PART 2  Developments in Investment Theory  137

CHAPTER 6
Efficient Capital Markets ............................. 139
Why Should Capital Markets Be Efficient?  140
Alternative Efficient Market Hypotheses  141
  Weak-Form Efficient Market Hypothesis 141,
  Semistrong-Form Efficient Market Hypothesis 142,
  Strong-Form Efficient Market Hypothesis 142
Tests and Results of Efficient Market Hypotheses  142
  Weak-Form Hypothesis: Tests and Results 142,
  Semistrong-Form Hypothesis: Tests and Results 145,
  Strong-Form Hypothesis: Tests and Results 155
Behavioral Finance  159
  Explaining Biases 160, Fusion Investing 161
Implications of Efficient Capital Markets  161
  Efficient Markets and Technical Analysis 161, Efficient
  Markets and Fundamental Analysis 162, Efficient Markets
  and Portfolio Management 164

CHAPTER 7
An Introduction to Portfolio Management...... 171
Some Background Assumptions  171
  Risk Aversion 172, Definition of Risk 172
Markowitz Portfolio Theory  172
  Alternative Measures of Risk 173, Expected Rates of
  Return 173, Variance (Standard Deviation) of Returns for
  an Individual Investment 174, Variance (Standard
  Deviation) of Returns for a Portfolio 175, Standard
  Deviation of a Portfolio 180, A Three-Asset Portfolio 187,
  Estimation Issues 188, The Efficient Frontier 188, The
  Efficient Frontier and Investor Utility 190

CHAPTER 8
An Introduction to Asset Pricing Models ...... 195
Capital Market Theory: An Overview  195
  Background for Capital Market Theory 196, Developing
  the Capital Market Line 196, Risk, Diversification, and the
  Market Portfolio 200, Investing with the CML: An
  Example 203
The Capital Asset Pricing Model  204
  A Conceptual Development of the CAPM 205, The
  Security Market Line 206
Relaxing the Assumptions  213
  Differential Borrowing and Lending Rates 213,
  Zero-Beta Model 214, Transaction Costs 215,
  Heterogeneous Expectations and Planning
  Periods 216, Taxes 216
Additional Empirical Tests of the CAPM  217
  Stability of Beta 217, Relationship between Systematic
  Risk and Return 217, Summary of CAPM Risk-Return
  Empirical Results 219
The Market Portfolio: Theory versus Practice  220

CHAPTER 9
Multifactor Models of Risk and Return ...... 229
Arbitrage Pricing Theory  230
  Using the APT 232, Security Valuation with the
  APT: An Example 233, Empirical Tests of the
  APT 235
Multifactor Models and Risk Estimation  238
  Multifactor Models in Practice 238, Estimating Risk in a
  Multifactor Setting: Examples 244

PART 3  Valuation Principles and
Practices  257

CHAPTER 10
Analysis of Financial Statements ............... 259
Major Financial Statements  260
  Generally Accepted Accounting Principles 260, Balance
  Sheet 261, Income Statement 261, Statement of Cash
  Flows 261, Measures of Cash Flow 263, Purpose of
  Financial Statement Analysis 265
Analysis of Financial Ratios  265
  Importance of Relative Financial Ratios 266
Computation of Financial Ratios  267
  Common Size Statements 267
Evaluating Internal Liquidity  267
  Internal Liquidity Ratios 268, Inventory Turnover 271
<table>
<thead>
<tr>
<th>Chapter Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluating Operating Performance</td>
<td>272</td>
</tr>
<tr>
<td>Operating Efficiency Ratios, Operating Profitability Ratios</td>
<td>275</td>
</tr>
<tr>
<td>Risk Analysis</td>
<td>281</td>
</tr>
<tr>
<td>Business Risk, Financial Risk, External Market Liquidity Risk</td>
<td>281</td>
</tr>
<tr>
<td>Analysis of Growth Potential</td>
<td>292</td>
</tr>
<tr>
<td>Importance of Growth Analysis, Determinants of Growth</td>
<td>293</td>
</tr>
<tr>
<td>Comparative Analysis of Ratios</td>
<td>295</td>
</tr>
<tr>
<td>Internal Liquidity, Operating Performance, Risk Analysis, Growth Analysis</td>
<td>297</td>
</tr>
<tr>
<td>Analysis of Non-U.S. Financial Statements</td>
<td>297</td>
</tr>
<tr>
<td>The Quality of Financial Statements</td>
<td>297</td>
</tr>
<tr>
<td>Balance Sheet, Income Statement, Footnotes</td>
<td>298</td>
</tr>
<tr>
<td>The Value of Financial Statement Analysis</td>
<td>298</td>
</tr>
<tr>
<td>Specific Uses of Financial Ratios</td>
<td>299</td>
</tr>
<tr>
<td>Stock Valuation Models, Estimating the Ratings on Bonds, Predicting Insolvency</td>
<td>300</td>
</tr>
<tr>
<td>Bankruptcy, Limitations of Financial Ratios</td>
<td>301</td>
</tr>
<tr>
<td>CHAPTER 11</td>
<td>309</td>
</tr>
<tr>
<td>Security Valuation Principles</td>
<td>309</td>
</tr>
<tr>
<td>An Overview of the Valuation Process</td>
<td>311</td>
</tr>
<tr>
<td>Why a Three-Step Valuation Process</td>
<td>311</td>
</tr>
<tr>
<td>General Economic Influences, Industry Influences, Company Analysis, Does the Three-Step Process Work?</td>
<td>314</td>
</tr>
<tr>
<td>Theory of Valuation</td>
<td>315</td>
</tr>
<tr>
<td>Stream of Expected Returns (Cash Flows), Required Rate of Return, Investment Decision Process: A Comparison of Estimated Values and Market Prices</td>
<td>316</td>
</tr>
<tr>
<td>Valuation of Alternative Investments</td>
<td>316</td>
</tr>
<tr>
<td>Valuation of Bonds, Valuation of Preferred Stock, Approaches to the Valuation of Common Stock</td>
<td>318</td>
</tr>
<tr>
<td>Why and When to Use the Discounted Cash Flow Valuation Approaches</td>
<td>319</td>
</tr>
<tr>
<td>Why and When to Use the Relative Valuation Techniques, Discounted Cash Flow Valuation Techniques</td>
<td>320</td>
</tr>
<tr>
<td>Infinite Period DDM and Growth Companies, Valuation with Temporary Supernormal Growth, Present Value of Operating Free Cash Flows, Present Value of Free Cash Flows to Equity</td>
<td>326</td>
</tr>
<tr>
<td>Relative Valuation Techniques</td>
<td>329</td>
</tr>
<tr>
<td>Estimating the Inputs: The Required Rate of Return and the Expected Growth Rate of Valuation Variables</td>
<td>334</td>
</tr>
<tr>
<td>Required Rate of Return, Estimating the Required Return for Foreign Securities, Expected Growth Rates, Estimating Dividend Growth for Foreign Stocks</td>
<td>341</td>
</tr>
<tr>
<td>PART 4 Analysis and Management of Common Stocks</td>
<td>347</td>
</tr>
<tr>
<td>CHAPTER 12</td>
<td>349</td>
</tr>
<tr>
<td>Macroanalysis and Microvaluation of the Stock Market</td>
<td>350</td>
</tr>
<tr>
<td>The Components of Market Analysis</td>
<td>349</td>
</tr>
<tr>
<td>Macromarket Analysis</td>
<td>350</td>
</tr>
<tr>
<td>Microvaluation Analysis</td>
<td>359</td>
</tr>
<tr>
<td>Applying the DDM Valuation Model to the Market, Market Valuation Using the Free Cash Flow to Equity (FCFE) Model</td>
<td>360</td>
</tr>
<tr>
<td>Valuation Using the Earnings Multiplier Approach</td>
<td>369</td>
</tr>
<tr>
<td>Two-Part Valuation Procedure, Importance of Both Components of Value</td>
<td>369</td>
</tr>
<tr>
<td>Estimating Expected Earnings per Share</td>
<td>372</td>
</tr>
<tr>
<td>Estimating the Stock Market Earnings Multiplier</td>
<td>381</td>
</tr>
<tr>
<td>Determinants of the Earnings Multiplier, Estimating the Required Rate of Return, Estimating the Growth Rate of Dividends, Estimating the Dividend-Payout Ratio</td>
<td>382</td>
</tr>
<tr>
<td>Estimating the Stock Market Earnings Multiplier: An Example, Calculating an Estimate of the Value for the Market Series, Using Other Relative Valuation Ratios</td>
<td>387</td>
</tr>
<tr>
<td>Microvaluation of World Markets</td>
<td>390</td>
</tr>
</tbody>
</table>
CHAPTER 13
Industry Analysis .............................. 395
Why Do Industry Analysis? 396
  Cross-Sectional Industry Performance 397, Industry
  Performance over Time 398, Performance of the
  Companies within an Industry 398, Differences in
  Industry Risk 398, Summary of Research on Industry
  Analysis 399, Industry Analysis Process 399
The Business Cycle and Industry Sectors 399
  Inflation 401, Interest Rates 401, International Economics
  401, Consumer Sentiment 401
Structural Economic Changes and Alternative
  Industries 402
  Demographics 402, Lifestyles 420, Technology 402,
  Politics and Regulations 403
Evaluating the Industry Life Cycle 404
Analysis of Industry Competition 405
  Competition and Expected Industry Returns 405
Estimating Industry Rates of Return 407
  Valuation Using the Reduced Form DDM 408, Industry
  Valuation Using the Free Cash Flow to Equity (FCFE)
  Model 415
Industry Analysis Using the Relative Valuation
  Approach 417
  The Earnings Multiple Technique 417
Other Relative Valuation Ratios 428
  The Price/Book Value Ratio 428, The Price/Cash Flow
  Ratio 431, The Price/Sales Ratio 431, Summary of
  Industry/Market Ratios 433
Global Industry Analysis 433

CHAPTER 14
Company Analysis and Stock Valuation ......... 437
Company Analysis versus Stock Valuation 438
  Growth Companies and Growth Stocks 438, Defensive
  Companies and Stocks 439, Cyclical Companies and
  Stocks 439, Speculative Companies and Stocks 440, Value
  versus Growth Investing 440
Economic, Industry, and Structural Links to Company
  Analysis 440
  Economic and Industry Influences 440, Structural
  Influences 441
Company Analysis 441
  Firm Competitive Strategies 442, Focusing a Strategy 443,
  SWOT Analysis 444, Some Lessons from Lynch 444,
  Tenets of Warren Buffett 445
Estimating Intrinsic Value 445
  Present Value of Dividends 446, Present Value of
  Dividends Model (DDM) 449, Present Value of Free
  Cash Flow to Equity 450, Present Value of Operating
  Free Cash Flow 452, Relative Valuation Ratio
  Techniques 455
Estimating Company Earnings per Share 458
  Company Sales Forecast 458, Estimating the Company
  Profit Margin 461
Walgreen Co.'s Competitive Strategies 461
  The Internal Performance 461, Importance of Quarterly
  Estimates 463
Estimating Company Earnings Multipliers 465
  Macroanalysis of the Earnings Multiple 465, Microanalysis of the Earnings Multiplier 466, Making the
  Investment Decision 470
Additional Measures of Relative Value 472
  Price/Book Value (P/BV) Ratio 472, Price/Cash Flow
  (P/CF) Ratio 474, Prices/Sales (P/S) Ratio 475, Summary of
  Relative Valuation Ratios 477
Analysis of Growth Companies 477
  Growth Company Defined 478, Actual Returns
  above Required Returns 478, Growth Companies
  and Growth Stocks 478, Alternative Growth
  Models 479, No-Growth Firm 479, Long-Run Growth
  Models 479, The Real World 482
Measures of Value Added 482
  Economic Value Added (EVA) 483, Market Value
  Added (MVA) 485, Relationships between EVA and
  MVA 485, The Franchise Factor 485, Growth Duration
  Model 486
Site Visits and the Art of the Interview 490
When to Sell 490
Influences on Analysts 491
  Efficient Markets 491, Paralysis of Analysis 492, Analyst
  Conflicts of Interest 492
Global Company and Stock Analysis 492
  Availability of Data 492, Differential Accounting
  Conventions 493, Currency Differences (Exchange
  Rate Risk) 493, Political (Country) Risk 493, Transaction
  Costs and Liquidity 493, Valuation Differences 493,
  Summary 493

CHAPTER 15
Equity Portfolio Management Strategies ........ 503
Passive versus Active Management 504
An Overview of Passive Equity Portfolio Management
  Strategies 505
  Index Portfolio Construction Techniques 506, Tracking
  Error and Index Portfolio Construction 507, Methods of
  Index Portfolio Investing 509
An Overview of Active Equity Portfolio Management
  Strategies 512
Fundamental Strategies 513, Technical Strategies 516, Anomalies and Attributes 517, Forming Momentum-Based Stock Portfolios: Two Examples 519, Tax Efficiency and Active Equity Management 522

Value versus Growth Investing: A Closer Look 523
An Overview of Style Analysis 527
Asset Allocation Strategies 531
Integrated Asset Allocation 532, Strategic Asset Allocation 534, Tactical Asset Allocation 535, Insured Asset Allocation 536, Selecting an Active Allocation Method 537

CHAPTER 16
Technical Analysis .......................... 543
Underlying Assumptions of Technical Analysis 544
Advantages of Technical Analysis 545
Challenges to Technical Analysis 546
Challenges to the Assumptions of Technical Analysis 546, Challenges to Technical Trading Rules 547
Technical Trading Rules and Indicators 547
Contrary-Opinion Rules 548, Follow the Smart Money 550, Momentum Indicators 551, Stock Price and Volume Techniques 552
Technical Analysis of Foreign Markets 559
Foreign Stock Market Indexes 559, Technical Analysis of Foreign Exchange Rates 560
Technical Analysis of Bond Markets 560

PART 5 Analysis and Management of Bonds 567

CHAPTER 17
Bond Fundamentals ................................ 569
Basic Features of a Bond 569
Bond Characteristics 570, Rates of Return on Bonds 572
The Global Bond Market Structure 572
Participating Issuers 573, Participating Investors 575, Bond Ratings 575
Alternative Bond Issues 576
Obtaining Information on Bond Prices 592
Interpreting Bond Quotes 593

CHAPTER 18
The Analysis and Valuation of Bonds .......... 601
The Fundamentals of Bond Valuation 602
The Present Value Model 602, The Yield Model 604
Computing Bond Yields 605
Nominal Yield 605, Current Yield 606, Promised Yield to Maturity 606, Promised Yield to Call 608, Realized (Horizon) Yield 609
Calculating Future Bond Prices 610
Realized (Horizon) Yield with Differential Reinvestment Rates 611, Price and Yield Determination on Noninterest Dates 613, Yield Adjustments for Tax-Exempt Bonds 613, Bond Yield Books 614
Bond Valuation Using Spot Rates 614
What Determines Interest Rates? 616
Forecasting Interest Rates 617, Fundamental Determinants of Interest Rates 618, The Term Structure of Interest Rates 621
Calculating Forward Rates from the Spot Rate Curve 625
Term Structure Theories 628
Expectations Hypothesis 628, Liquidity Preference (Term Premium) Hypothesis 630, Segmented Market Hypothesis 630, Trading Implications of the Term Structure 631, Yield Spreads 631
What Determines the Price Volatility for Bonds? 632
Trading Strategies 635, Duration Measures 635, Modified Duration and Bond Price Volatility 639, Bond Convexity 640, Duration and Convexity for Callable Bonds 645, Limitations of Macaulay and Modified Duration 648
Yield Spreads with Embedded Options 656
Static Yield Spreads 656, Option-Adjusted Spread 657

CHAPTER 19
Bond Portfolio Management Strategies ....... 669
Bond Portfolio Performance, Style, and Strategy 669
Passive Management Strategies 672
Buy-and-Hold Strategy 672, Indexing Strategy 673, Bond Indexing in Practice: An Example 674
Active Management Strategies 675
Interest Rate Anticipation 676, Valuation Analysis 678, Credit Analysis 678, Yield Spread Analysis 683, Implementing an Active Bond Transaction 683, Active Global Bond Investing: An Example 687
Core-Plus Management Strategies 689
Matched-Funding Management Strategies 691
Dedicated Portfolios 691, Immunization Strategies 693, Horizon Matching 701
Contingent and Structured Management Strategies 702
Contingent Immunization 702
PART 6   Derivative Security Analysis   715

CHAPTER 20
An Introduction to Derivative Markets and Securities   717

Overview of Derivative Markets   718
The Language and Structure of Forward and Futures Markets 719, Interpreting Futures Price Quotations: An Example 720, The Language and Structure of Option Markets 723, Interpreting Option Price Quotations: An Example 724

Investing with Derivative Securities   726
The Basic Nature of Derivative Investing 726, Basic Payoff and Profit Diagrams for Forward Contracts 730, Basic Payoff and Profit Diagrams for Call and Put Options 731, Option Profit Diagrams: An Example 734

The Relationship between Forward and Option Contracts   736
Put-Call Spot Parity 736, Put-Call Parity: An Example 738, Creating Synthetic Securities Using Put-Call Parity 739, Adjusting Put-Call-Spot Parity for Dividends 740, Put-Call-Forward Parity 741

An Introduction to the Use of Derivatives in Portfolio Management   743
Restructuring Asset Portfolios with Forward Contracts 743, Protecting Portfolio Value with Put Options 744, An Alternative Way to Pay for a Protective Put 747

CHAPTER 21
Forward and Futures Contracts   757
An Overview of Forward and Futures Trading   758
Futures Contract Mechanics 759, Comparing Forward and Futures Contracts 761

Hedging with Forwards and Futures   762
Hedging and the Basis 762, Understanding Basis Risk 763, Calculating the Optimal Hedge Ratio 763

Forward and Futures Contracts: Basic Valuation Concepts   764
Valuing Forwards and Futures 765, The Relationship between Spot and Forward Prices 766

Financial Forwards and Futures: Applications and Strategies   767
Interest Rate Forwards and Futures 768, Long-Term Interest Rate Futures 768, Short-Term Interest Rate Futures 772, Stock Index Futures 776, Currency Forwards and Futures 782

CHAPTER 22
Option Contracts   795
An Overview of Option Markets and Contracts   796

PART 7   Specification and Evaluation of Asset Management   883

CHAPTER 24
Professional Money Management, Alternative Assets, and Industry Ethics   885
The Asset Management Industry: Structure and Evolution   886
Private Management and Advisory Firms   890
Investment Strategy at a Private Money Management Firm 892
Organization and Management of Investment Companies 893
   Valuing Investment Company Shares 893, Closed-End versus Open-End Investment Companies 894,
   Fund Management Fees 897, Investment Company Portfolio Objectives 897, Breakdown by Fund
   Characteristics 898, Global Investment Companies 901,
   Mutual Fund Organization and Strategy: An Example 901

Investing in Alternative Asset Classes 903
   Hedge Funds 905, Characteristics of a Hedge Fund 906,
   Hedge Fund Strategies 907, Risk Arbitrage Investing: A Closer Look 909, Hedge Fund Performance 910, Private Equity 912

Ethics and Regulation in the Professional Asset Management Industry 920
   Regulation in the Asset Management Industry 920,
   Standards for Ethical Behavior 922, Examples of Ethical Conflicts 923

What Do You Want from a Professional Asset Manager? 924

CHAPTER 25

Evaluation of Portfolio Performance 933
What Is Required of a Portfolio Manager? 934
Early Performance Measurement Techniques 935
   Portfolio Evaluation before 1960 935, Peer Group Comparisons 935

Composite Portfolio Performance Measures 935
   Treynor Portfolio Performance Measure 937, Sharpe Portfolio Performance Measure 939, Jensen Portfolio Performance Measure 941, The Information Ratio Performance Measure 942, Comparing the Composite Performance Measures 944

Application of Portfolio Performance Measures 946
Portfolio Performance Evaluation: Some Extensions 952
   Components of Investment Performance 952, Performance Measurement with Downside Risk 954,
   Holdings-Based Performance Measurement 956, Performance Attribution Analysis 960, Measuring Market Timing Skills 963

Factors That Affect Use of Performance Measures 964
   Demonstration of the Global Benchmark Problem 964, Implications of the Benchmark Problems 966, Required Characteristics of Benchmarks 966

Evaluation of Bond Portfolio Performance 967
   Returns-Based Bond Performance Measurement 967, Bond Performance Attribution 968

Reporting Investment Performance 971
   Time-Weighted and Money-Weighted Returns 971, Performance Presentation Standards 972

Chapter Appendices 983

Appendix A How to Become a CFA® Charterholder 1017
Appendix B Code of Ethics and Standards of Professional Conduct 1018
Appendix C Interest Tables 1020
Appendix D Standard Normal Probabilities 1024
Comprehensive References List 1025
Glossary 1040
Index 1053
Portfolio management is a complex activity that can be broken down into the following steps:

1. **Specification of Investment Objectives and Constraints**: Most investors seek current income, capital appreciation, and safety of principal.

2. **Choice of the Asset Mix**: The most important decision in portfolio management is the asset mix decision. This step is concerned with the proportions of equities and fixed income securities in the portfolio. The appropriate mix depends mainly on the risk tolerance and investment horizon of the investor.

3. **Formulation of Portfolio Strategy**: Once a clear strategic portfolio analysis is performed, the company's management studies and evaluates its business activities with the aim of investing in the most profitable and (or) strategically promising directions and cutting or completely stopping investments in unprofitable projects. In the process of strategic portfolio analysis, the relative attractiveness of markets and the competitiveness of the company in each of these markets are assessed. It is assumed that the company's portfolio should be balanced, i.e., the correct combination of units or products that need capital to ensure distribution of weights in the Investment Analysis and Portfolio Management Module Curriculum Chapter No 1. Title. Weights (%). Objectives of Investment Decisions.

### Distribution of Investment Analysis Weights (%)

- **Objectives of Investment Decisions**: 92%

- **Endowment Funds**: Endowment funds are generally non-profit organizations that manage funds to generate a steady return to help them fulfill their investment objectives.