

B8451: Pension, Sovereign and Institutional Investing
Spring Term 2017

Professors: Karl Mergenthaler, CFA and Michael Oliver Weinberg, CFA

Time: Full Term - Mon 5:45 – 9:00pm

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RECOMMENDED COURSE MATERIAL

1. Waring, M. Barton, Pension Finance, (November 2011)
2. Swenson, David, Pioneering Portfolio Management
3. Kochard, Lawrence and Rittreiser, Cathleen, Foundation & Endowment Investing
4. “Honeywell Corporation: An Introduction to Corporate Pension Plans” (Columbia Caseworks)
5. “Saving Public Pensions: Rhode Island Pension Reform” (Columbia Caseworks, 2013)
6. “Yale University Investments Office: August 2006” (HBS Case Study)
7. “A Total Enterprise Approach to Endowment Management” (University of Chicago, 2012)
8. Beer, Andrew and Weinberg, Michael Oliver, “The Performance Drag of Alternative Multi-manager Mutual Funds” (White Paper)
9. Additional Cases and White Papers – To Be Announced

RECOMMENDED PREREQUISITES AND CONNECTION TO THE CORE

Students are recommended to have taken or exempted from B6301 Corporate Finance, B6302 Capital Markets and Investments and B8323 Asset Management.

The learning in this course will utilize, build on and extend concepts covered in the Core Curriculum, as summarized in the following table:

Core Course	Connection with Core
Corporate Finance	<ol style="list-style-type: none"> 1. Time value of money 2. Opportunity cost of capital 3. Efficient markets 4. Risk 5. The Capital Asset Pricing Model (CAPM)
Decision Models	<ol style="list-style-type: none"> 1. Constrained optimization
Global Economic Environment	<ol style="list-style-type: none"> 1. Exchange rates 2. Fiscal policy 3. Monetary policy
Managerial Statistics	<ol style="list-style-type: none"> 1. Statistics data analysis 2. Linear regression

Students will be expected to have mastered these concepts and be able to apply them in the course.

COURSE DESCRIPTION AND OBJECTIVES

This course examines key issues and themes related to institutional portfolio management. The course seeks to go beyond Modern Portfolio Theory to analyze and discuss portfolio construction and management in practice. The course addresses the objectives and constraints of major asset owners, such as pension plans, sovereign wealth funds, insurance companies, and endowments & foundations. Moreover, the course delves into the critical role played by alternative assets within an institutional portfolio context.

Modern portfolio theory (MPT) attempts to maximize a portfolio's expected return for a given amount of portfolio risk, or minimize risk for a given level of expected return, by allocating across a diversified portfolio of assets. Broadly speaking, MPT involves a mean variance optimization process that incorporates the expected return, standard deviation, and correlation of various asset classes. Although MPT has been widely influential in the study and practice of investment management, recent experience has exposed many of its limitations.

This course will consider the ways in which theory is put into practice by major asset owners. The course will analyze the objectives and constraints of institutional investors, including:

- **Pension Plans.** U.S. corporate and public defined benefit pension plans account for an estimated \$5 trillion of investable assets. Corporate and public pensions must achieve acceptable returns, while simultaneously managing surplus volatility and interest rate risk. In the Defined Contribution space, innovations such as Target Date Funds have had a major impact on the investment of retirement assets. Globally, many countries are experimenting with different investing models, such as Superannuation schemes in Australia.

- **Sovereign Wealth Funds.** SWF's account for an estimated \$20 trillion of investable assets, including state owned development funds and foreign exchange reserves. These investors typically have long-term time horizons and strategic objectives that may be exclusively related to optimizing financial returns. Often, there are constraints on SWF ownership of foreign assets.
- **Insurance Companies.** The insurance industry manages assets of approximately \$7 trillion. Industry assets have historically been focused on yield oriented investments, such as fixed income and real estate. That said, there have always been exceptions, such as Warren Buffett's reinsurance business, and the burgeoning alternative driven reinsurance industry that is emulating his model.
- **Endowments & Foundations.** E&F's account for an estimated \$0.5 trillion of investable assets. They are required to distribute 5% per annum to maintain their favorable tax exempt status and therefore must earn at least this much plus inflation to maintain their size in real terms and avoid being liquidating trusts. Further, asset allocation must account for liquidity needs, i.e. funding operating budgets.

Within the context of these asset owners, this course examines issues related to investing in alternative assets. Given recent market volatility and the current low interest rate environment, pensions and endowments are likely to continue to invest in hedge funds and other alternatives assets in order to meet their long-term return objectives. Markets that have been in long term structural bear markets, such as Japan over the last two decades, are also strong candidates for alternatives. The course will focus on the investment process and benefits of applying alternative investments to traditional portfolios. The course will also address the role of hedge funds, private equity, real estate and real assets such as commodities and infrastructure within institutional portfolios. The course will delve into current topical investing issues, such as the impact and implications of Big Data, as well as Environmental, Social Governance (ESG)/ Socially Responsible Investing (SRI) investing strategies.

The three primary goals of this course are for students to:

- Understand the objectives, constraints and structural issues facing institutional asset owners, such as pension plans, sovereign wealth funds, insurance companies, endowments & foundations, and others;
- Appreciate the role of traditional and alternative assets within an overall portfolio context;
- Learn a robust manager selection, portfolio construction and investment process for alternative investments.

Students interested in pursuing careers in investing, either as asset managers or asset owners, should be interested in this course. Moreover, students looking to pursue careers in alternatives, traditional investing, fund of funds, consulting or alternatives research will benefit from this course.

COURSE FORMAT

The professors will provide extensive practitioner insights, as well as theoretical and empirical examples of the concepts covered. The course will be a combination of lectures, class participation, case studies and student projects. The professors will present and discuss the key concepts in lecture format. Students will be encouraged to ask questions and participate in class discussions to a significant extent. There will be reading assignments, including case studies, white papers and current research material, for most class sessions. Secondly, there will be four mid-term assignments in which students will write up executive summaries and discuss during class. Finally, there will be a final presentation in which students will present an investment recommendation to an asset owner (i.e. pension, sovereign wealth fund, etc.).

After the course sessions, for those students who have not yet secured internships or post-graduate roles, the professor will provide students with mentoring advice and introductions to successful industry leaders to help them secure these roles.

GUEST LECTURERS

The professors will invite 6-8 industry leading practitioners, including alternative portfolio managers and pension Chief Investment Officers, who will expound on the most topical issues in alternatives assets and institutional portfolio management. There are expected to be significant lecturers, and possibly a panel, at most of the class sessions. Prior guest lecturers have included Jon Pollock (Co-CIO and Co-CEO of Elliot), Kyle Bass (CIO of Hayman Capital), Scott Bessent (CIO of Soros Management), David Einhorn (Founder of Greenlight), Larry Schloss (former CIO of New York Common Retirement System), John Bader (CIO of Halcyon) and Carol McFate (CIO of Xerox Pension Fund), and a multitude of others.

ASSIGNMENTS

Case Studies

The students will be asked to prepare four case studies during the course. Students may work individually, or in a team, for the mid-term assignments. Students should prepare an executive summary (maximum of 2 pages) regarding an assigned case, or a current topic assigned in the course (examples below). The summary should include a specific recommendation, including supporting facts and rationale. The case studies will be used as the basis for class discussions in Sessions #3, #6, #8 and #10.

The cases utilized in the course will involve investment of institutional assets and /or specific alternative asset classes. The cases may include:

1. "Honeywell Corporation: An Introduction to Corporate Pension Plans" (Columbia Caseworks)
2. "Yale University Investments Office: August 2006" (HBS Case Study)
3. "Saving Public Pensions: Rhode Island Pension Reform" (Columbia Caseworks, 2013)
4. "A Total Enterprise Approach to Endowment Management" (University of Chicago, 2012)
5. "Hayman Capital Management" (HBS Case Study, 2012)
6. "Stanford Dumps Coal" (Columbia CaseWorks 2015)
7. TBD

Upon discussion and agreement with the professors, the cases may include current issues regarding institutional investment, such as the following:

1. **CALPERS:** In September of 2014, the California Public Employees’ Retirement System (CALPERS) announced that it will terminate its \$4 billion hedge fund portfolio. What was the rationale for CALPERS’ decision? Where should CALPERS re-allocate the cash upon liquidation? Was this a good decision? Discuss.
2. **State of Rhode Island.** In Rhode Island, the public pension plan was a significant source of debate during the 2014 gubernatorial elections. In addition to many structural changes, the state’s pension plan has a significant allocation to hedge funds and other alternatives. Discuss hedge funds in the context of public pension plan objectives and constraints. Should the Rhode Island public pension plan continue to invest in alternative assets?
3. **Japan’s GPIF.** In October, 2014, Japan’s \$1.2 trillion Government Pension Investment Fund said it plans to take more aggressive bets by slashing how much money it puts in domestic bonds and ramping up its investments in stocks. What are the risks with this change in strategy? Can alternative investments play a role in Japan’s pension? Discuss.

Final Case Study – Asset Allocation Recommendation:

Each team will present an investment recommendation to a specific asset owner, i.e. Pension Plan, Endowment & Foundation, Sovereign Wealth Fund or Insurance Company. The team should assume they are delivering the recommendation to a Chief Investment Officer or Investment Committee of the asset owner. The recommendation should consider all relevant factors for the asset owner. The asset owner will be agreed upon a priori with the professors.

The recommendation should involve a change in the overall asset allocation, as well as implementation or liquidation of a specific traditional or alternative strategy. The presentation should be at least 75% independent thoughtful quantitative and qualitative analysis.

Each team will submit electronically and present final case studies on the last day of the course.

<i>Type</i>	<i>Designation</i>	<i>Discussion of concepts</i>	<i>Preparation of submission</i>	<i>Grade</i>
A	group / group	Permitted with designated group	By the group	Same grade for each member of the group

CLASSROOM NORMS AND EXPECTATIONS

Class Meeting and Attendance:

Class attendance is mandatory and highly recommended in terms of achieving a top quartile grade. If a class is missed, fellow students should be consulted on what was accomplished during the class time, and handouts for that day's session should be collected (before or after). There may also be a video recording that can be watched.

We expect students to be current on financial market activity. Recommended recurring periodical reading includes The Wall Street Journal, the business section of the New York Times, The Financial Times, Pensions & Investments (online) and Barron's, among other periodicals.

Office Hours – The professors will be available during the break and before and after class (as late as needed). Office hours may be scheduled in advance if the aforementioned is insufficient.

METHOD OF EVALUATION

Student grades will be determined based on submission of the four case studies, final presentations, and class participation. The final grade will be determined as follows:

Factor	Impact on grade
Mid-Term Cases (4)	10% per Case
Final Presentations	30%
Class Attendance & Participation	30%

Class Schedule:

1. Introduction and Overview

Overview of investment objectives & constraints - Pensions, Sovereign Wealth Funds, Endowments & Foundations and Insurance Companies

Introduction to alternative assets- what is an alternative asset class?

Modern Portfolio Theory- Review and limitations

Suggested Reading: Waring, M. Barton, Pension Finance, (November 2011)

Suggested Reading: Swenson, David, Pioneering Portfolio Management

2. Pensions – Corporate and Public Plans

- Pension Plans: Investment Goals and Constraints
- Corporate DB Plans
 - a. Funding Levels: History and Trends
 - b. Asset Allocation: Liability Driven Investing
 - c. Pension Protection Act of 2006- constraints and impact
- Public DB Plans
 - a. Funding Level: History and Trends
 - b. Expected Rate of Return (Median 7.5% target)

Key Questions:

- How do the different goals and constraints of pension plans impact their asset allocation, especially as it relates to alternatives?
- What is an appropriate allocation to alternatives for corporate plans? Public plans?
- How do alternatives fit into an LDI framework for corporate plans?
- How do structural issues such as size, investment capability, and governance constraints impact an asset owner's ability to invest in alternative assets?

Reading: "Honeywell Corporation: An Introduction to Corporate Pension Plans" (Columbia Caseworks, 2013)

3. Pensions – Defined Contribution and Global

- Defined Contributions Plans
 - a. Overview of the 401K plan landscape
 - b. Role of alternative assets within DC Plans
 - c. Target Date Funds
- International Plans – Allocation and interest in alternatives
 - a. Australia Superannuation Funds
 - b. Latin America: Mexico, Brazil
 - c. Japan

Guest Speaker – CIO of major US or Canadian pension plans, i.e. Florida, North Carolina, BCCIM, etc.

Student Deliverable and Class Discussion: Case Study #1

4. Sovereign Wealth Funds and Insurance Companies.

Sovereign Wealth Funds

- Size, growth, and role of asset pools
- Investment considerations for sovereigns

Insurance Companies

- The insurance company model – underwriting, claims, premiums, float, investment and marketing
- Types of insurance companies and the implications on their investment portfolios
- Historic principal/agency conflicts in the public markets versus new companies addressing that
- Historic focus on yield, i.e. fixed income and real estate and the traditional investment model, versus the more diversified and capital gain oriented endowment model.
- The new generation of Warren Buffett inspired alternative oriented reinsurance companies

Key Questions:

- How does an insurance company financial model work? What is the importance of investing?
- How do the different types of insurance impact the investment portfolios?
- What innovative structures have been developed to obviate principal/agency conflicts?
- What are the potential advantages and disadvantages of an endowment model versus the traditional model?
- How has Warren Buffett inspired a new generation of more alternative oriented reinsurance companies?

5. Endowments & Foundations

- Portfolio Design – Traditional and evolving approaches
- Governance, regulatory requirements and implications on portfolio construction and liquidity budgeting
- Investment dynamics – The fiduciary role of the CIO, Board, Consultants, Investment Staff and Committee and their interaction
- Lessons learned from the Global Financial Crisis in 2008
- The role of alternative investments

Key Questions:

- Why do Endowments and Foundations have a different set of constraints and objectives to optimize versus other asset owners?
- Should pension plans and other institutions emulate the endowment model?

- How do the various constituencies determine investment approach? Does this result in an optimal investment process?
- What are the important lessons from the Global Financial Crisis in 2008?
- What is the role of alternative investments in an Endowment and Foundation portfolio?

Reading: “A Total Enterprise Approach to Endowment Management” (University of Chicago, 2012)

Suggested Reading: Kochard, Lawrence and Rittereiser, Cathleen, Foundation & Endowment Investing

Guest Speaker: Rosalie Wolf, Managing Partner of Botanica Capital and former Chief Investment Officer of Rockefeller Foundation

6. Hedge Funds #1

Overview, value proposition, manager selection and risk analysis

- Introduction
- Value of Hedge Funds in Institutional Portfolios Versus Traditional Active Managers
- Statistical Analysis of Performance Results and Risk Analysis
- Hedge Fund Manager Selection Requirements
- Manager Research Interview Process and Research Report
- Operational Due Diligence, Business and Investment Risk analysis

Key Questions:

- How do hedge funds generate alpha?
- How can hedge funds improve the risk / return profile of institutional portfolios?
- How does one analyze hedge fund returns and risk?
- How does one select hedge fund managers?
- How does one write a manager research report?
- What are the most important elements of Operational Due Diligence?

Reading: TBD

Guest Speaker – David Abrams, Founder and CIO of Abrams Capital, \$8Bn AUM Hedge Fund.

Student Deliverable and Class Discussion: Case Study #2

7. Hedge Funds #2

Life cycle, intermediaries, portfolio construction, benefits to international allocators and investment process

- Hedge Fund Life Cycle, Balance of Power and Fund Structures
- The Intermediary Alternatives
- Portfolio Construction
- Case Study – The Impact of Dispersion, Correlation and Volatility on Fundamental Long/Short Managers

- Benefits of Adding Hedge Funds to International Pension Portfolios
- Investment Process for Pension Plans
- Summary

Key Questions:

- What is the hedge fund life cycle like?
- How has the balance of power shifted in the hedge fund industry?
- What are the intermediary alternatives, and their advantages/disadvantages?
- How does one construct a liquid alternative portfolio?
- How do variables such as Dispersion, Correlation and Volatility impact manager returns?
- What are the benefits of adding hedge funds to international portfolios?
- What is the investment process for pension plans?

Reading: TBD

Guest Speaker – John Levin, Founder and CIO of Levin Capital Strategies, \$8Bn AUM Hedge Fund

8. Current Investing Issues - Big Data, Quantitative, Systematic and Machine Learning/Artificial Intelligence

- The quadrant model of data
- The democratization of processing power, data storage and analysis
- Traditional structured financial data based quantitative and systematic investing
- Next generation machine learning/artificial intelligence investing
- The impact of the aforementioned on discretionary macro and fundamental funds
- Overview of traditional quantitative strategies and ML/AI strategies

Key Questions:

- What types of data are there and how are they applied to investing?
- How has technology and Moores Law impacted the barriers to entry in quantitative investing?
- How does quantitative investing impact discretionary investors?
- How does ML/AI differ from or improve upon traditional quantitative investing?

Reading: TBD

Guest Speaker – CIO or scientist from relevant fund (i.e. Two Sigma, Renaissance or other)

Student Deliverable and Class Discussion: Case Study #3

9. Private Equity

- Private Equity
 - a. Role in institutional portfolios
 - b. Investment considerations: Manager selection and due diligence
 - c. Return history and outlook

- Convergence of private equity and hedge funds

Key Questions:

- What are the advantages and disadvantages of private equity with the context of institutional portfolios?
- What are the key factors in selecting and allocating assets to private equity?
- Going forward, will private equity provide an adequate return premium to justify the illiquidity of the asset class?

Reading: TBD

Guest Speaker – Private Equity CIO or other major investor

10. Real Assets and Infrastructure

Real Assets

- Real Estate - Public vs. Private
 - a. Role of real estate in institutional portfolios
 - b. Types- Core, Value Added, Opportunistic
- Infrastructure
 - a. Role of infrastructure in portfolios- example of Canadian pensions
 - b. Challenges in allocating capital to the asset class
- Real Assets: Timber, Commodities, etc.

Key Questions:

- What are the advantages and disadvantages of real estate (public vs. private) and other real assets?
- How does the illiquidity of most real assets (non-commodity and public real estate) impact portfolio construction and returns?
- What other benefits- such as inflation hedging, dollar hedging, etc. – should institutional investors consider in investing in Real Assets?
- What are the challenges in allocating capital to infrastructure for U.S. investors?

Reading: “The Realization: A New World, A New Normal, A Tectonic Shift” (J.P. Morgan, 2012)

Student Deliverable and Class Discussion: Case Study #4

11. Current Investing Issues - Environmental, Social Governance (ESG) and Socially Responsible Investing (SRI)

- The evolution of Environmental, Social Governance Investing
- Milton Friedman vs. James Coleman and their contrasting views on ESG
- Michael Barnett’s complementary view on ESG
- Socially responsible investing defined
- Fossil Fuels, Firearms, Weapons, Fast Food, Alcohol, Tobacco, Pornography and Gambling

Key Questions:

- What do the academic studies conclude on ESG and SRI investing?
- How do the three aforementioned views contrast and in one case complement each other?
- How has George Soros, one of the world's greatest investors and philanthropists, handled this?
- How does SRI impact asset owner and allocator portfolio construction and asset allocation?
- How have endowments and foundations responded to stake-holder ESG and SRI requests?
- How do SRI returns compare to non-SRI returns?

Reading: "Stanford Dumps Coal" (Columbia CaseWorks 2015)

Guest Speaker – CIO of Billion dollar plus family office that is built upon ESG principles.

12. Final Review and Presentations

Review and Summary of Key Concepts

- Summary and Review
- Key principles and practices
- Areas for more thorough exploration

Student Deliverable: Final Case Study & Presentation

Professor – Michael Oliver Weinberg, CFA, Adjunct Associate Professor



For more than two decades Michael has invested directly at the security level and indirectly as an asset allocator in traditional and alternative asset classes.

He is the Chief Investment Strategist at Protege Partners, where he is a Senior Managing Director, and on the investment, risk and management committees. Michael is also an adjunct Associate Professor of Economics and Finance at Columbia Business School, where he teaches Institutional Investing: Alternatives in Pension Plans, an advanced MBA course that he created.

He spent nine years at FRM, a multi-strategy hedge fund solutions provider where he was a portfolio manager and headed the global equity business. Prior to that, Michael was a portfolio manager at Soros, the macro fund and family office, and at Credit Suisse First Boston. Before that he was a Real Estate analyst at Dean Witter.

Michael is a board member of AIMA and on its Research Committee. He is on the management advisory council for the Michael Price Student Investment Fund and an advisory board member for the NYU Stern Investment Management and Research Society. Michael is also on the advisory boards of The Woodlake Group, PeerIQ and YJP, a young professional organization. He is a member of The Economic Club of New York and the NYU Family Office Council. Michael is Chair of the Value Investing Committee at NYSSA and a volunteer at the Columbia Business School Hermes Society.

Michael is a published author, having written articles for The New York Times, Institutional Investor, CFA Institute and CAIA. He has been interviewed by the Wall Street Journal, Financial Times, CNBC, Bloomberg and Reuters. Michael is a frequent panelist, moderator and lecturer for investment banks, institutional and family office organizations and business schools including Institutional Investor, Pensions & Investments, SALT, Harvard and The London School of Economics. He has a BS from New York University, an MBA from Columbia Business School and is a CFA.

Professor – Karl Mergenthaler, CFA, Adjunct Associate Professor



Karl Mergenthaler, CFA is an Executive Director in the J.P. Morgan Investment Information Services Group. His principal responsibility is to provide analytical and consulting services to pension funds and other institutional investors.

Karl has more than 18 years of experience in the financial services industry. Prior to joining J.P. Morgan in 2007, Karl was an equity analyst and portfolio manager at Avatar Associates, where he was actively involved in the management of portfolios of Exchange Traded Funds (ETFs). Previously, Karl was an equity analyst at Banc of America Securities responsible for the machinery industry.

Karl has published numerous articles including “Commodities – Where do They Fit?” (J.P. Morgan’s Thought Magazine, Spring 2010), “Active Currency Management for Institutional Investors” (P&I Online, 2010), “How Quants Stack Up against Fundamentals” (Pensions & Investments, January 7, 2008) and “An ETF Solution for 401 (k) Plans” (Plan Sponsor, October 2006). Karl has been quoted by numerous publications including Bloomberg, Fundfire, Financial Post, and others.

Karl is an Adjunct Associate Professor at Columbia Business School. Karl is a Chartered Financial Analyst (CFA), Chartered Alternative Investment Analyst (CAIA) and a member of the New York Society of Security Analysts (NYSSA). Karl earned a B.A. degree in economics from Wesleyan University (1992) and an M.B.A. in finance from Columbia Business School (1998).

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