

FE 523 –Investment Analysis and Portfolio Theory

Fall 2014

Course Overview

Instructor

Cenk C. KARAHAN

Class Meeting Time

Wednesdays 7-10pm

Classroom

VYKM 4

Email

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Office Location

IB 305

Office Hours

By appointment only

An introduction to quantitative investment analysis and portfolio management. The course will review various assets classes (equity, fixed income, derivatives) and their use for optimal portfolio and risk management purposes. The topics will include conventional approaches such as risk, return, market equilibrium, efficiency, CAPM, factor models as well as more recent developments in behavioral finance. Applications of the portfolio management concepts will include individual quantitative assignments and case studies.

Reading and Textbook

The Wall Street Journal, Financial Times, The Economist etc.

Select articles that will be assigned as the semester progresses.

Recommended: Quantitative Equity Portfolio Management, *Qian, Hua, Sorensen*

Recommended: The Econometrics of Financial Markets, *Campbell, Lo, MacKinlay*

Recommended: Investments (9th edition - Global), *Bodie, Cane, Marcus*

Grading

- Homework (30%) – Assignments to test the theory and empirical evidence relevant for investing through quantitative analysis.
- Case Studies (30%) – Individually written analyses of 2-3 case studies and contribution to in-class discussions.
- Final (40%) – In-class final exam per university mandated schedule.
- **Attendance** is mandatory. Missing more than 3 classes with or without excuse will result in a failing grade.
- A working knowledge of **Excel and MATLAB or R** programming assumed for quantitative assignments. You need a calculator for general in-class use and the exam.

Course Contents

Below is a tentative outline of the topics that will be covered throughout the semester.

• Introduction (1 week)

An introduction to financial markets, different asset classes and financial instruments. A brief look at various institutional investors (mutual funds, hedge funds, pension funds) and their investment strategies.

• Statistical Properties of Returns and Mathematical Review (1 week)

Mathematical tools, probability concepts, regression, OLS, MLE etc.

• Portfolio Theory and Practice (2 weeks)

The concepts of risk aversion and risk-return tradeoff. Empirical analysis of historical data. Utility maximization, diversification, optimal allocation of funds.

• Equilibrium Models in Capital Markets (2 weeks)

Efficient frontier, Capital Asset Pricing Model (CAPM), Fama-French (FF) and other multifactor models. Empirical tests of these asset pricing models.

• Market (In)Efficiency and Behavioral Finance (2 weeks)

Concept of market efficiency and testing of this hypothesis. Technical and fundamental analysis. Anomalies and behavioral approach to asset pricing.

• Fixed Income Securities and Investments (2 weeks)

Introduction to bonds, interest rates and their derivatives. Use of fixed income securities in portfolios. Concepts of risk (duration, convexity) and its management.

• Options, Futures and Other Derivatives (2 weeks)

Review of basic derivative securities and their practical use in investment, speculation and hedging. The Greeks, implied volatility and volatility smiles.
