

Advanced Portfolio Management Exam Fall 2011

Important Exam Information:

Exam Date and Time	A read-through time will be given prior to the start of the exam—15 minutes in the morning session and 15 minutes in the afternoon session.
Exam Registration	Candidates may register online or with an application.
Order Study Notes	Study notes are part of the required syllabus and are not available electronically but may be purchased through the online store.
Introductory Study Note	The Introductory Study Note has a complete listing of all study notes as well as errata and other important information.
Case Study - Updated 7.21.11	A copy of the case study will be provided with the examinations. Candidates will not be allowed to bring their copy of the case study into the examination room.
Table	A cumulative normal distribution table will be provided with the exam.
Formula Package	A Formula Package will be provided with the exam. Please see the Introductory Study Note for more information.
Past Exams	Past Exams from 2000-present are available on SOA web site
Updates	Candidates should be sure to check the Updates page on the exam home page periodically for additional corrections or notices.

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1. Learning Objective: Candidate will understand and be able to follow the investment management process for insurance companies, pension funds and other financial intermediaries

Learning Outcomes: The candidate will be able to:

- a. Explain how an investment policy and an investment strategy can help manage risk and create value.
- b. Identify the obligations of a fiduciary in managing investment portfolios and explain how they apply in a given situation.
- c. Determine how a client's objectives, needs and constraints affect the selection of an investment strategy or the construction of a portfolio. Considerations include:
 - Funding objective
 - Risk-return trade-off
 - Regulatory and rating agency requirements
 - Risk appetite
 - Liquidity constraints
 - Capital, tax, and accounting considerations
- d. Identify and describe the impact on investment policy of financial and non-financial risks including but not limited to: Currency risk, credit risk, spread risk, liquidity risk, interest rate risk, equity risk, product risk, operational risk, legal risk and political risk.

Syllabus Resources:

Maginn & Tuttle, *Managing Investment Portfolios*, 3rd Ed., 2007

- Ch. 1, The Portfolio Management Process and the Investment Policy Statement, by Maginn, Tuttle, McLeavey, & Pinto
- Ch. 3, Managing Institutional Investor Portfolios, by Tschampion, Siegel, Takahashi, & Maginn.

V-C126-07: Derivatives: Practices and Principles , Section II

V-C127-09: Liability-Relative Strategic Asset Allocation Policies

V-C136-10: Fiduciary Liability Issues for Selection of Investments

V-C137-09: Introduction to the Formation of Investment Strategy for Life Insurance Companies and Pension Plans

V-C138-09: Managing your Advisor: A Guide to Getting the Most Out of the Portfolio Management Process

V-C140-09: SOA Specialty Guide to Economic Capital (exclude appendices 2 and 3)

Liquidity Risk Measurement, CIA Educational Note

<http://www.actuaries.ca/members/publications/1996/9626e.pdf>

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- 2. Learning Objective: The candidate will understand the variety of financial instruments available to managed portfolios.**

Learning Outcome: The candidate will be able to:

- a. Compare and select specialized financial instruments that can be used in the construction of an asset portfolio supporting financial institutions and pension plan liabilities.

Syllabus Resources

Fabozzi, *Handbook of Fixed Income Securities*, 7th Edition, 2005

- Ch. 1, Overview of the Types and Features of Fixed Income Securities
- Ch. 10, U.S. Treasury and Agency Securities (pp. 229-231, 241-245)
- Ch. 11, Municipal Bonds (pp. 251-256)
- Ch. 12, Private Money Market Instruments (pp. 285-297)
- Ch. 13, Corporate Bonds (pp. 305-327, 331-335)
- Ch. 14, Medium-term notes (pp. 339-340, 344-350)
- Ch. 15, Inflation-Linked Bonds (pp. 351-359, 364-369)
- Ch. 16, Floating-Rate Securities (pp. 373-379, 382-383)
- Ch. 20, Emerging Market Debt (pp. 441-453)
- Ch. 22, An Overview of Mortgages and the Mortgage Market (pp. 487-501)
- Ch. 23, Agency Mortgage-Backed Securities (pp. 513-527)
- Ch. 24, Collateralized Mortgage Obligations
- Ch. 26, Residential Asset-Backed Securities (pp. 589-595)
- Ch. 27, Commercial Mortgage-Backed Securities (pp. 615-625)

V-C143-09: Hedge Funds: Past, Present, and Future, R. Stulz, *Journal of Economic Perspectives*, Spring 2007

V-C144-09: Hedge Funds: Risk and Return, by B. Malkiel and A. Saha, *Financial Analysts Journal*, November 2005.

V-C146-09: Greer, R., The Role of Commodities in Investment Portfolios, CFA Conference proceedings Quarterly December 2007, Vol 24 #4

V-C154-09: Bertram, R., "Balancing the Opportunities in Real Return Investments," *CFA Institute Conference Proceedings Quarterly*, September 2007

V-C165-09: IMF, Global Financial Stability Report, April 2008, Chapter 2, pp.54-84.

V-C174-09: Anson, *The Handbook of Alternative Assets*, Second Edition, 2006, Chapter 20 and Chapter 22

V-C179-10: The Economics of Structured Finance, *Journal of Economic Perspective*, Winter 2009

V-C186-11: When Safe Proves Risky: Commercial Paper during the Financial Crisis of 2007-2009, *Journal of Economic Perspectives*, Winter 2010

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3. Asset Allocation

Learning Objective:

The candidate will understand the importance of the techniques and theory behind portfolio asset allocation

Learning Outcomes: The Candidate will be able to:

- a. Explain the importance of asset allocation, relative to a particular situation
- b. Critique and propose asset allocation strategies that can be used to construct an asset portfolio.
- c. Evaluate the significance of liabilities in the determination of the asset allocation
- d. Demonstrate how to include risk management principles in the establishment of investment policy and strategy including asset allocation.

Syllabus Resources:

Maginn & Tuttle, *Managing Investment Portfolios*, 3rd Ed.

- Ch. 5, “Asset Allocation”, by Sharpe, Chen, Pinto, & McLeavey
- Ch. 7, “Equity Portfolio Management,” by Gastineau, Olman, & Zielinski

Litterman, *Modern Investment Management: An Equilibrium Approach*, 2003

- Ch. 9, Issues in Strategic Asset Allocation
- Ch. 10, Strategic Asset Allocation in the Presence of Uncertain Liabilities
- Ch. 26, Strategic Asset Allocation and Hedge Funds

V-C111-07: Creating Value in Pension Plans (Or, Gentlemen Prefer Bonds)

V-C127-09: Liability-Relative Strategic Asset Allocation Policies

V-C148-09: Perspectives on the Equity Risk Premium, by J. Siegel, *Financial Analysts Journal*, November/December 2005.

V-C149-09: Long-Term Returns on the Original S&P 500 Companies,” by J. Siegel & J. Schwartz, *Financial Analysts Journal*, January/February 2006.

V-C150-09: Stocks, Bonds, the Sharpe Ratio, and the Investment Horizon,” by C. Hodges, W. Taylor, & J. Yoder, *Financial Analysts Journal*, November/December 1997

V-C164-09: Dynkin, L., J. Hyman, & W. Wu, Value of Security Selection versus Asset Allocation in Credit Markets: Part II – An Imperfect Foresight Study, Lehman Bros., June 2000

V-C184-11: Deciphering the Liquidity and Credit Crunch 2007-2008 , *Journal of Economic Perspectives* Volume 23 #1, Winter 2009

V-C187-11: The U.S. Equity Return Premium: Past, Present, Future, *Journal of Economic Perspectives*, Vol. 23, Winter 2009

V-C193-10: Tilman, *Asset/Liability Management of Financial Institutions: Maximising Shareholder Value Through Risk-Conscious Investing*, 2003, Ch. 14

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4. Learning Objective:

The candidate will understand the specific considerations relative to managing an equity and /or alternative asset portfolio within an asset allocation framework

Learning Outcomes: The candidate will be able to:

- a. Explain how an investment policy affects the selection of an investment strategy or the selection of an optimal portfolio.
- b. Assess a portfolio position against portfolio management objectives using qualitative and quantitative techniques
- c. Evaluate situations associated with the presence of embedded options and hedging strategies.
- d. Recommend an investment strategy for a given situation
 - Portfolio policy and objectives
 - Asset selection criteria
 - Capital market expectations
 - Risk management strategy
 - Portfolio rebalancing strategy

Syllabus Resources:

Babbel & Fabozzi, *Investment Management for Insurers*, 1999

- Ch. 26, The Use of Derivatives in Managing Equity Portfolios

Maginn & Tuttle, *Managing Investment Portfolios*, 3rd Ed. 2007,

- Ch. 7, “Equity Portfolio Management,” by Gastineau, Olman, & Zielinski
- Ch. 8, “Alternative Investments Portfolio Management,” by Yau, Schneeweis, Robinson, & Weiss
- Ch. 11, “Monitoring & Rebalancing,” by Arnott, Burns, Plaxco, & Moore

Litterman, *Modern Investment Management: An Equilibrium Approach*, 2003

- Ch. 26, Strategic Asset Allocation and Hedge Funds
- Ch. 27, Managing a Portfolio of Hedge Funds

V-C135-08: Living with Mortality: Longevity Bonds and Other Mortality-Linked Securities, by Blake, Cairns and Dowd, Institute of Actuaries, 2006 (Sections 3-5)

V-C174-09: Anson, *The Handbook of Alternative Assets*, Second Edition, 2006, Chapters 20 and 22

V-C192-11: *Commercial Real Estate Analysis & Investments* by Geltner, Miller, Clayton and Eichholtz, Chapter 12, Market Value and Investment Value

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5. Learning Objective:

The candidate will understand the specific considerations relative to managing a fixed income portfolio within an asset allocation framework

Learning Outcomes: The Candidate will be able to:

- a. Explain how an investment policy affects the selection of an investment strategy or the selection of an optimal portfolio.
- b. Assess a portfolio position against portfolio management objectives using qualitative and quantitative techniques
- c. Evaluate situations associated with the presence of embedded options and hedging strategies.
- d. Recommend an investment strategy for a given situation
 - Portfolio policy and objectives
 - Asset selection criteria
 - Capital market expectations
 - Risk management strategy
 - Portfolio rebalancing strategy
- e. Show the impact of risk analysis, including interest rate and equity risk, on portfolio construction.
- f. Demonstrate how to apply funding and portfolio management strategies to control interest rate and credit risk, including key rate risks.
- g. Explain how derivatives, synthetic securities, and financial contracting may be used to manage risk and recommend appropriate ones for a given situation.
- h. Describe and critique the role of rating agencies in evaluating credit risk.
- i. Explain and recommend best practices in credit risk management, including:
 - credit and underwriting policies
 - comprehensive due diligence
 - diversification requirements and aggregate counter-party exposure limits
 - use of credit derivatives and credit support agreements
- j. Recommend a credit risk management strategy for a given situation

Syllabus Resources:

Fabozzi, *Handbook of Fixed Income Securities*, 7th Edition, 2005

- Ch. 48, Dedicated Bond Portfolios

Maginn & Tuttle, *Managing Investment Portfolios*, 3rd Ed. 2007,

- Ch. 6, Fixed-Income Portfolio Management, by Fong & Guin

Crouhy, et al., *Risk Management*, 2001

- Ch. 7, Credit Rating Systems
- Ch. 12, Hedging Credit Risk

V-C159-09: Long-Term Economic and Market Trends and Their Implications for Asset-Liability Management of Insurance Companies

V-C164-09: Dynkin, L., J. Hyman, & W. Wu, "Value of Security Selection versus Asset Allocation in Credit Markets: Part II – An Imperfect Foresight Study, Lehman Bros., June, 2000.

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- V-C182-10: “*Modeling of Mortgage Defaults*”, January 22, 2008, pp 5 – 38 excluding pp13-25(background only)
- V-C183-10: “Bond-CDS Basis Handbook”, February 2009, pp. pp, 3- 48
- V-C185-11: Mind the Gap: Using Derivative Overlays to Hedge Pension Duration, *Financial Analysis Journal*, Volume 65, #4, CFA Institute

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6. Learning Objective:

The candidate will understand and apply portfolio management Quantitative Techniques

Learning Outcomes: The candidate will be able to:

- a. Define and evaluate credit risk as related to fixed income securities and derivatives counter parties.
- b. Define and evaluate spread risk as related to fixed income securities and derivatives.
- c. Describe, contrast and assess credit risk measurement techniques and models.
- d. Calculate effective duration and effective key-rate durations of a portfolio.
- e. Contrast modified duration and effective duration measures.
- f. Explain the concepts of immunization including modern refinements and practical limitations.

Syllabus Resources:

Fabozzi, F.J., *Handbook of Fixed Income Securities*, 7th Edition, 2005

- Ch. 47, Bond Immunization: An Asset/Liability Strategy

Babbel, D. and Fabozzi, F.J., *Investment Management for Insurers*, 1999

- Ch. 17, Effective and Ineffective Duration Measures for Life Insurers

Crouhy, Galai, et al., *Risk Management*, 2001

- Ch. 8, Credit Migration Approach to Measuring Credit Risk
- Ch. 9, The Contingent Claim Approach to Measuring Credit Risk
- Ch. 10, Other Approaches: The Actuarial and Reduced-Form Approaches to Measuring Credit Risk
- Ch. 11, Comparison of Industry-Sponsored Credit Models and Associated Back-Testing Issues

V-C141-09: Modern Valuation Techniques

V-C181-10: McNeil, Frey and Embrechts, "Quantitative Risk Management", 2005

Ch. 9, Dynamic Credit Risk Models and Credit Derivatives, pp. 400 – 408

V-C188-11: Babbel, Merrill and Panning, *Default Risk and the Effective Duration of Bonds*
Financial Analysts Journal January 1997.

V-C189-11: Salomon Smith Barney, Mortgage Duration and Price Moves, March 6, 2001

V-C190-11: Bluhm, Overbeck and Wagner, *Introduction to Credit Risk Modeling*, Chapter 1

V-C191-11: B. Tuckman, *Fixed Income Securities* – chapters 5 -7

Fair Valuation of Insurance Liabilities: Principles and Methods, AAA Monograph,
September 2002 http://www.actuary.org/pdf/finreport/fairval_sept02.pdf

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7. Learning Objective:

The candidate will understand the purposes and methods of portfolio performance measurement

Learning Outcomes: The candidate will be able to:

- a. Describe and assess performance measurement methodologies for investment portfolios.
- b. Describe and assess techniques that can be used to select or build a benchmark for a given portfolio or portfolio management style.
- c. Recommend a benchmark for a given portfolio or portfolio management style.
- d. Recommend a performance measurement methodology.

Syllabus Resources:

Fabozzi. *Handbook of Fixed Income Securities*, 7th Edition, 2005

- Ch. 44, Quantitative Management of Benchmarked Portfolios, by F. Fabozzi

Babbel & Fabozzi, *Investment Management for Insurers*, 1999

- Ch. 3, A Performance Measurement System for Insurers by Babbel, Stricker, & Vanderhoof.

Maginn & Tuttle, *Managing Investment Portfolios: A Dynamic Process*, Third Edition

- Ch. 12, "Evaluating Portfolio Performance," by Bailey, Richards, & Tierney

V-C168-09: Murira, B. and H. Sierra, Fixed Income Attribution: A Unified Framework – Part 1, *Journal of Performance Measurement* Fall 2006, pp. 23 – 35.

V-C169-09: Murira, B. and H. Sierra, "Fixed Income Attribution: A Unified Framework – Part 2," *Journal of Performance Measurement* Winter 2006/2007, pp. 8 – 21.

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8. Learning Objective:

The candidate will understand the behavior characteristics of individual and firms, and be able to identify and apply concepts of behavioral finance

Learning Outcomes: The candidate will be able to:

- a. Explain how behavioral characteristics of individuals or firms affect the investment or capital management process.
- b. Describe how behavioral finance explains the existence of some market anomalies.
- c. Identify and apply the concepts of behavioral finance with respect to investors, option holders and policyholders, including optimal behavior, real behavior, model behavior, and empirical studies.

Syllabus Resources

- V-C119-07: From Efficient Markets Theory to Behavioral Finance, by R. Shiller, *Journal of Economic Perspectives*, Winter 2003
- V-C120-07: The Efficient Market Hypothesis and Its Critics, B. Malkiel, *Journal of Economic Perspectives*, Winter 2003,
- V-C122-07: Anomalies: The Law of One Price in Financial Markets, Lamont & Thaler, *Journal of Economic Perspectives*, Fall 2003,
- V-C124-07: Siegel, J. *Stocks for the Long Run*, Ch. 7, The Great Bull Market, the New Economy, the Age Wave, and Future Stock Returns
- V-C171-09: Behavioral Finance and Investment Committee Decision Making, by A. Wood, *CFA Institute Conference Proceedings*, December 2006.
- V-C172-09: Managing the Credit Cycle: A Behavioral Risk Interpretation, by J. Rizzi, *Commercial Lending Review*, January 2006.
- V-C173-09: What Are Stock Investors' Actual Historical Returns? Evidence from Dollar-Weighted Returns, by I. Dichev, *American Economic Review*, 91(1):386-401, March 2007.
- V-C180-10: A. Lo, The Three P's of Total Risk Management, *Financial Analyst Journal*, January/February 1999

Byrne & Brooks, "Behavioral Finance: Theory and Evidence,"

<http://www.cfapubs.org/doi/pdf/10.2470/rflr.v3.n1.1?prevSearch=allfield%3A%28Behavioral+finance%5C%3A+Theories%29+and+%28allfield%3A%28Alistair%29%29>