

fifth edition

Financial Markets *and* Institutions

Anthony Saunders

*Stern School of Business
New York University*

Marcia Millon Cornett

Bentley University

CONTENTS

Preface vii

part 1 INTRODUCTION AND OVERVIEW OF FINANCIAL MARKETS 1

1 Introduction 1

Why Study Financial Markets and Institutions?

Chapter Overview 1

Overview of Financial Markets 3

Primary Markets versus Secondary Markets 3

Money Markets versus Capital Markets 6

Foreign Exchange Markets 8

Derivative Security Markets 9

Financial Market Regulation 10

Overview of Financial Institutions 10

Unique Economic Functions Performed by Financial Institutions 12

Additional Benefits FIs Provide to Suppliers of Funds 15

Economic Functions FIs Provide to the Financial System as a Whole 15

Risks Incurred by Financial Institutions 16

Regulation of Financial Institutions 17

Trends in the United States 17

Globalization of Financial Markets and Institutions 20

Appendix 1A: The Financial Crisis: The Failure of Financial Institutions' Specialness 25

2 Determinants of Interest Rates 36

Interest Rate Fundamentals: Chapter Overview 36

Loanable Funds Theory 37

Supply of Loanable Funds 38

Demand for Loanable Funds 39

Equilibrium Interest Rate 40

Factors That Cause the Supply and Demand Curves for Loanable Funds to Shift 42

Movement of Interest Rates Over Time 45

Determinants of Interest Rates for Individual Securities 45

Inflation 46

Real Interest Rates 46

Default or Credit Risk 47

Liquidity Risk 49

Special Provisions or Covenants 49

Term to Maturity 50

Term Structure of Interest Rates 51

Unbiased Expectations Theory 52

Liquidity Premium Theory 53

Market Segmentation Theory 56

Forecasting Interest Rates 57

Time Value of Money and Interest Rates 58

Time Value of Money 58

Lump Sum Valuation 61

Annuity Valuation 64

Effective Annual Return 67

3 Interest Rates and Security Valuation 72

Interest Rates as a Determinant of Financial Security Values:

Chapter Overview 72

Various Interest Rate Measures 73

Coupon Rate 73

Required Rate of Return 73

Expected Rate of Return 74

Required versus Expected Rates of Return:

The Role of Efficient Markets 76

Realized Rate of Return 76

Bond Valuation 77

Bond Valuation Formula Used to Calculate Fair Present Values 77

Bond Valuation Formula Used to Calculate Yield to Maturity 79

Equity Valuation 80

Zero Growth in Dividends 82

Constant Growth in Dividends 83

Supernormal (or Nonconstant) Growth in Dividends 84

Impact of Interest Rate Changes on Security Values 85

Impact of Maturity on Security Values 86

Maturity and Security Prices 87

Maturity and Security Price Sensitivity to Changes in Interest Rates 87

Impact of Coupon Rates on Security Values 88

Coupon Rate and Security Price 88

Coupon Rate and Security Price Sensitivity to Changes in Interest Rates 89

Duration	90
<i>A Simple Illustration of Duration</i>	90
<i>A General Formula for Duration</i>	92
<i>Features of Duration</i>	95
<i>Economic Meaning of Duration</i>	96
<i>Large Interest Rate Changes and Duration</i>	98

Appendix 3A: Duration and Immunization
(at www.mhhe.com/sc5e)

Appendix 3B: More on Convexity (at www.mhhe.com/sc5e)

4 The Federal Reserve System, Monetary Policy, and Interest Rates 106

Major Duties and Responsibilities of the Federal Reserve System: Chapter Overview 106

Structure of the Federal Reserve System 107

Organization of the Federal Reserve System 107

Board of Governors of the Federal Reserve System 109

Federal Open Market Committee 109

Functions Performed by Federal Reserve Banks 110

Balance Sheet of the Federal Reserve 114

Monetary Policy Tools 118

Open Market Operations 119

The Discount Rate 122

Reserve Requirements (Reserve Ratios) 125

The Federal Reserve, the Money Supply, and Interest Rates 129

Effects of Monetary Tools on Various Economic Variables 129

Money Supply versus Interest Rate Targeting 131

International Monetary Policies and Strategies 133

Systemwide Rescue Programs Employed During the Financial Crisis 134

part 2 SECURITIES MARKETS 141

5 Money Markets 141

Definition of Money Markets: Chapter Overview 141

Money Markets 142

Yields on Money Market Securities 143

Bond Equivalent Yields 143

Effective Annual Return 144

Discount Yields 144

Single-Payment Yields 145

Money Market Securities 147

Treasury Bills 147

Federal Funds 153

Repurchase Agreements 155

Commercial Paper 158

Negotiable Certificates of Deposit 162

Banker's Acceptances 164

Comparison of Money Market Securities 164

Money Market Participants 165

The U.S. Treasury 166

The Federal Reserve 166

Commercial Banks 166

Money Market Mutual Funds 166

Brokers and Dealers 166

Corporations 167

Other Financial Institutions 167

Individuals 167

International Aspects of Money Markets 167

Euro Money Markets 169

Appendix 5A: Single versus Discriminating Price Treasury Auctions (at www.mhhe.com/sc5e)

Appendix 5B: Creation of a Banker's Acceptance (at www.mhhe.com/sc5e)

6 Bond Markets 176

Definition of Bond Markets: Chapter Overview 176

Bond Market Securities 177

Treasury Notes and Bonds 177

Municipal Bonds 188

Corporate Bonds 194

Bond Ratings 200

Bond Market Indexes 203

Bond Market Participants 204

Comparison of Bond Market Securities 205

International Aspects of Bond Markets 205

Eurobonds, Foreign Bonds, and Sovereign Bonds 208

7 Mortgage Markets 213

Mortgages and Mortgage-Backed Securities: Chapter Overview 213

Primary Mortgage Market 215

Mortgage Characteristics 216

Mortgage Amortization 221

Other Types of Mortgages 226

Secondary Mortgage Markets 229

History and Background of Secondary Mortgage Markets 230

Mortgage Sales 230

Mortgage-Backed Securities 231

Participants in the Mortgage Markets 238

International Trends in Securitization 240

Appendix 7A: Amortization Schedules for No-Points versus Points Mortgages in Example 7-4

(at www.mhhe.com/sc5e)

8	Stock Markets 244		
	The Stock Markets: Chapter Overview	244	
	Stock Market Securities	246	
	<i>Common Stock</i>	246	
	<i>Preferred Stock</i>	249	
	Primary and Secondary Stock Markets	251	
	<i>Primary Stock Markets</i>	251	
	<i>Secondary Stock Markets</i>	256	
	<i>Stock Market Indexes</i>	266	
	Stock Market Participants	271	
	Other Issues Pertaining to Stock Markets	272	
	<i>Economic Indicators</i>	272	
	<i>Market Efficiency</i>	273	
	<i>Stock Market Regulations</i>	276	
	International Aspects of Stock Markets	278	
	<i>Appendix 8A: The Capital Asset Pricing Model</i>		(at www.mhhe.com/sc5e)
	<i>Appendix 8B: Event Study Tests</i>		(at www.mhhe.com/sc5e)
9	Foreign Exchange Markets 285		
	Foreign Exchange Markets and Risk: Chapter Overview	285	
	Background and History of Foreign Exchange Markets	286	
	Foreign Exchange Rates and Transactions	290	
	<i>Foreign Exchange Rates</i>	290	
	<i>Foreign Exchange Transactions</i>	290	
	<i>Return and Risk of Foreign Exchange Transactions</i>	294	
	<i>Role of Financial Institutions in Foreign Exchange Transactions</i>	299	
	Interaction of Interest Rates, Inflation, and Exchange Rates	303	
	<i>Purchasing Power Parity</i>	304	
	<i>Interest Rate Parity</i>	305	
	<i>Appendix 9A: Balance of Payment Accounts</i>		(at www.mhhe.com/sc5e)
10	Derivative Securities Markets 310		
	Derivative Securities: Chapter Overview	310	
	Forwards and Futures	312	
	<i>Spot Markets</i>	312	
	<i>Forward Markets</i>	313	
	<i>Futures Markets</i>	315	
	Options	322	
	<i>Call Options</i>	322	
	<i>Put Options</i>	324	
	<i>Option Values</i>	326	
	<i>Option Markets</i>	328	
	Regulation of Futures and Options Markets	334	
	Swaps	335	
	<i>Interest Rate Swaps</i>	335	
	<i>Currency Swaps</i>	338	
	<i>Credit Swaps</i>	339	
	<i>Swap Markets</i>	340	
	Caps, Floors, and Collars	341	
	International Aspects of Derivative Securities Markets	343	
	<i>Appendix 10A: Black–Scholes Option Pricing Model</i>		(at www.mhhe.com/sc5e)
part 3	COMMERCIAL BANKS 348		
11	Commercial Banks: Industry Overview 348		
	Commercial Banks as a Sector of the Financial Institutions Industry: Chapter Overview	348	
	Definition of a Commercial Bank	351	
	Balance Sheets and Recent Trends	351	
	<i>Assets</i>	351	
	<i>Liabilities</i>	354	
	<i>Equity</i>	355	
	<i>Off-Balance-Sheet Activities</i>	355	
	<i>Other Fee-Generating Activities</i>	358	
	Size, Structure, and Composition of the Industry	358	
	<i>Bank Size and Concentration</i>	360	
	<i>Bank Size and Activities</i>	362	
	Industry Performance	364	
	Regulators	366	
	<i>Federal Deposit Insurance Corporation</i>	366	
	<i>Office of the Comptroller of the Currency</i>	367	
	<i>Federal Reserve System</i>	368	
	<i>State Authorities</i>	368	
	Global Issues	368	
	<i>Advantages and Disadvantages of International Expansion</i>	368	
	<i>Global Banking Performance</i>	370	
12	Commercial Banks' Financial Statements and Analysis 374		
	Why Evaluate the Performance of Commercial Banks? Chapter Overview	374	
	Financial Statements of Commercial Banks	376	
	<i>Balance Sheet Structure</i>	377	
	<i>Off-Balance-Sheet Assets and Liabilities</i>	383	
	<i>Other Fee-Generating Activities</i>	386	
	<i>Income Statement</i>	387	
	<i>Direct Relationship between the Income Statement and the Balance Sheet</i>	391	
	Financial Statement Analysis Using a Return on Equity Framework	391	

Return on Equity and Its Components 392
Return on Assets and Its Components 394
Other Ratios 399

Impact of Market Niche and Bank Size on
 Financial Statement Analysis 400
 Impact of a Bank's Market Niche 400
 *Impact of Size on Financial Statement
 Analysis* 401

**13 Regulation of Commercial
 Banks 406**

Specialness and Regulation: Chapter
 Overview 406
 Types of Regulations and the Regulators 407
 Safety and Soundness Regulation 407
 Monetary Policy Regulation 409
 Credit Allocation Regulation 410
 Consumer Protection Regulation 410
 Investor Protection Regulation 410
 Entry and Chartering Regulation 411
 Regulators 411

Regulation of Product and Geographic
 Expansion 412
 *Product Segmentation in the U.S. Commercial
 Banking Industry* 412
 *Geographic Expansion in the U.S. Commercial
 Banking Industry* 416

Bank and Savings Institution Guarantee
 Funds 417
 FDIC 418
 *The Demise of the Federal Savings and Loan
 Insurance Corporation (FSLIC)* 419
 Reform of Deposit Insurance 419
 Non-U.S. Deposit Insurance Systems 421

Balance Sheet Regulations 421
 *Regulations on Commercial Bank
 Liquidity* 421
 *Regulations on Capital Adequacy
 (Leverage)* 422
 Off-Balance-Sheet Regulations 427

Foreign versus Domestic Regulation of
 Commercial Banks 428
 Product Diversification Activities 429
 *Global or International Expansion
 Activities* 429

*Appendix 13A: Calculating Deposit Insurance
 Premium Assessments* 436

*Appendix 13B: Calculating Risk-Based Capital
 Ratios* 440

*Appendix 13C: Primary Regulators of
 Depository Institutions* (at www.mhhe.com/sc5e)

*Appendix 13D: Deposit Insurance Coverage
 for Commercial Banks in Various Countries*
 (at www.mhhe.com/sc5e)

*Appendix 13E: Calculating Minimum Required
 Reserves at U.S. Depository Institutions*
 (at www.mhhe.com/sc5e)

part 4 **OTHER FINANCIAL
 INSTITUTIONS 449**

**14 Other Lending Institutions: Savings
 Institutions, Credit Unions, and
 Finance Companies 449**

Other Lending Institutions: Chapter
 Overview 449
 Savings Institutions 450
 *Size, Structure, and Composition of the
 Industry* 450
 Balance Sheets and Recent Trends 453
 Regulators 455
 Savings Institution Recent Performance 456
 Credit Unions 457
 *Size, Structure, and Composition of the
 Industry* 458
 Balance Sheets and Recent Trends 460
 Regulators 463
 Industry Performance 463
 Finance Companies 464
 *Size, Structure, and Composition of the
 Industry* 464
 Balance Sheets and Recent Trends 466
 Industry Performance 471
 Regulation 472
 Global Issues 473

15 Insurance Companies 476

Two Categories of Insurance Companies:
 Chapter Overview 476
 Life Insurance Companies 477
 *Size, Structure, and Composition of the
 Industry* 477
 Balance Sheets and Recent Trends 481
 Regulation 484
 Property-Casualty Insurance Companies 485
 *Size, Structure, and Composition of the
 Industry* 485
 Balance Sheets and Recent Trends 487
 Regulation 495
 Global Issues 496

**16 Securities Firms and Investment
 Banks 500**

Services Offered by Securities Firms versus
 Investment Banks: Chapter Overview 500
 Size, Structure, and Composition of the
 Industry 502

- Securities Firm and Investment Bank Activity Areas 504
- Investment Banking* 504
 - Venture Capital* 506
 - Market Making* 507
 - Trading* 508
 - Investing* 509
 - Cash Management* 509
 - Mergers and Acquisitions* 510
 - Other Service Functions* 511
- Recent Trends and Balance Sheets 511
- Recent Trends* 511
 - Balance Sheets* 515
- Regulation 516
- Global Issues 519
- 17 Mutual Funds and Hedge Funds 523**
- Mutual Funds and Hedge Funds: Chapter Overview 523
- Size, Structure, and Composition of the Mutual Fund Industry 524
- Historical Trends* 524
 - Different Types of Mutual Funds* 527
- Mutual Fund Returns and Costs 531
- Mutual Fund Prospectuses and Objectives* 531
 - Investor Returns from Mutual Fund Ownership* 532
 - Mutual Fund Costs* 535
- Mutual Fund Balance Sheets and Recent Trends 538
- Long-Term Funds* 538
 - Money Market Funds* 539
- Mutual Fund Regulation 540
- Mutual Fund Global Issues 543
- Hedge Funds 545
- Types of Hedge Funds* 546
 - Fees on Hedge Funds* 549
 - Offshore Hedge Funds* 550
 - Regulation of Hedge Funds* 550
- 18 Pension Funds 554**
- Pension Funds Defined: Chapter Overview 554
- Size, Structure, and Composition of the Industry 555
- Defined Benefit versus Defined Contribution Pension Funds* 555
 - Insured versus Noninsured Pension Funds* 557
 - Private Pension Funds* 558
 - Public Pension Funds* 565
- Financial Asset Investments and Recent Trends 566
- Private Pension Funds* 566
 - Public Pension Funds* 567
- Regulation 569
- Global Issues 571
- Appendix 18A: Calculation of Growth in IRA Value during an Individual's Working Years* (at www.mhhe.com/sc5e)
- part 5 RISK MANAGEMENT IN FINANCIAL INSTITUTIONS 575**
- 19 Types of Risks Incurred by Financial Institutions 575**
- Why Financial Institutions Need to Manage Risk: Chapter Overview 575
- Credit Risk 576
 - Liquidity Risk 579
 - Interest Rate Risk 580
 - Market Risk 582
 - Off-Balance-Sheet Risk 584
 - Foreign Exchange Risk 586
 - Country or Sovereign Risk 588
 - Technology and Operational Risk 589
 - Insolvency Risk 590
 - Other Risks and Interaction Among Risks 591
- 20 Managing Credit Risk on the Balance Sheet 595**
- Credit Risk Management: Chapter Overview 595
- Credit Quality Problems 596
 - Credit Analysis 599
 - Real Estate Lending* 599
 - Consumer (Individual) and Small-Business Lending* 603
 - Mid-Market Commercial and Industrial Lending* 603
 - Large Commercial and Industrial Lending* 612
 - Calculating the Return on a Loan 616
 - Return on Assets (ROA)* 616
 - RAROC Models* 618
 - Appendix 20A: Loan Portfolio Risk and Management* 624
- 21 Managing Liquidity Risk on the Balance Sheet 627**
- Liquidity Risk Management: Chapter Overview 627
- Causes of Liquidity Risk 628
 - Liquidity Risk and Depository Institutions 629
 - Liability Side Liquidity Risk* 629
 - Asset Side Liquidity Risk* 632

	<i>Measuring a Bank's Liquidity Exposure</i>	633			
	<i>Liquidity Risk, Unexpected Deposit Drains, and Bank Runs</i>	639			
	<i>Bank Runs, the Discount Window, and Deposit Insurance</i>	640			
	Liquidity Risk and Insurance Companies	644			
	<i>Life Insurance Companies</i>	644			
	<i>Property-Casualty Insurance Companies</i>	644			
	<i>Guarantee Programs for Life and Property-Casualty Insurance Companies</i>	645			
	Liquidity Risk and Investment Funds	646			
	<i>Appendix 21A: New Liquidity Risk Measures Implemented by the Bank for International Settlements</i> (at www.mhhe.com/sc5e)				
	<i>Appendix 21B: Sources and Uses of Funds Statement: Bank of America, June 2010</i> (at www.mhhe.com/sc5e)				
22	Managing Interest Rate Risk and Insolvency Risk on the Balance Sheet	650			
	Interest Rate and Insolvency Risk Management: Chapter Overview	650			
	Interest Rate Risk Measurement and Management	651			
	<i>Repricing Model</i>	651			
	<i>Duration Model</i>	659			
	Insolvency Risk Management	666			
	<i>Capital and Insolvency Risk</i>	667			
23	Managing Risk off the Balance Sheet with Derivative Securities	677			
	Derivative Securities Used to Manage Risk: Chapter Overview	677			
	Forward and Futures Contracts	678			
	<i>Hedging with Forward Contracts</i>	679			
	<i>Hedging with Futures Contracts</i>	680			
	Options	684			
	<i>Basic Features of Options</i>	684			
	<i>Actual Interest Rate Options</i>	687			
	<i>Hedging with Options</i>	687			
	<i>Caps, Floors, and Collars</i>	688			
	Risks Associated with Futures, Forwards, and Options	689			
	Swaps	690			
	<i>Hedging with Interest Rate Swaps</i>	690			
	<i>Hedging with Currency Swaps</i>	693			
	<i>Credit Swaps</i>	694			
	<i>Credit Risk Concerns with Swaps</i>	697			
	Comparison of Hedging Methods	698			
	<i>Writing versus Buying Options</i>	698			
	<i>Futures versus Options Hedging</i>	700			
	<i>Swaps versus Forwards, Futures, and Options</i>	701			
	Derivative Trading Policies of Regulators	702			
	<i>Appendix 23A: Hedging with Futures Contracts</i> (at www.mhhe.com/sc5e)				
	<i>Appendix 23B: Hedging with Options</i> (at www.mhhe.com/sc5e)				
	<i>Appendix 23C: Hedging with Caps, Floors, and Collars</i> (at www.mhhe.com/sc5e)				
24	Managing Risk off the Balance Sheet with Loan Sales and Securitization	707			
	Why Financial Institutions Sell and Securitiz				
	Loans: Chapter Overview	707			
	Loan Sales	708			
	<i>Types of Loan Sales Contracts</i>	710			
	<i>The Loan Sales Market</i>	710			
	<i>Secondary Market for Less Developed Country Debt</i>	713			
	<i>Factors Encouraging Future Loan Sales Growth</i>	714			
	<i>Factors Deterring Future Loan Sales Growth</i>	715			
	Loan Securitization	715			
	<i>Pass-Through Security</i>	716			
	<i>Collateralized Mortgage Obligation</i>	722			
	<i>Mortgage-Backed Bond</i>	726			
	Securitization of Other Assets	728			
	Can all Assets be Securitized?	728			
	<i>References</i>	733			
	<i>Index</i>	735			