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- Bond analysis and bond portfolio management strategies—with coverage of asset-backed securities, mortgage-backed securities, yield measures, multifactor risk models, interest rate derivatives, and more

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## Contents

### About the Editors  
About the Editors xiii

### Contributing Authors  
Contributing Authors xv

### Foreword  
Foreword xvii

### PART ONE: Instruments, Asset Allocation, Portfolio Selection, and Asset Pricing  
Instruments, Asset Allocation, Portfolio Selection, and Asset Pricing 1

#### CHAPTER 1: Overview of Investment Management  
Overview of Investment Management 3  
*Frank J. Fabozzi and Harry M. Markowitz*

- Setting Investment Objectives 4
- Establishing an Investment Policy 4
- Selecting a Portfolio Strategy 6
- Constructing the Portfolio 6
- Measuring and Evaluating Performance 7

**Key Points** 14

#### CHAPTER 2: Asset Classes, Alternative Investments, Investment Companies, and Exchange-Traded Funds  
Asset Classes, Alternative Investments, Investment Companies, and Exchange-Traded Funds 15  
*Mark J. P. Anson, Frank J. Fabozzi, and Frank J. Jones*

- Asset Classes 15
- Overview of Alternative Asset Products 21
- Investment Companies 31
- Exchange-Traded Funds 36
- Mutual Funds vs. ETFs: Relative Advantages 39

**Key Points** 41

**Questions** 44
CHAPTER 3
Portfolio Selection 45

Frank J. Fabozzi, Harry M. Markowitz, Petter N. Kolm, and Francis Gupta

Some Basic Concepts 47
Measuring a Portfolio’s Expected Return 49
Measuring Portfolio Risk 52
Portfolio Diversification 56
Choosing a Portfolio of Risky Assets 60
Issues in Portfolio Selection 68
Key Points 76
Questions 78

CHAPTER 4
Capital Asset Pricing Models 79

Frank J. Fabozzi and Harry M. Markowitz

Sharpe-Lintner CAPM 79
Roy CAPM 81
Confusions Regarding the CAPM 82
Two Meanings of Market Efficiency 83
CAPM Investors Do Not Get Paid for Bearing Risk 94
The “Two Beta” Trap 95
Key Points 100
Questions 101

CHAPTER 5
Factor Models 103

Guofu Zhou and Frank J. Fabozzi

Arbitrage Pricing Theory 104
Types of Factor Models 105
Factor Model Estimation 112
Key Points 118
Appendix: Principal Component Analysis in Finance 119
Questions 124

CHAPTER 6
Modeling Asset Price Dynamics 125

Dessislava A. Pachamanova and Frank J. Fabozzi

Financial Time Series 125
Binomial Trees 127
Arithmetic Random Walks 128
CHAPTER 10
Approaches to Common Stock Valuation

Pamela P. Drake, Frank J. Fabozzi, and Glen A. Larsen Jr.

Discounted Cash Flow Models 271
Relative Valuation Methods 278
Key Points 284
Questions 285

CHAPTER 11
Quantitative Equity Portfolio Management

Andrew Alford, Robert Jones, and Terence Lim

Traditional and Quantitative Approaches to Equity Portfolio Management 289
Forecasting Stock Returns, Risks, and Transaction Costs 292
Constructing Portfolios 298
Trading 300
Evaluating Results and Updating the Process 302
Key Points 304
Questions 305

CHAPTER 12
Long-Short Equity Portfolios

Bruce I. Jacobs and Kenneth N. Levy

Constructing a Market-Neutral Portfolio 308
The Importance of Integrated Optimization 312
Adding Back a Market Return 316
Some Concerns Addressed 321
Evaluating Long-Short 323
Key Points 324
Questions 325
CHAPTER 13
Multifactor Equity Risk Models 327
Frank J. Fabozzi, Raman Vardharaj, and Frank J. Jones

Model Description and Estimation 328
Risk Decomposition 330
Applications in Portfolio Construction and Risk Control 336
Key Points 341
Questions 343

CHAPTER 14
Fundamentals of Equity Derivatives 345
Bruce M. Collins and Frank J. Fabozzi

The Role of Derivatives 345
Listed Equity Options 348
Futures Contracts 366
Pricing Stock Index Futures 370
OTC Equity Derivatives 375
Structured Products 380
Key Points 381
Questions 382

CHAPTER 15
Using Equity Derivatives in Portfolio Management 383
Bruce M. Collins and Frank J. Fabozzi

Equity Investment Management 384
Portfolio Applications of Listed Options 386
Portfolio Applications of Stock Index Futures 390
Applications of OTC Equity Derivatives 399
Risk and Expected Return of Option Strategies 410
Key Points 413
Questions 414

PART THREE
Bond Analysis and Portfolio Management 415

CHAPTER 16
Bonds, Asset-Backed Securities, and Mortgage-Backed Securities 417
Frank J. Fabozzi

General Features of Bonds 417
U.S. Treasury Securities 421
CHAPTER 20
The Art of Fixed Income Portfolio Investing 557

Chris P. Dialynas and Ellen J. Rachlin

The Global Fixed Income Portfolio Manager 558
The Global Challenge 565
Portfolio Parameters 565
Regulatory Changes, Demographic Trends, and Institutional Bias 568
Information in the Markets 569
Duration and Yield Curve 573
Volvatility 574
International Corporate Bonds 577
International Investing and Political Externalities 579
Foreign Investment Selection 579
Currency Selection 582
Key Points 583
Questions 584

CHAPTER 21
Multifactor Fixed Income Risk Models and Their Applications 585

Anthony Lazanas, António Baldaque da Silva, Radu Gâbudean, and Arne D. Staal

Approaches Used to Analyze Risk 587
Applications of Risk Modeling 615
Key Points 621
Questions 622

CHAPTER 22
Interest Rate Derivatives and Risk Control 623

Frank J. Fabozzi

Interest Rate Futures and Forward Contracts 623
Interest Rate Swaps 634
Interest Rate Options 640
Interest Rate Agreements (Caps and Floors) 642
Key Points 643
Questions 644

CHAPTER 23
Credit Default Swaps and the Indexes 647

Stephen J. Antczak, Douglas J. Lucas, and Frank J. Fabozzi

What Are Credit Default Swaps? 648
Credit Default Swaps Indexes 654
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Harry M. Markowitz has applied computer and mathematical techniques to various practical decision making areas. In finance, in an article in 1952 and a book in 1959, he presented what is now referred to as MPT, “modern portfolio theory.” This has become a standard topic in college courses and texts on investments and is widely used by institutional investors for tactical asset allocation, risk control, and attribution analysis. In other areas, Dr. Markowitz developed “sparse matrix” techniques for solving very large mathematical optimization problems. These techniques are now standard in production software for optimization programs. He also designed and supervised the development of the SIMSCRIPT programming language. SIMSCRIPT has been widely used for programming computer simulations of systems like factories, transportation systems, and communication networks. In 1989, Dr. Markowitz received the John von Neumann Award from the Operations Research Society of America for his work in portfolio theory, sparse matrix techniques, and SIMSCRIPT. In 1990, he shared the Nobel Prize in Economics for his work on portfolio theory.