon Bond 115
APPLICATION Perpetuity 117
Global Negative T-Bill Rates? It Can Happen 119
 The Distinction Between Interest Rates and Returns 119
 Maturity and the Volatility of Bond Returns: Interest-Rate Risk 122
 Summary 123
 The Distinction Between Real and Nominal Interest Rates 123
APPLICATION Calculating Real Interest Rates 124
FYI With TIPS, Real Interest Rates Have Become Observable in the United States 126
 Summary 126 • Key Terms 126 • Questions 127 • Applied Problems 127 •
 Web Exercises 128 • Web References 129 • Web Appendices 129

CHAPTER 5

The Behavior of Interest Rates 130
 Determinants of Asset Demand 130
 Wealth 131
 Expected Returns 131
 Risk 131
 Liquidity 132
 Theory of Portfolio Choice 132
 Supply and Demand in the Bond Market 133
 Demand Curve 133

Supply Curve	134
Market Equilibrium	135
Supply and Demand Analysis	136
Changes in Equilibrium Interest Rates	136
Shifts in the Demand for Bonds	136
Shifts in the Supply of Bonds	140
APPLICATION Changes in the Interest Rate Due to Expected Inflation: The Fisher Effect	142
APPLICATION Changes in the Interest Rate Due to a Business Cycle Expansion	143
APPLICATION Explaining Low Japanese Interest Rates	145
Supply and Demand in the Market for Money: The Liquidity Preference Framework	146
Changes in Equilibrium Interest Rates in the Liquidity Preference Framework	149
Shifts in the Demand for Money	149
Shifts in the Supply of Money	149
APPLICATION Changes in the Equilibrium Interest Rate Due to Changes in Income, the Price Level, or the Money Supply	149
Changes in Income	150
Changes in the Price Level	151
Changes in the Money Supply	151
APPLICATION Money and Interest Rates	152
Does a Higher Rate of Growth of the Money Supply Lower Interest Rates?	153
Summary 156 • Key Terms 157 • Questions 157 • Applied Problems 158 • Web Exercises 159 • Web References 159 • Web Appendices 1, 2, 3 159	
CHAPTER 6	
The Risk and Term Structure of Interest Rates 160	
Risk Structure of Interest Rates	160
Default Risk	160
FYI Conflicts of Interest at Credit-Rating Agencies and the Global Financial Crisis 164	
APPLICATION The Global Financial Crisis and the Baa-Treasury Spread	164
Liquidity	165
Income Tax Considerations	165
Summary	167
APPLICATION Effects of the Bush Tax Cut and Its Possible Repeal on Bond Interest Rates	167
Term Structure of Interest Rates	168
Following the Financial News Yield Curves 168	
Expectations Theory	170
Segmented Markets Theory	173
Liquidity Premium and Preferred Habitat Theories	174
Evidence on the Term Structure	176
Summary	176

FYI The Yield Curve as a Forecasting Tool for Inflation and the Business Cycle 178

APPLICATION Interpreting Yield Curves, 1980–2011 178

Summary 179 • Key Terms 180 • Questions 180 • Applied Problems 181 •
 Web Exercises 182 • Web References 182

CHAPTER 7

**The Stock Market, the Theory of Rational Expectations,
 and the Efficient Market Hypothesis 183**

Computing the Price of Common Stock 183

 The One-Period Valuation Model 184

 The Generalized Dividend Valuation Model 185

 The Gordon Growth Model 185

How the Market Sets Stock Prices 186

APPLICATION Monetary Policy and Stock Prices 187

APPLICATION The Global Financial Crisis and the Stock Market 188

The Theory of Rational Expectations 188

 Formal Statement of the Theory 190

 Rationale Behind the Theory 190

 Implications of the Theory 191

The Efficient Market Hypothesis: Rational Expectations
 in Financial Markets 191

 Rationale Behind the Hypothesis 193

APPLICATION Practical Guide to Investing in the Stock Market 194

 How Valuable Are Published Reports by Investment Advisers? 194

 Should You Be Skeptical of Hot Tips? 195

 Do Stock Prices Always Rise When There Is Good News? 195

FYI Should You Hire an Ape as Your Investment Adviser? 196

 Efficient Market Prescription for the Investor 196

Why the Efficient Market Hypothesis Does Not Imply That Financial
 Markets Are Efficient 197

APPLICATION What Do Stock Market Crashes Tell Us About the Efficient
 Market Hypothesis and the Efficiency of Financial Markets? 198

Behavioral Finance 198

Summary 199 • Key Terms 200 • Questions 200 • Applied Problems 201 •
 Web Exercises 202 • Web References 202 • Web Appendix 202

PART 3

FINANCIAL INSTITUTIONS 203

CHAPTER 8

An Economic Analysis of Financial Structure 204

Basic Facts About Financial Structure Throughout the World 204

Transaction Costs 207

 How Transaction Costs Influence Financial Structure 207

 How Financial Intermediaries Reduce Transaction Costs 207

Asymmetric Information: Adverse Selection and Moral Hazard	208
The Lemons Problem: How Adverse Selection Influences Financial Structure.....	209
Lemons in the Stock and Bond Markets.....	210
Tools to Help Solve Adverse Selection Problems.....	210
FYI The Enron Implosion	212
How Moral Hazard Affects the Choice Between Debt and Equity Contracts.....	214
Moral Hazard in Equity Contracts: The Principal-Agent Problem.....	215
Tools to Help Solve the Principal-Agent Problem.....	216
How Moral Hazard Influences Financial Structure in Debt Markets.....	217
Tools to Help Solve Moral Hazard in Debt Contracts.....	218
Summary.....	220
APPLICATION Financial Development and Economic Growth.....	221
FYI Should We Kill <i>All</i> the Lawyers?	222
APPLICATION Is China a Counterexample to the Importance of Financial Development?	222
Summary 223 • Key Terms 224 • Questions 224 • Applied Problems 225 • Web Exercises 226 • Web References 226	
CHAPTER 9	
Financial Crises in Advanced Economies	227
What Is a Financial Crisis?.....	227
Dynamics of Financial Crises in Advanced Economies.....	228
Stage One: Initiation of Financial Crisis.....	228
Stage Two: Banking Crisis.....	230
Stage Three: Debt Deflation.....	231
APPLICATION The Mother of All Financial Crises: The Great Depression	231
Stock Market Crash.....	231
Bank Panics.....	232
Continuing Decline in Stock Prices.....	232
Debt Deflation.....	233
International Dimensions.....	233
APPLICATION The Global Financial Crisis of 2007–2009.....	234
Causes of the 2007–2009 Financial Crisis.....	234
FYI Collateralized Debt Obligations (CDOs)	235
Effects of the 2007–2009 Financial Crisis.....	236
Inside the Fed Was the Fed to Blame for the Housing Price Bubble?	237
Global Ireland and the 2007–2009 Financial Crisis	240
Height of the 2007–2009 Financial Crisis.....	240
Government Intervention and the Recovery.....	241
Global Worldwide Government Bailouts During the 2007–2009 Financial Crisis	242
Summary 242 • Key Terms 243 • Questions 243 • Web Exercise 244 • Web References 244	

CHAPTER 10**Financial Crises in Emerging Market Economies 245**

Dynamics of Financial Crises in Emerging Market Economies	245
Stage One: Initiation of Financial Crisis	245
Stage Two: Currency Crisis	249
Stage Three: Full-Fledged Financial Crisis	249
APPLICATION Crisis in South Korea, 1997–1998	251
Financial Liberalization/Globalization Mismanaged	251
Perversion of the Financial Liberalization/Globalization	
Process: Chaebols and the South Korean Crisis	252
Stock Market Decline and Failure of Firms Increase Uncertainty	254
Adverse Selection and Moral Hazard Problems Worsen	
and Aggregate Demand Falls	254
Currency Crisis Ensues	255
Final Stage: Currency Crisis Triggers Full-Fledged Financial Crisis	255
Recovery Commences	256
APPLICATION The Argentine Financial Crisis, 2001–2002	257
Severe Fiscal Imbalances	257
Adverse Selection and Moral Hazard Problems Worsen	257
Bank Panic Begins	257
Currency Crisis Ensues	258
Currency Crisis Triggers Full-Fledged Financial Crisis	259
Recovery Begins	260
Preventing Emerging Market Financial Crises	261
Beef Up Prudential Regulation and Supervision of Banks	261
Following the Financial News When an Advanced Economy Is like an	
Emerging Market Economy: The Icelandic Financial Crisis of 2008	262
Encourage Disclosure and Market-Based Discipline	263
Limit Currency Mismatch	263
Sequence Financial Liberalization	263
Summary 264 • Key Terms 264 • Questions 264	

CHAPTER 11**Banking and the Management of Financial Institutions 265**

The Bank Balance Sheet	265
Liabilities	265
Assets	268
Basic Banking	269
General Principles of Bank Management	272
Liquidity Management and the Role of Reserves	272
Asset Management	275
Liability Management	276
Capital Adequacy Management	277
APPLICATION Strategies for Managing Bank Capital	279
APPLICATION How a Capital Crunch Caused a Credit Crunch	
During the Global Financial Crisis	280

Managing Credit Risk	281
Screening and Monitoring	281
Long-Term Customer Relationships.....	283
Loan Commitments.....	283
Collateral and Compensating Balances	283
Credit Rationing.....	284
Managing Interest-Rate Risk	285
Gap and Duration Analysis.....	285
APPLICATION Strategies for Managing Interest-Rate Risk.....	287
Off-Balance-Sheet Activities.....	287
Loan Sales	287
Generation of Fee Income	288
Trading Activities and Risk Management Techniques.....	288
Global Barings, Daiwa, Sumitomo, and Société Générale: Rogue Traders and the Principal-Agent Problem	289
Summary 290 • Key Terms 291 • Questions 291 • Applied Problems 292 • Web Exercises 293 • Web References 293 • Web Appendices 1, 2 293	
CHAPTER 12	
Economic Analysis of Financial Regulation 294	
Asymmetric Information and Financial Regulation	294
Government Safety Net	294
Global The Spread of Government Deposit Insurance Throughout the World: Is This a Good Thing?	296
Restrictions on Asset Holdings	299
Capital Requirements	299
Prompt Corrective Action.....	300
Global Where Is the Basel Accord Heading After the Global Financial Crisis?	301
Financial Supervision: Chartering and Examination	302
Assessment of Risk Management	303
Disclosure Requirements	304
Consumer Protection.....	304
FYI Mark-to-Market Accounting and the Global Financial Crisis	305
FYI The Subprime Mortgage Crisis and Consumer Protection Regulation	306
Restrictions on Competition	307
Macroprudential Versus Microprudential Supervision	307
Global International Financial Regulation	308
Summary.....	309
The 1980s Savings and Loan and Banking Crisis	311
Banking Crises Throughout the World.....	313
“Déjà vu All Over Again”	313
The Dodd-Frank Bill and Future Regulation.....	314

Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 316
 Future Regulation..... 317
 Summary 318 • Key Terms 318 • Questions 319 • Applied Problems 319 •
 Web Exercises 320 • Web References 320 • Web Appendices 1, 2 320

CHAPTER 13

Banking Industry: Structure and Competition 321

Historical Development of the Banking System..... 321
 Multiple Regulatory Agencies 323
 Financial Innovation and the Growth of the “Shadow Banking System” 324
 Responses to Changes in Demand Conditions: Interest-Rate Volatility 325
 Responses to Changes in Supply Conditions: Information Technology 326

FYI Will “Clicks” Dominate “Bricks” in the Banking Industry? 328

Avoidance of Existing Regulations 329

FYI Bruce Bent and the Money Market Mutual Fund Panic of 2008 331

Financial Innovation and the Decline of Traditional Banking..... 332
 Structure of the U.S. Commercial Banking Industry 335
 Restrictions on Branching 336
 Response to Branching Restrictions 337
 Bank Consolidation and Nationwide Banking..... 338
 The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 340
 What Will the Structure of the U.S. Banking Industry Look Like in the Future? 340

Global Comparison of Banking Structure in the United States and Abroad 341

Are Bank Consolidation and Nationwide Banking Good Things?..... 341
 Separation of the Banking and Other Financial Service Industries 342
 Erosion of Glass-Steagall..... 342
 The Gramm-Leach-Bliley Financial Services Modernization Act of 1999:
 Repeal of Glass-Steagall 342
 Implications for Financial Consolidation 343
 Separation of Banking and Other Financial Services Industries Throughout the World..... 343

**FYI The Global Financial Crisis and the Demise of Large, Free-Standing
 Investment Banks 344**

Thrift Industry: Regulation and Structure 344
 Savings and Loan Associations 344
 Mutual Savings Banks..... 345
 Credit Unions..... 345
 International Banking..... 346
 Eurodollar Market 346

Global Ironic Birth of the Eurodollar Market 347

Structure of U.S. Banking Overseas 347
 Foreign Banks in the United States 348
 Summary 349 • Key Terms 350 • Questions 350 • Web Exercises 351 •
 Web References 352

CHAPTER 14**Central Banks: A Global Perspective 354**

Origins of the Federal Reserve System	354
Structure of the Federal Reserve System	355
Federal Reserve Banks	355
Member Banks	357
Board of Governors of the Federal Reserve System	357
Federal Open Market Committee (FOMC)	358

Inside the Fed The FOMC Meeting 359

How Independent Is the Fed?	360
Should the Fed Be Independent?	361
The Case for Independence	361

Inside the Fed How Bernanke's Style Differs from Greenspan's 362

The Case Against Independence	363
Central Bank Independence and Macroeconomic Performance Throughout the World	364
Explaining Central Bank Behavior	364
Structure and Independence of the European Central Bank	365
Governing Council Executive Board and General Council	366
Central Banks Round the World	370
Bank of Canada	370
Bank of England	371
Bank of Japan	371
Central Banks in Transition Economies	372
Central Banks in Developing Countries and Emerging Economies	372

Global Islamic Finance: Alternative Ethical Solutions to Financial Stability 373

People's Bank of China	374
Multinational Central Banks in Developing Countries	375
Central Bank Reforms in South America	375
Currency Unions in Developing Nations	375
The Trend Toward Greater Independence	376
Summary 376 • Key Terms 377 • Questions 377 • Web Exercises 378 • Web References 378	

CHAPTER 15**The Money Supply Process 379**

Three Players in the Money Supply Process	379
The Fed's Balance Sheet	379
Liabilities	380
Assets	381

Control of the Monetary Base	381
Federal Reserve Open Market Operations.....	382
Shifts from Deposits into Currency.....	385
Loans to Financial Institutions.....	386
Other Factors That Affect the Monetary Base.....	386
Overview of the Fed's Ability to Control the Monetary Base.....	387
Multiple Deposit Creation: A Simple Model.....	388
Deposit Creation: The Single Bank	388
Deposit Creation: The Banking System.....	389
Deriving the Formula for Multiple Deposit Creation.....	392
Critique of the Simple Model	393
Factors That Determine the Money Supply.....	394
Changes in the Nonborrowed Monetary Base, MB_n	394
Changes in Borrowed Reserves, BR , from the Fed.....	394
Changes in the Required Reserve Ratio, rr	394
Changes in Currency Holdings.....	394
Changes in Excess Reserves.....	395
Overview of the Money Supply Process	395
The Money Multiplier.....	396
Deriving the Money Multiplier	396
Intuition Behind the Money Multiplier.....	398
Money Supply Response to Changes in the Factors	399
APPLICATION The Great Depression Bank Panics, 1930–1933, and the Money Supply	400
APPLICATION The 2007–2009 Financial Crisis and the Money Supply.....	402
Summary 405 • Key Terms 405 • Questions 406 • Applied Problems 406 • Web Exercises 407 • Web References 408 • Web Appendices 1, 2, 3 408	

CHAPTER 16

Tools of Monetary Policy 409

The Market for Reserves and the Federal Funds Rate.....	409
Demand and Supply in the Market for Reserves.....	409

Inside the Fed Why Does the Fed Need to Pay Interest on Reserves? 411

How Changes in the Tools of Monetary Policy Affect the Federal Funds Rate.....	412
--	-----

APPLICATION How the Federal Reserve's Operating Procedures

Limit Fluctuations in the Federal Funds Rate.....	416
Conventional Monetary Policy Tools.....	418
Open Market Operations.....	418

Inside the Fed A Day at the Trading Desk 419

Discount Policy and the Lender of Last Resort.....	420
--	-----

Inside the Fed Using Discount Policy to Prevent a Financial Panic 422

Reserve Requirements	423
Interest on Reserves.....	424
Relative Advantages of the Different Tools	424

Nonconventional Monetary Policy Tools During the Global Financial Crisis.....	425
Liquidity Provision.....	425
Asset Purchases.....	426
Quantitative Easing Versus Credit Easing.....	426

Inside the Fed Fed Lending Facilities During the Global Financial Crisis 427

Commitment to Future Policy Actions.....	428
Monetary Policy Tools of the European Central Bank.....	429
Open Market Operations.....	430
Lending to Banks.....	430
Reserve Requirements.....	430
Summary 431 • Key Terms 431 • Questions 432 • Applied Problems 433 •	
Web Exercises 433 • Web References 433	

CHAPTER 17

The Conduct of Monetary Policy: Strategy and Tactics 434

The Price Stability Goal and the Nominal Anchor.....	434
The Role of a Nominal Anchor.....	435
The Time-Inconsistency Problem.....	435
Other Goals of Monetary Policy.....	436
High Employment and Output Stability.....	436
Economic Growth.....	437
Stability of Financial Markets.....	437
Interest-Rate Stability.....	437
Stability in Foreign Exchange Markets.....	437
Should Price Stability be the Primary Goal of Monetary Policy?.....	438
Hierarchical Versus Dual Mandates.....	438
Price Stability as the Primary, Long-Run Goal of Monetary Policy.....	439
Inflation Targeting.....	439
Inflation Targeting in New Zealand, Canada, and the United Kingdom.....	440
Advantages of Inflation Targeting.....	442
Disadvantages of Inflation Targeting.....	443
The Federal Reserve's Monetary Policy Strategy.....	445
Advantages of the Fed's "Just Do It" Approach.....	446
Disadvantages of the Fed's "Just Do It" Approach.....	446
Lessons for Monetary Policy Strategy from the Global Financial Crisis.....	447

Inside the Fed Chairman Bernanke and Inflation Targeting 448

Implications for Inflation Targeting.....	449
How Should Central Banks Respond to Asset-Price Bubbles?.....	450
Tactics: Choosing the Policy Instrument.....	454
Criteria for Choosing the Policy Instrument.....	456
Tactics: The Taylor Rule.....	457

Inside the Fed The Fed's Use of the Taylor Rule 460

Inside the Fed Fed Watchers 460

Summary 461 • Key Terms 461 • Questions 462 • Applied Problems 463 •	
Web Exercises 463 • Web References 464 • Web Appendix 464	

APPENDIX TO CHAPTER 17**Fed Policy Procedures: Historical Perspective 465**

The Early Years: Discount Policy as the Primary Tool.....	465
Discovery of Open Market Operations.....	466
The Great Depression	466
Inside the Fed Bank Panics of 1930–1933: Why Did the Fed Let Them Happen? 467	
Reserve Requirements as a Policy Tool.....	467
War Finance and the Pegging of Interest Rates: 1942–1951.....	468
Targeting Money Market Conditions: the 1950s and 1960s	468
Targeting Monetary Aggregates: the 1970s.....	469
New Fed Operating Procedures: October 1979–October 1982	470
De-Emphasis of Monetary Aggregates: October 1982–Early 1990s.....	471
Federal Funds Targeting Again: Early 1990s and Beyond.....	472
Preemptive Strikes Against Inflation	472
Preemptive Strikes Against Economic Downturns and Financial Disruptions: LTCM, Enron, and the Global Financial Crisis.....	473
International Considerations	473

PART 5**INTERNATIONAL FINANCE AND MONETARY POLICY 475****CHAPTER 18****The Foreign Exchange Market 476**

Foreign Exchange Market.....	476
What Are Foreign Exchange Rates?	477
Following the Financial News Foreign Exchange Rates 478	
Why Are Exchange Rates Important?.....	478
How Is Foreign Exchange Traded?.....	479
Exchange Rates in the Long Run.....	479
Law of One Price.....	479
Theory of Purchasing Power Parity.....	480
Why the Theory of Purchasing Power Parity Cannot Fully Explain Exchange Rates	481
Factors That Affect Exchange Rates in the Long Run	482
Exchange Rates in the Short Run: A Supply and Demand Analysis	483
Supply Curve for Domestic Assets.....	484
Demand Curve for Domestic Assets.....	484
Equilibrium in the Foreign Exchange Market	485
Explaining Changes in Exchange Rates.....	485
Shifts in the Demand for Domestic Assets.....	486
Recap: Factors That Change the Exchange Rate.....	488
APPLICATION Effects of Changes in Interest Rates on the Equilibrium Exchange Rate.....	490

APPLICATION Why Are Exchange Rates So Volatile?	491
APPLICATION The Dollar and Interest Rates	492
APPLICATION The Global Financial Crisis and the Dollar	493
Summary 494 • Key Terms 494 • Questions 495 • Applied Problems 495 • Web Exercises 496 • Web References 496	
 APPENDIX TO CHAPTER 18	
The Interest Parity Condition 497	
Comparing Expected Returns on Domestic and Foreign Assets	497
Interest Parity Condition	499
 CHAPTER 19	
The International Financial System 500	
Intervention in the Foreign Exchange Market	500
Foreign Exchange Intervention and the Money Supply	500
Inside the Fed A Day at the Federal Reserve Bank of New York's Foreign Exchange Desk 501	
Unsterilized Intervention	503
Sterilized Intervention	504
Balance of Payments	504
Global Why the Large U.S. Current Account Deficit Worries Economists 505	
Exchange Rate Regimes in the International Financial System	506
Gold Standard	506
The Bretton Woods System	507
Global The Euro's Challenge to the Dollar 508	
How a Fixed Exchange Rate Regime Works	508
APPLICATION How Did China Accumulate Over \$3 Trillion of International Reserves?	511
Managed Float	512
European Monetary System (EMS)	513
APPLICATION The Foreign Exchange Crisis of September 1992	514
APPLICATION Recent Foreign Exchange Crises in Emerging Market Countries: Mexico 1994, East Asia 1997, Brazil 1999, and Argentina 2002	516
Capital Controls	517
Controls on Capital Outflows	517
Controls on Capital Inflows	517
The Role of the IMF	518
Should the IMF Be an International Lender of Last Resort?	518
How Should the IMF Operate?	519
Global The Global Financial Crisis and the IMF 521	

International Considerations and Monetary Policy 521
 Direct Effects of the Foreign Exchange Market on Monetary Policy 521
 Balance-of-Payments Considerations 522
 Exchange Rate Considerations..... 522
 To Peg or Not to Peg: Exchange-Rate Targeting as an Alternative
 Monetary Policy Strategy 523
 Advantages of Exchange-Rate Targeting..... 523
 Disadvantages of Exchange-Rate Targeting 524
 When Is Exchange-Rate Targeting Desirable for Industrialized Countries?..... 526
 When Is Exchange-Rate Targeting Desirable for Emerging Market Countries? 527
 Currency Boards..... 527
Global Argentina's Currency Board 528
 Dollarization 528
 Summary 529 • Key Terms 530 • Questions 530 • Applied Problems 531 •
 Web Exercises 532 • Web References 532

PART 6

MONETARY THEORY 533

CHAPTER 20

Quantity Theory, Inflation, and the Demand for Money 534

Quantity Theory of Money 534
 Velocity of Money and Equation of Exchange 534
 From the Equation of Exchange to the Quantity Theory of Money 536
 Quantity Theory and the Price Level 537
 Quantity Theory and Inflation..... 537
APPLICATION Testing the Quantity Theory of Money 538
 Budget Deficits and Inflation 540
 Government Budget Constraint 540
 Hyperinflation 542
APPLICATION The Zimbabwean Hyperinflation 542
 Keynesian Theories of Money Demand 542
 Transactions Motive..... 543
 Precautionary Motive..... 543
 Speculative Motive 543
 Putting the Three Motives Together 543
 Portfolio Theories of Money Demand 544
 Theory of Portfolio Choice and Keynesian Liquidity Preference..... 544
 Other Factors That Affect the Demand for Money 545
 Summary..... 545
 Empirical Evidence for the Demand for Money 546
 Interest Rates and Money Demand 546
 Stability of Money Demand 547
 Summary 547 • Key Terms 548 • Questions 548 • Applied Problems 549 •
 Web Exercises 550 • Web References 550 • Web Appendices 1, 2 550

CHAPTER 21

The IS Curve 551

Planned Expenditure and Aggregate Demand 551
 The Components of Aggregate Demand..... 552
 Consumption Expenditure 552

FYI Meaning of the Word *Investment* 553

 Planned Investment Spending 553
 Net Exports..... 555
 Government Purchases and Taxes..... 556
 Goods Market Equilibrium 557
 Solving for Goods Market Equilibrium 557
 Deriving the IS Curve 558

Understanding the IS Curve 558
 What the IS Curve Tells Us: Intuition 558
 What the IS Curve Tells Us: Numerical Example 558
 Why the Economy Heads Toward the Equilibrium 559

Factors that Shift the IS Curve 560
 Changes in Government Purchases..... 560

APPLICATION The Vietnam War Buildup, 1964–1969 560
 Changes in Taxes..... 561

APPLICATION The Fiscal Stimulus Package of 2009 562
 Changes in Autonomous Spending..... 563
 Changes in Financial Frictions 564
 Summary of Factors That Shift the IS Curve 564

Summary 565 • Key Terms 566 • Questions 566 • Applied Problems 567 •
 Web Exercises 568 • Web References 568

CHAPTER 22

The Monetary Policy and Aggregate Demand Curves 569

The Federal Reserve and Monetary Policy..... 569
 The Monetary Policy Curve 570
 The Taylor Principle: Why the Monetary Policy Curve
 Has an Upward Slope 570
 Shifts in the MP Curve..... 571

APPLICATION Autonomous Monetary Easing at the Onset of the
 2007–2009 Financial Crisis..... 572

The Aggregate Demand Curve 573
 Deriving the Aggregate Demand Curve Graphically..... 573
 Factors That Shift the Aggregate Demand Curve..... 574

FYI Deriving the Aggregate Demand Curve Algebraically 574

Summary 579 • Key Terms 579 • Questions 579 • Applied Problems 580 •
 Web Exercises 581 • Web References 581

CHAPTER 23

Aggregate Demand and Supply Analysis 582

Aggregate Demand 582

Following the Financial News: Aggregate Output, Unemployment, and Inflation 583

Deriving the Aggregate Demand Curve 583

Factors That Shift the Aggregate Demand Curve 584

Aggregate Supply 587

Long-Run Aggregate Supply Curve 587

Short-Run Aggregate Supply Curve 588

Shifts in Aggregate Supply Curves 590

Shifts in the Long-Run Aggregate Supply Curve 590

Shifts in the Short-Run Aggregate Supply Curve 591

Equilibrium in Aggregate Demand and Supply Analysis 594

Short-Run Equilibrium 594

How the Short-Run Equilibrium Moves to the Long-Run Equilibrium over Time 594

Self-Correcting Mechanism 597

Changes in Equilibrium: Aggregate Demand Shocks 597

APPLICATION The Volcker Disinflation, 1980–1986 599

APPLICATION Negative Demand Shocks, 2001–2004 599

Changes in Equilibrium: Aggregate Supply (Price) Shocks 601

Temporary Supply Shocks 602

APPLICATION Negative Supply Shocks, 1973–1975 and 1978–1980 602

Permanent Supply Shocks and Real Business Cycle Theory 603

APPLICATION Positive Supply Shocks, 1995–1999 606

Conclusions 606

APPLICATION Negative Supply and Demand Shocks and the 2007–2009

Financial Crisis 608

AD/AS Analysis of Foreign Business Cycle Episodes 608

APPLICATION The United Kingdom and the 2007–2009 Financial Crisis 610

APPLICATION China and the 2007–2009 Financial Crisis 611

Summary 611 • Key Terms 613 • Questions 613 • Applied Problems 614 •

Web Exercises 614 • Web References 615 • Web Appendices I, 2, 3, 4 615

APPENDIX TO CHAPTER 23

The Phillips Curve and the Short-Run Aggregate Supply Curve 616

The Phillips Curve 616

Phillips Curve Analysis in the 1960s 616

The Friedman-Phelps Phillips Curve Analysis 617

FYI The Phillips Curve Tradeoff and Macroeconomic Policy in the 1960s 618

The Phillips Curve After the 1960s 620

The Modern Phillips Curve	620
The Modern Phillips Curve with Adaptive (Backward-Looking) Expectations	620
The Short-Run Aggregate Supply Curve	621

CHAPTER 24

Monetary Policy Theory 624

Response of Monetary Policy to Shocks	624
Response to an Aggregate Demand Shock	625

APPLICATION Quantitative (Credit) Easing in Response to the Global

Financial Crisis.....	627
Response to a Permanent Supply Shock	627
Response to a Temporary Supply Shock	629
The Bottom Line: The Relationship Between Stabilizing Inflation and Stabilizing Economic Activity	631
How Actively Should Policymakers Try to Stabilize Economic Activity?.....	632
Lags and Policy Implementation.....	632
Inflation: Always and Everywhere a Monetary Phenomenon.....	633

FYI The Activist/Nonactivist Debate over the Obama Fiscal Stimulus Package 634

Causes of Inflationary Monetary Policy.....	634
High Employment Targets and Inflation	635

APPLICATION The Great Inflation..... 638

Summary 640 • Key Terms 640 • Questions 641 • Applied Problems 642 • Web Exercises 642 • Web References 642	
--	--

CHAPTER 25

The Role of Expectations in Monetary Policy 643

Lucas Critique of Policy Evaluation	643
Econometric Policy Evaluation	644

APPLICATION The Term Structure of Interest Rates..... 644

Policy Conduct: Rules or Discretion?.....	645
Discretion and the Time-Inconsistency Problem.....	645
Types of Rules.....	646
The Case for Rules.....	646

FYI The Political Business Cycle and Richard Nixon 647

The Case for Discretion	647
Constrained Discretion.....	648

Global The Demise of Monetary Targeting in Switzerland 648

The Role of Credibility and a Nominal Anchor	649
Benefits of a Credible Nominal Anchor.....	649
Credibility and Aggregate Demand Shocks	650
Credibility and Aggregate Supply Shocks	652

APPLICATION A Tale of Three Oil Price Shocks..... 653
 Credibility and Anti-Inflation Policy..... 654

Global Ending the Bolivian Hyperinflation: A Successful
 Anti-Inflation Program 656

APPLICATION Credibility and the Reagan Budget Deficits..... 657
 Approaches to Establishing Central Bank Credibility..... 657

Inside the Fed The Appointment of Paul Volcker, Anti-Inflation Hawk 658
 Appoint “Conservative” Central Bankers..... 658

Summary 659 • Key Terms 659 • Questions 660 • Applied Problems 661 •
 Web Exercises 661 • Web References 661

CHAPTER 26
Transmission Mechanisms of Monetary Policy 662

Transmission Mechanisms of Monetary Policy 662
 Traditional Interest-Rate Channels..... 663
 Other Asset Price Channels 664
 Credit View 667

FYI Consumers’ Balance Sheets and the Great Depression 670
 Why Are Credit Channels Likely to Be Important? 670

APPLICATION The Great Recession..... 671
 Lessons for Monetary Policy 671

APPLICATION Applying the Monetary Policy Lessons to Japan 673
 Summary 674 • Key Terms 674 • Questions 674 • Applied Problems 675 •
 Web Exercises 676 • Web References 676 • Web Appendix 676

Glossary..... 677

Credits..... 689

Index 695

CONTENTS ON THE WEB

The following updated chapter and appendices are available on our Companion Website at www.pearsonglobaleditions.com/mishkin.

WEB CHAPTER

The *ISLM* Model

Keynes’ Fixed Price Level Assumption and the *IS* Curve

The *LM* Curve

Equilibrium in the Market for Money: The *LM* Curve

