

Management 239c  
Empirical Methods in Finance  
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Winter 2009

**Class Description** This PhD-level class aims to provide advanced graduate students in the areas of finance, accounting and economics with the quantitative tools necessary for cutting edge empirical research in finance with an emphasis on asset pricing, given my own interests. The class also introduces students to recent developments in empirical asset pricing. Since good empirical work requires some theory, we will start by reviewing some theory and then applying it. The course is geared towards getting you to apply the methods we discuss in class. The class is open to MBA students with a strong quantitative background.

**Course Requirements** This class relies heavily on standard concepts from probability theory and real analysis. The numerical work for this class will be done in Matlab. Prior experience working with Matlab is not required, but willingness to learn Matlab is.

**Course Text** *Asset Pricing*, Revised edition, by John Cochrane (2004), Princeton University Press.

**Other references** *Empirical Dynamic Asset Pricing*, by Kenneth J. Singleton, Princeton University Press.

*The Econometrics of Financial Markets*, by John Y. Campbell, Andrew W. Lo and A. Craig MacKinlay, Princeton University Press

**Grading Policy** Final grades will be based 30% on the final exam and 30% on class participation and presentations. To give each of these components equal weight, the class scores on each test will be converted to a standard normal scale before they are averaged. The remaining 40% will be assigned on the basis of 5 graded problem sets. The final exam is a take-home exam.

**Approach** This class uses the stochastic discount factor methodology to approach all asset pricing questions in a unified framework. We use the consumption-CAPM as an application. In the

first part of the class, we go over the details of this methodology. In the second part of the class, we apply this framework.

### Detailed Course Outline

- **Week 1:** Introduction to Consumption-based Asset Pricing Model.  
Chapters 1-3 in *Cochrane*.
- **Week 2:** Contingent Claims Analysis and Stochastic Discount Factors  
Chapters 4-6 in *Cochrane*.
- **Week 3:** CAPM-ICAPM  
Chapters 8-9 in *Cochrane*.
- **Week 4:** GMM Estimation  
Chapters 10-11 in *Cochrane*.
- **Week 5:** Estimation of Linear Models  
Chapters 12-13 in *Cochrane*.
- **Week 6:** Introduction to Time Series Analysis  
Chapters xxx in *Hamilton*.
- **Week 7:** Time Series Predictability  
Chapters 8 and 20 in *Cochrane*.
- **Week 8:** Affine Bond Pricing Models  
Chapter 19 in *Cochrane*.
- **Week 9:** The Term Premium in Bond Markets and the Forward Premium in Currency Markets.  
Chapter 20 in *Cochrane*.
- **Week 10:** Recent Advances in Asset Pricing.