# Contents

#### Preface 16

## PARTI

# Introduction 29

#### Chapter 1

## The Investment Environment 29

- 1.1 Real Assets versus Financial Assets 30
- 1.2 Financial Assets 32
- 1.3 Financial Markets and the Economy 33

The Informational Role of Financial Markets / Consumption Timing / Allocation of Risk / Separation of Ownership and Management / Corporate Governance and Corporate Ethics

- 1.4 The Investment Process 36
- 1.5 Markets Are Competitive 37

The Risk–Return Trade-Off / Efficient Markets

- 1.6 The Players 39 Financial Intermediaries / Investment Bankers
- 1.7 The Financial Crisis of 2008 42

Antecedents of the Crisis / Changes in Housing Finance / Mortgage Derivatives / Credit Default Swaps / The Rise of Systemic Risk / The Shoe Drops / Systemic Risk and the Real Economy

1.8 Outline of the Text 51

End of Chapter Material 52-55

## Chapter 2

## Asset Classes and Financial Instruments 56

2.1 The Money Market 57

Treasury Bills / Certificates of Deposit / Commercial Paper / Bankers' Acceptances / Eurodollars / Repos and Reverses / Federal Funds / Brokers' Calls / The LIBOR Market / Yields on Money Market Instruments

#### 2.2 The Bond Market 62

Treasury Notes and Bonds / Inflation-Protected Treasury Bonds / Federal Agency Debt / International Bonds / Municipal Bonds / Corporate Bonds / Mortgages and Mortgage-Backed Securities

2.3 Equity Securities 69

Common Stock as Ownership Shares / Characteristics of Common Stock / Stock Market Listings / Preferred Stock / Depository Receipts

#### 2.4 Stock and Bond Market Indexes 72

Stock Market Indexes / Dow Jones Averages / Standard & Poor's Indexes / Other U.S. Market-Value Indexes / Equally Weighted Indexes / Foreign and International Stock Market Indexes / Bond Market Indicators

2.5 Derivative Markets 79 Options / Futures Contracts End of Chapter Material 82–86

## Chapter 3

How Securities Are Traded 87

3.1 How Firms Issue Securities 87

Investment Banking / Shelf Registration / Private Placements / Initial Public Offerings

3.2 How Securities Are Traded 91

Types of Markets Direct Search Markets / Brokered Markets / Dealer Markets / Auction Markets

Types of Orders Market Orders / Price-Contingent Orders

Trading Mechanisms Dealer Markets / Electronic Communication Networks (ECNs) / Specialist Markets

## 3.3 U.S. Securities Markets 96

NASDAQ / The New York Stock Exchange Block Sales / Electronic Trading on the NYSE / Settlement Electronic Communication Networks / The National Market System / Bond Trading

3.

- 3.4 Market Structure in Other Countries 102 London / Euronext / Tokyo / Globalization and Consolidation of Stock Markets
- 3.5 Trading Costs 104
- 3.6 Buying on Margin 104
- 3.7 Short Sales 107
- 3.8 Regulation of Securities Markets 110 Self-Regulation / The Sarbanes-Oxley Act / Insider Trading End of Chapter Material 114–119

## Chapter 4

## Mutual Funds and Other Investment Companies 120

#### 4.1 Investment Companies 120

4.2 Types of Investment Companies 121 Unit Investment Trusts / Managed Investment Companies / Other Investment Organizations Commingled Funds / Real Estate Investment

Trusts (REITS) / Hedge Funds

## 4.3 Mutual Funds 124

Investment Policies

Money Market Funds / Equity Funds / Sector Funds / Bond Funds / International Funds / Balanced Funds / Asset Allocation and Flexible Funds / Index Funds How Funds Are Sold

#### 4.4 Costs of Investing in Mutual Funds 127

Fee Structure

Operating Expenses / Front-End Load / Back-End Load / 12b-1 Charges

Fees and Mutual Fund Returns / Late Trading and Market Timing

- 4.5 Taxation of Mutual Fund Income 131
- 4.6 Exchange-Traded Funds 132
- 4.7 Mutual Fund Investment Performance: A First Look 134
- 4.8 Information on Mutual Funds 137 End of Chapter Material 140–144

## PART II

# Portfolio Theory and Practice 145

## Chapter 5

## Introduction to Risk, Return, and the Historical Record 145

## 5.1 Determinants of the Level of Interest Rates 146

Real and Nominal Rates of Interest / The Equilibrium Real Rate of Interest / The Equilibrium Nominal Rate of Interest / Taxes and the Real Rate of Interest

#### 5.2 Comparing Rates of Return for Different Holding Periods 150

Annual Percentage Rates / Continuous Compounding

5.3 Bills and Inflation, 1926–2009 153

#### 5.4 Risk and Risk Premiums 155

Holding-Period Returns / Expected Return and Standard Deviation / Excess Returns and Risk Premiums

5.5 Time Series Analysis of Past Rates of Return 158

Time Series versus Scenario Analysis / Expected Returns and the Arithmetic Average / The Geometric (Time-Weighted) Average Return / Variance and Standard Deviation / The Reward-to-Volatility (Sharpe) Ratio

- 5.6 The Normal Distribution 162
- 5.7 Deviations from Normality and Risk Measures 164 Value at Risk / Expected Shortfall / Lower Partial Standard Deviation and the Sortino Ratio
- 5.8 Historic Returns on Risky Portfolios: Equities and Long-Term Government Bonds 167

Total Returns / Excess Returns / Performance / A Global View of the Historical Record

#### 5.9 Long-Term Investments 175

Risk in the Long Run and the Lognormal Distribution / The Sharpe Ratio Revisited / Simulation of Long-Term Future Rates of Return / Forecasts for the Long Haul

#### End of Chapter Material 182–187

### Chapter 6

## Risk Aversion and Capital Allocation to Risky Assets 188

6.1 Risk and Risk Aversion 189

Risk, Speculation, and Gambling / Risk Aversion and Utility Values / Estimating Risk Aversion

- 6.2 Capital Allocation across Risky and Risk-Free Portfolios 195
- 6.3 The Risk-Free Asset 197
- 6.4 Portfolios of One Risky Asset and a Risk-Free Asset 198
- 6.5 Risk Tolerance and Asset Allocation 202 Nonnormal Returns
- 6.6 Passive Strategies: The Capital Market Line 207
  End of Chapter Material 210–218
  Appendix A: Risk Aversion, Expected Utility, and the St. Petersburg Paradox 219

Appendix B: Utility Functions and Equilibrium Prices of Insurance Contracts 222

### Chapter 7

## **Optimal Risky Portfolios** 224

- 7.1 Diversification and Portfolio Risk 225
- 7.2 Portfolios of Two Risky Assets 227

#### 7.3 Asset Allocation with Stocks, Bonds, and Bills 234

The Optimal Risky Portfolio with Two Risky Assets and a Risk-Free Asset

#### 7.4 The Markowitz Portfolio Selection Model 239

Security Selection / Capital Allocation and the Separation Property / The Power of Diversification / Asset Allocation and Security Selection / Optimal Portfolios and Nonnormal Returns

7.5 Risk Pooling, Risk Sharing, and the Risk of Long-Term Investments 248

> Risk Pooling and the Insurance Principle / Risk Pooling / Risk Sharing / Investment for the Long Run

#### End of Chapter Materiai 252-262

Appendix A: A Spreadsheet Model for Efficient Diversification 262

Appendix B: Review of Portfolio Statistics 267

#### Chapter 8

## Index Models 274

#### 8.1 A Single-Factor Security Market 275

The Input List of the Markowitz Model / Normality of Returns and Systematic Risk

#### 8.2 The Single-Index Model 277

The Regression Equation of the Single-Index Model / The Expected Return–Beta Relationship / Risk and Covariance in the Single-Index Model / The Set of Estimates Needed for the Single-Index Model / The Index Model and Diversification

#### 8.3 Estimating the Single-Index Model 282

The Security Characteristic Line for Hewlett-Packard / The Explanatory Power of the SCL for HP / Analysis of Variance / The Estimate of Alpha / The Estimate of Beta / Firm-Specific Risk / Correlation and Covariance Matrix

## 8.4 Portfolio Construction and the Single-Index Model 289

Alpha and Security Analysis / The Index Portfolio as an Investment Asset / The Single-Index-Model Input List / The Optimal Risky Portfolio of the Single-Index Model / The Information Ratio / Summary of Optimization Procedure / An Example

Risk Premium Forecasts / The Optimal Risky Portfolio

8.5 Practical Aspects of Portfolio Management with the Index Model 296

> Is the Index Model Inferior to the Full-Covariance Model? / The Industry Version of the Index Model / Predicting Betas / Index Models and Tracking Portfolios

> > Alexand and the second of the

#### End of Chapter Material 302-307

 $\tau \in \xi_{1}$ 

PART III

# Equilibrium in Capital Markets 308

## Chapter 9

## The Capital Asset Pricing Model 308

9.1 The Capital Asset Pricing Model 308

Why Do All Investors Hold the Market Portfolio? / The Passive Strategy Is Efficient / The Risk Premium of the Market Portfolio / Expected Returns on Individual Securities / The Security Market Line

#### 9.2 The CAPM and the Index Model 321

Actual Returns versus Expected Returns / The Index Model and Realized Returns / The Index Model and the Expected Return-Beta Relationship

#### 9.3 Is the CAPM Practical? 324

Is the CAPM Testable? / The CAPM Fails Empirical Tests / The Economy and the Validity of the CAPM / The Investments Industry and the Validity of the CAPM

9.4 Econometrics and the Expected Return-Beta Relationship 328

#### 9.5 Extensions of the CAPM 329

The Zero-Beta Model / Labor Income and Nontraded Assets / A Multiperiod Model and Hedge Portfolios / A Consumption-Based CAPM

9.6 Liquidity and the CAPM 334 End of Chapter Material 338–345

## Chapter 10

## Arbitrage Pricing Theory and Multifactor Models of Risk and Return 346

**10.1 Multifactor Models: An Overview 347** Factor Models of Security Returns / A Multifactor

Security Market Line

10.2 Arbitrage Pricing Theory 351

Arbitrage, Risk Arbitrage, and Equilibrium / Well-Diversified Portfolios / Betas and Expected Returns / The One-Factor Security Market Line

- **10.3 Individual Assets and the APT 358** The APT and the CAPM
- 10.4 A Multifactor APT 359
- **10.5 Where Should We Look for Factors? 361** The Fama-French (FF) Three-Factor Model
- 10.6 A Multifactor CAPM and the APT 364 End of Chapter Material 364-370

## The Efficient Market Hypothesis 371

## 11.1 Random Walks and the Efficient Market Hypothesis 372

Competition as the Source of Efficiency / Versions of the Efficient Market Hypothesis

#### 11.2 Implications of the EMH 376

Technical Analysis / Fundamental Analysis / Active versus Passive Portfolio Management / The Role of Portfolio Management in an Efficient Market / Resource Allocation

#### 11.3 Event Studies 381

#### 11.4 Are Markets Efficient? 384

#### The Issues

The Magnitude Issue / The Selection Bias Issue / The Lucky Event Issue

Weak-Form Tests: Patterns in Stock Returns

Returns over Short Horizons / Returns over Long Horizons

Predictors of Broad Market Returns / Semistrong Tests: Market Anomalies

The Small-Firm-in-January Effect / The Neglected-Firm Effect and Liquidity Effects / Book-to-Market Ratios / Post-Earnings-Announcement Price Drift

Strong-Form Tests: Inside Information / Interpreting the Anomalies

Risk Premiums or Inefficiencies? / Anomalies or Data Mining?

Bubbles and Market Efficiency

#### 11.5 Mutual Fund and Analyst Performance 396

Stock Market Analysts / Mutual Fund Managers / So, Are Markets Efficient?

End of Chapter Material 401-408

## Chapter 12

## Behavioral Finance and Technical Analysis 409

#### 12.1 The Behavioral Critique 410

Information Processing

Forecasting Errors / Overconfidence / Conservatism / Sample Size Neglect and Representativeness

Behavioral Biases

Framing / Mental Accounting / Regret Avoidance / Prospect Theory

Limits to Arbitrage

Fundamental Risk / Implementation Costs / Model Risk

Limits to Arbitrage and the Law of One Price

"Siamese Twin" Companies / Equity Carve-Outs / Closed-End Funds Bubbles and Behavioral Economics / Evaluating the Behavioral Critique

## 12.2 Technical Analysis and Behavioral Finance 420

Trends and Corrections

Dow Theory / Moving Averages / Breadth

Sentiment Indicators

Trin Statistic / Confidence Index / Put/Call Ratio

A Warning

#### End of Chapter Material 428-434

#### Chapter 13

## Empirical Evidence on Security Returns 435

#### 13.1 The Index Model and the Single-Factor APT 436

The Expected Return-Beta Relationship

Setting Up the Sample Data / Estimating the SCL / Estimating the SML

Tests of the CAPM / The Market Index / Measurement Error in Beta / The EMH and the CAPM / Accounting for Human Capital and Cyclical Variations in Asset Betas / Accounting for Nontraded Business

#### **13.2 Tests of Multifactor CAPM and APT 445** *A Macro Factor Model*

#### 13.3 The Fama-French Three-Factor Model 447

Risk-Based Interpretations / Behavioral Explanations / Momentum: A Fourth Factor

## 13.4 Liquidity and Asset Pricing 454

Liquidity and Efficient Market Anomalies

13.5 Consumption-Based Asset Pricing and the Equity Premium Puzzle 456

> Consumption Growth and Market Rates of Return / Expected versus Realized Returns / Survivorship Bias / Extensions to the CAPM May Resolve the Equity Premium Puzzle / Liquidity and the Equity Premium Puzzle / Behavioral Explanations of the Equity Premium Puzzle

End of Chapter Material 463-466

## PART IV

# Fixed-Income Securities 467

## Chapter 14

## Bond Prices and Yields 467

#### 14.1 Bond Characteristics 468

Treasury Bonds and Notes Accrued Interest and Quoted Bond Prices

#### **Corporate Bonds**

Call Provisions on Corporate Bonds / Convertible Bonds / Puttable Bonds / Floating-Rate Bonds

Preferred Stock / Other Issuers / International Bonds / Innovation in the Bond Market

Inverse Floaters / Asset-Backed Bonds / Catastrophe Bonds / Indexed Bonds

#### 14.2 Bond Pricing 474

Bond Pricing between Coupon Dates

#### 14.3 Bond Yields 479

Yield to Maturity / Yield to Call / Realized Compound Return versus Yield to Maturity

#### 14.4 Bond Prices over Time 484

Yield to Maturity versus Holding-Period Return / Zero-Coupon Bonds and Treasury Strips / After-Tax Returns

#### 14.5 Default Risk and Bond Pricing 489

Junk Bonds / Determinants of Bond Safety / Bond Indentures

Sinking Funds / Subordination of Further Debt / Dividend Restrictions / Collateral

Yield to Maturity and Default Risk / Credit Default Swaps / Credit Risk and Collateralized Debt Obligations

End of Chapter Material 500-507

#### Chapter 15

## The Term Structure of Interest Rates 508

- **15.1 The Yield Curve 508** Bond Pricing
- **15.2 The Yield Curve and Future Interest Rates 511** The Yield Curve under Certainty / Holding-Period Returns / Forward Rates
- 15.3 Interest Rate Uncertainty and Forward Rates 516
- **15.4 Theories of the Term Structure 518** The Expectations Hypothesis / Liquidity Preference
- 15.5 Interpreting the Term Structure 522
- 15.6 Forward Rates as Forward Contracts 525 End of Chapter Material 527-535

#### Chapter 16

## Managing Bond Portfolios 536

#### 16.1 Interest Rate Risk 537

Interest Rate Sensitivity / Duration / What Determines Duration?

Rule 1 for Duration / Rule 2 for Duration / Rule 3 for Duration / Rule 4 for Duration / Rule 5 for Duration

#### 16.2 Convexity 546

Why Do Investors Like Convexity? / Duration and Convexity of Callable Bonds / Duration and Convexity of Mortgage-Backed Securities

#### 16.3 Passive Bond Management 554

Bond-Index Funds / Immunization / Cash Flow Matching and Dedication / Other Problems with Conventional Immunization

## 16.4 Active Bond Management 563

Sources of Potential Profit / Horizon Analysis End of Chapter Material 566-575

## PART V

# Options, Futures, and Other Derivatives 576

## Chapter 17

## **Options Markets: Introduction** 576

#### 17.1 The Option Contract 577

Options Trading / American and European Options / Adjustments in Option Contract Terms / The Options Clearing Corporation / Other Listed Options

Index Options / Futures Options / Foreign Currency Options / Interest Rate Options

#### 17.2 Values of Options at Expiration 583

Call Options / Put Options / Option versus Stock Investments

#### 17.3 Option Strategies 587

Protective Put / Covered Calls / Straddle / Spreads / Collars

17.4 The Put-Call Parity Relationship 596

#### 17.5 Option-like Securities 599

Callable Bonds / Convertible Securities / Warrants / Collateralized Loans / Levered Equity and Risky Debt

- 17.6 Financial Engineering 605
- 17.7 Exotic Options 607

Asian Options / Barrier Options / Lookback Options / Currency-Translated Options / Digital Options

End of Chapter Material 608-619

## Chapter 18

## **Option Valuation** 620

## 18.1 Option Valuation: Introduction 620

Intrinsic and Time Values / Determinants of Option Values

#### 18.2 Restrictions on Option Values 623

Restrictions on the Value of a Call Option / Early Exercise and Dividends / Early Exercise of American Puts

#### 18.3 Binomial Option Pricing 627

Two-State Option Pricing / Generalizing the Two-State Approach

#### 18.4 Black-Scholes Option Valuation 633

The Black-Scholes Formula / Dividends and Call Option Valuation / Put Option Valuation / Dividends and Put Option Valuation

#### 18.5 Using the Black-Scholes Formula 642

Hedge Ratios and the Black-Scholes Formula / Portfolio Insurance / Hedging Bets on Mispriced Options

## 18.6 Empirical Evidence on Option Pricing 652 End of Chapter Material 653–663

## Chapter 19

## Futures Markets 664

#### 19.1 The Futures Contract 665

The Basics of Futures Contracts / Existing Contracts

#### 19.2 Trading Mechanics 669

The Clearinghouse and Open Interest / The Margin Account and Marking to Market / Cash versus Actual Delivery / Regulations / Taxation

#### 19.3 Futures Markets Strategies 675

Hedging and Speculation / Basis Risk and Hedging

#### 19.4 Futures Prices 679

The Spot-Futures Parity Theorem / Spreads / Forward versus Futures Pricing

#### 19.5 Futures Prices versus Expected Spot Prices 685

Expectation Hypothesis / Normal Backwardation / Contango / Modern Portfolio Theory

End of Chapter Material 687–692

## Chapter 20

## Futures, Swaps, and Risk Management 693

#### 20.1 Foreign Exchange Futures 693

The Markets / Interest Rate Parity / Direct versus Indirect Quotes / Using Futures to Manage Exchange Rate Risk

#### 20.2 Stock-Index Futures 700

The Contracts / Creating Synthetic Stock Positions: An Asset Allocation Tool / Index Arbitrage / Using Index Futures to Hedge Market Risk

#### 20.3 Interest Rate Futures 707

Hedging Interest Rate Risk

#### 20.4 Swaps 709

Swaps and Balance Sheet Restructuring / The Swap Dealer / Other Interest Rate Contracts / Swap Pricing / Credit Risk in the Swap Market / Credit Default Swaps

#### 20.5 Commodity Futures Pricing 715

Pricing with Storage Costs / Discounted Cash Flow Analysis for Commodity Futures

#### End of Chapter Material 719–727

#### PART VI

# Security Analysis 728

Chapter 21

## Macroeconomic and Industry Analysis 728

- 21.1 The Global Economy 729
- 21.2 The Domestic Macroeconomy 731
- 21.3 Demand and Supply Shocks 733
- 21.4 Federal Government Policy 734

Fiscal Policy / Monetary Policy / Supply-Side Policies

#### 21.5 Business Cycles 737

The Business Cycle / Economic Indicators / Other Indicators

#### 21.6 Industry Analysis 742

Defining an Industry / Sensitivity to the Business Cycle / Sector Rotation / Industry Life Cycles

Start-Up Stage / Consolidation Stage / Maturity Stage / Relative Decline

#### Industry Structure and Performance

Threat of Entry / Rivalry between Existing Competitors / Pressure from Substitute Products / Bargaining Power of Buyers / Bargaining Power of Suppliers

## End of Chapter Material 754-762

## Chapter 22

## Equity Valuation Models 763

#### 22.1 Valuation by Comparables 763

Limitations of Book Value

## 22.2 Intrinsic Value versus Market Price 766

#### 22.3 Dividend Discount Models 767

The Constant-Growth DDM / Convergence of Price to Intrinsic Value / Stock Prices and Investment Opportunities / Life Cycles and Multistage Growth Models / Multistage Growth Models

#### 22.4 Price-Earnings Ratio 781

The Price-Earnings Ratio and Growth Opportunities / P/E Ratios and Stock Risk / Pitfalls in P/E Analysis / Combining P/E Analysis and the DDM / Other Comparative Valuation Ratios

Price-to-Book Ratio / Price-to-Cash-Flow Ratio / Price-to-Sales Ratio

- 22.5 Free Cash Flow Valuation Approaches 789 Comparing the Valuation Models
- 22.6 The Aggregate Stock Market 793 Explaining Past Behavior / Forecasting the Stock Market End of Chapter Material 795–806

## Chapter 23

## Financial Statement Analysis 807

23.1 The Major Financial Statements 807

The Income Statement / The Balance Sheet / The Statement of Cash Flows

- 23.2 Accounting versus Economic Earnings 812
- 23.3 Profitability Measures 812

Past versus Future ROE / Financial Leverage and ROE

23.4 Ratio Analysis 815

Decomposition of ROE / Turnover and Other Asset Utilization Ratios / Liquidity Ratios / Market Price Ratios: Growth versus Value / Choosing a Benchmark

- 23.5 Economic Value Added 824
- 23.6 An Illustration of Financial Statement Analysis 826
- 23.7 Comparability Problems 828

Inventory Valuation / Depreciation / Inflation and Interest Expense / Fair Value Accounting / Quality of Earnings / International Accounting Conventions

23.8 Value Investing: The Graham Technique 834 End of Chapter Material 835–846

## PART VII

# Applied Portfolio Management 847

## Chapter 24

## Portfolio Performance Evaluation 847

## 24.1 The Conventional Theory of Performance Evaluation 847

Average Rates of Return / Time-Weighted Returns versus Dollar-Weighted Returns / Adjusting Returns for Risk / The M<sup>2</sup> Measure of Performance / Sharpe's Measure as the Criterion for Overall Portfolios / Appropriate Performance Measures in Two Scenarios

Jane's Portfolio Represents Her Entire Risky Investment Fund / Jane's Choice Portfolio Is One of Many Portfolios Combined into a Large Investment Fund

The Role of Alpha in Performance Measures / Actual Performance Measurement: An Example / Realized Returns versus Expected Returns

- 24.2 Performance Measurement for Hedge Funds 858
- 24.3 Performance Measurement with Changing Portfolio Composition 861
- 24.4 Market Timing 862

The Potential Value of Market Timing / Valuing Market Timing as a Call Option / The Value of Imperfect Forecasting

24.5 Style Analysis 868

Style Analysis and Multifactor Benchmarks/Style Analysis in Excel

- 24.6 Morningstar's Risk-Adjusted Rating 872
- 24.7 Evaluating Performance Evaluation 873
- 24.8 Performance Attribution Procedures 874

Asset Allocation Decisions / Sector and Security Selection Decisions / Summing Up Component Contributions

End of Chapter Material 880–890

## Chapter 25

## International Diversification 891

25.1 Global Markets for Equities 892

Developed Countries / Emerging Markets / Market Capitalization and GDP / Home-Country Bias

**25.2 Risk Factors in International Investing 896** *Exchange Rate Risk / Political Risk* 

# 25.3 International Investing: Risk, Return, and Benefits from Diversification 903

Risk and Return: Summary Statistics / Are Investments in Emerging Markets Riskier? / Average Country-Index Returns and Capital Asset Pricing Theory / Benefits from International Diversification / Misleading Representation of Diversification Benefits / Realistic Benefits from International Diversification / Are Benefits from International Diversification Preserved in Bear Markets?

- 25.4 Assessing the Potential of International Diversification 916
- 25.5 International Investing and Performance Attribution 921

Constructing a Benchmark Portfolio of Foreign Assets / Performance Attribution

End of Chapter Material 925-930

## Chapter 26

## Hedge Funds 931

#### 26.1 Hedge Funds versus Mutual Funds 932

#### 26.2 Hedge Fund Strategies 933

Directional and Nondirectional Strategies / Statistical Arbitrage

#### 26.3 Portable Alpha 936

An Example of a Pure Play

#### 26.4 Style Analysis for Hedge Funds 938

#### 26.5 Performance Measurement for Hedge Funds 940

Liquidity and Hedge Fund Performance / Hedge Fund Performance and Survivorship Bias / Hedge Fund Performance and Changing Factor Loadings / Tail Events and Hedge Fund Performance

## 26.6 Fee Structure in Hedge Funds 947

End of Chapter Material 949–953

## Chapter 27

## The Theory of Active Portfolio Management 954

#### 27.1 Optimal Portfolios and Alpha Values 954

Forecasts of Alpha Values and Extreme Portfolio Weights / Restriction of Benchmark Risk

#### 27.2 The Treynor-Black Model and Forecast Precision 961

Adjusting Forecasts for the Precision of Alpha / Distribution of Alpha Values / Organizational Structure and Performance

#### 27.3 The Black-Litterman Model 965

A Simple Asset Allocation Decision / Step 1: The Covariance Matrix from Historical Data / Step 2: Determination of a Baseline Forecast / Step 3: Integrating the Manager's Private Views / Step 4: Revised (Posterior) Expectations / Step 5: Portfolio Optimization

#### 27.4 Treynor-Black versus Black-Litterman: Complements, Not Substitutes 971

The BL Model as Icing on the TB Cake / Why Not Replace the Entire TB Cake with the BL Icing?

#### 27.5 The Value of Active Management 973

A Model for the Estimation of Potential Fees / Results from the Distribution of Actual Information Ratios / Results from Distribution of Actual Forecasts / Results with Reasonable Forecasting Records

## 27.6 Concluding Remarks on Active Management 976 End of Chapter Material 977

Appendix A: Forecasts and Realizations of Alpha978Appendix B: The General Black-Litterman Model978

#### Chapter 28

## Investment Policy and the Framework of the CFA Institute 980

#### 28.1 The Investment Management Process 981

Objectives / Individual Investors / Personal Trusts / Mutual Funds / Pension Funds / Endowment Funds / Life Insurance Companies / Non-Life Insurance Companies / Banks

#### 28.2 Constraints 985

Liquidity / Investment Horizon / Regulations / Tax Considerations / Unique Needs

#### 28.3 Policy Statements 987

Sample Policy Statements for Individual Investors

#### 28.4 Asset Allocation 995

Taxes and Asset Allocation

#### 28.5 Managing Portfolios of Individual Investors 997

Human Capital and Insurance / Investment in Residence / Saving for Retirement and the Assumption of Risk / Retirement Planning Models / Manage Your Own Portfolio or Rely on Others? / Tax Sheltering

The Tax-Deferral Option / Tax-Deferred Retirement Plans / Deferred Annuities / Variable and Universal Life Insurance

#### 28.6 Pension Funds 1003

Defined Contribution Plans / Defined Benefit Plans / Alternative Perspectives on Defined Benefit Pension Obligations / Pension Investment Strategies

Investing in Equities / Wrong Reasons to Invest in Equities

#### 28.7 Investments for the Long Run 1007

Advice from the Mutual Fund Industry / Target Investing and the Term Structure of Bonds / Making Simple Investment Choices / Inflation Risk and Long-Term Investors

#### End of Chapter Material 1010-1020

REFERENCES TO CFA PROBLEMS 1021 GLOSSARY G-1 NAME INDEX I-1 SUBJECT INDEX I-4