Investment Course IV

September, 2009

Outline Course Topics

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Outline of Course Topics

Topic One – Expected Returns & Measuring the Risk Premium

- **Two Important Concepts in Investment Management**
  - Investor Role & Compensation, Expected Return Components
- **Measuring Expected Returns & Return Components**
  - Definitions and Concepts & Historical Evidence
- **The Equity Risk Premium: U.S. Experience**
- **Methods for Measuring Equity Risk Premiums:**
  - Historical Estimates
    - Ibbotson Associates, Fidelity Investments/Global Financial Markets
  - Fundamental Estimates
    - Fundamental Approach to Risk Premium Estimation
    - Examples: Fama-French, Claus-Thomas, Arnott-Bernstein
  - Economic Estimates
    - Economic Approach to Risk Premium Estimation: Black-Litterman, Ennis Knupp Associates
  - Survey Estimates
    - Examples: CFO surveys, Ennis-Knupp Associates managers, UTIMCO consultants, TRS

Topic Two – Asset Allocation: Decisions & Strategies

- **The Asset Allocation Decision: Overview**
- **Examples of Strategic Allocation Policies:**
  - Global Capital Markets, UTIMCO, Texas Teacher Retirement System
- **Return Decomposition and the Importance of the Asset Allocation Decision**
  - Time-Series vs. Cross-Sectional Effects
- **Asset Allocation & Building Investment Portfolios**
  - Sharpe's Integrated Asset Allocation Model: Strategic, Tactical, Insured
- **Measuring Gains from Tactical Asset Allocation**
  - Examples: Fidelity Investments, Teacher Retirement, UTIMCO, MBA Investment Fund

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Outline of Course Topics (cont.)

- **Topic Three – Portfolio Risk Analysis**
  - **Tracking Error: Concept & Examples**
    - Passive & Active Mutual Funds, AFPs
  - **Risk & Expected Return Within a Portfolio**
    - Multi-Asset Class Examples
    - Diversification & Portfolio Size
  - **Advanced Risk Analytics**
    - Total Portfolio Risk vs. Marginal Asset Risk Within a Portfolio
    - Marginal Contribution to Risk
    - Risk Decomposition Relative to a Benchmark
    - Portfolio Risk-Tracking Example: Chile Pension Sistema
  - **Measuring Portfolio Downside Risk**
    - Semi-Variance vs. Lower-Partial Moments: Examples
    - Value at Risk (VaR): Examples

Outline of Course Topics (cont.)

- **Topic Four - Fixed Income Analysis and Portfolio Strategies**

- Fundamentals of Fixed-Income Security Valuation

- General Valuation Formula
- Interpreting Yield to Maturity
- Par, Premium, and Discount Bonds
- Pricing Between Coupon Dates

- Bond Pricing Theorems

- Direction, Magnitude, and Convexity Effects
- Predicting Interest Rate Volatility

- Bond Duration

- Graphical Overview
- Macaulay and Modified Duration
- Duration of a Bond Portfolio

- Duration as a Measure of Price Volatility

- Elasticity-based Equation
- Basis Point Value (BPV)

- Notion of Bond Convexity

- Improving Volatility Predictions
- Convexity and Embedded Options
- Callable vs. Putable Bonds

- Overview of Bond Portfolio Strategies

- Passive & Indexing
- Dedicated: Cash vs. Duration Matching
  Active: Interest Rate Anticipation, Credit, Valuation
- Contingent & Derivative-based

- Overview Global Fixed Income Investment Process Fund Management

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Outline of Course Topics (cont.)

Topic Five – Portfolio Optimization: Analytical Techniques

- **Overview of the Portfolio Optimization Process**
  - Developing the Efficient Frontier: Notion & Analytical Solution
- **Mean-Variance Portfolio Optimization**
  - Unconstrained & Constrained Optimization
    - Measuring the Cost of Constraint
  - Examples: Black-Litterman Forecasts, CLP & USD Pension Investing
  - Portfolio Risk & How Much to Invest in Foreign Assets?
- **Mean-Downside Risk Optimization**
  - Adjusting Threshold Risk Levels & Power Coefficient
  - Example of Unconstrained & Constrained Optimization : CLP & USD Portfolio
- **Alpha-Tracking Error Optimization**
  - Notion of Relative Optimization Problem
  - Benchmark vs. Peer Group Comparison
  - Example of Unconstrained & Constrained Optimization: CLP & USD Portfolio

Topic Six – Portfolio Optimization: Case Studies

- **U.S. Public Pension Fund: Texas Teachers' Retirement System**
  - Background & Investment Problem
  - Initial Allocation & Overview of Mean-Variance Optimization Process
  - Simulation-Based Forecasted Process: How Much Equity in Portfolio?
  - Optimization Outcome: Strategic Asset Allocation
- **Private Pension System: Chilean AFPs**
  - Background & Investment Problem
  - Base Case Economic Assumption
  - Adjusted Mean-Variance Analysis: Notion of Resampled Efficient Frontier
  - Strategic Asset Allocations: Unconstrained & Constrained Portfolios
- **U.S. Public Endowment Fund: University of Texas System**
  - Background & Investment Problem
  - Initial Allocation & Overview of Mean-Downside Risk Optimization Process
  - Economic Assumptions & Notion of Potential Value-Added (PVA)
  - Decision Factors: Selecting From a Set of Optimal Candidate Portfolios

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Outline of Course Topics (cont.)

- **Topic Seven – Identifying Superior Active Portfolio Management**
  - **Defining Superior Active Management**
    - The wrong question
    - The problem with benchmarks and peers
  - **Lessons from Prior Research**
  - **Empirical Methodology**
    - Data & Fama-French model
  - **Results**
    - Distribution of alphas
    - Time series and cross-sectional regressions
  - **Economic Significance**
    - Portfolio strategies
    - Logit models
  - **Investment Example**

- **Topic Eight – Market Efficiency & Behavioral Finance: A Brief Overview**
  - **Concept of an Efficient Capital Market**
    - Weak, Semi-Strong, Strong Form Efficiency
    - Summary of Empirical Evidence
  - **Overview of Psychology and Financial Markets**
    - Efficient vs. Inefficient Markets
  - **Notion of Behavioral Finance**
    - Heuristic Biases: overconfidence, representativeness
    - Frame Dependence
    - Inefficient Markets
  - **Examples of Behavioral "Anomalies"**
    - Market Overreaction vs. Underreaction
    - Disposition to Avoid Losses
    - Mutual Fund Performance and Compensation

Outline of Course Topics (cont.)

- **Topic Nine – Evaluation of Portfolio Performance**
  - **The Two Questions of Performance Measurement**
    - How did the Manager Perform?
    - Why did the Manager Perform the Way He or She Did?
  - **Simple Performance Measurement**
    - Boxplots of Peer Group Universes
    - Examples: Texas TRS, UTIMCO, MBA Investment Fund Growth Portfolio
  - **Traditional Risk-Adjusted (Composite) Performance Measure**
    - Sharpe & Treynor Ratios
    - Jensen's Alpha: One-factor, Three-factor, Four-factor
    - Information & Sortino Ratios
  - **Holdings-Based Portfolio Performance Measures**
    - Intuition & Methodology
    - Grinblatt-Titman (GT) Measure
  - **Attribution Analysis**
    - Measuring Selection and Allocation Effects
    - Illustrating the Concept
    - Practical Applications: UTIMCO & MBA Investment Fund

Biographical Sketch of the Instructor


Keith Christopher Brown currently holds the positions of University Distinguished Teaching Professor and Fayez Sarofim Fellow in the Department of Finance at the McCombs School of Business, University of Texas at Austin. He received his M.S. and Ph.D. in Financial Economics from the Krannert Graduate School of Management at Purdue University. Since leaving school in 1981, he has specialized in teaching Investment Management, Portfolio Management and Security Analysis, Capital Markets, and Derivatives courses at the BBA and MBA levels and has received eighteen awards for teaching innovation and excellence. In 2006, he was elected to the University's prestigious Academy of Distinguished Teachers. Keith's publications have appeared in such journals as *Journal of Finance, Journal of Financial Economics, Review of Financial Studies, Journal of Financial and Quantitative Analysis, Review of Economics and Statistics, Financial Management, Financial Analysts Journal, Journal of Portfolio Management, Journal of Investment Management, Journal of Fixed Income, Journal of Applied Corporate Finance,* and *Advances in Futures and Options Research*. He received a Graham and Dodd Award from the Financial Analysts Federation as a co-author of one of the best articles published by *Financial Analysts Journal* in 1990 and a Smith-Breeden Prize from the *Journal of Finance* in 1996. Keith is also a co-author of two textbooks, *Interest Rate and Currency Swaps: A Tutorial* (with Donald J. Smith) and *Investment Analysis and Portfolio Management, 9e* (with Frank K. Reilly).

Keith is the co-founder and Senior Partner of Fulcrum Financial Group, a portfolio management, business valuation, and investment advisory firm located in Austin, Texas and Las Vegas, Nevada. For eleven years, he served as President and Chief Executive Officer of The MBA Investment Fund, LLC, a private capital appreciation fund managed by students at the University of Texas and also was the Director of the Department's Hicks, Muse, Tate & Furst Center for Private Equity Finance. From May 1987 to August 1988 Keith was based in New York as a Senior Consultant to the Corporate Professional Development Department at Manufacturers Hanover Trust Company. He has also lectured extensively in the global Executive Development programs for companies such as Fidelity Investments, JP Morgan Chase Bank, Merrill Lynch, Lehman Brothers, Chase Securities, Union Bank of Switzerland, Chemical Bank, Chase Bank of Texas, USAA Investment Management, Security Commission of Malaysia, The Beacon Group, Motorola, Halliburton, Association for Investment Management and Research, and spent thirteen months as a senior planner with a San Diego, California-based financial planning firm. In August of 1988, Keith received his charter from the Institute of Chartered Financial Analysts. He currently serves as an advisor to the Board of Trustees of Teacher Retirement System of Texas and the Board of Directors of UTIMCO and as Associate Editor for *Journal of Investment Management* and *Journal of Behavioral Finance*. For five years he held the position of Research Director for the Research Foundation of the CFA Institute.

Access to Course Materials and Instructors

ACCESS TO COURSE MATERIALS AND INSTRUCTOR

- You can download electronic copies of many of the course materials (e.g., course outline, course notes, Excel spreadsheets from the following websites:

  www.mccombs.utexas.edu/faculty/keith.brown/AFPcourse3.htm

- You can contact Keith Brown by e-mail at the following address: **kcbrown@mail.utexas.edu**