Introduction to Empirical Methods in Finance

This course is an introduction to empirical finance with a focus on selected topics and econometric methods. The course will cover time-series and cross-sectional properties of asset returns, some aspects of market microstructure, event studies, empirical tests of asset pricing models and other topics time permitting. The interplay between asset pricing theories, statistical assumptions and relevant econometric techniques is explored in the context of published empirical work, including classical papers as well as current research.

Prerequisites: Finance 911; Economics 705
Co-requisites: Economics 706

Course Material

- A list of assigned and suggested readings for each topic is given below.

Course Evaluation

The course grade is based on a midterm exam (30%), final exam (40%), assigned homeworks and class participation (30%). You may discuss and work on the problem sets in groups, but each student should hand in their own assignment.

I expect you to read the assigned material before the class and participate in class discussions.

Office Hours

Thursday, 4:30 – 5:30pm
Course Outline with the Required(*) and Supplemental Readings

1. Return Moments and Temporal Dependence: distributional assumptions and sample moments of asset returns; notions of market efficiency; random walk tests; mean reversion and long-run predictability; time-averaging effects

Readings:

(*) CLM (1997), Chapters 1 & 2 (except for 2.6).


2. Asset Pricing Overview: pricing equation; stochastic discount factor; risk and risk premia; mean-variance frontier; expected return–beta representation; consumption-based CAPM; equity premium puzzle

Readings:

(*) Cochrane (2005), Chapters 1 & 2, 8.1–8.2


3. CAPM – Time-Series and Cross-Sectional Tests: Gibbons-Ross-Shanken statistic; Fama-MacBeth procedure; portfolio approach to the tests; size and value premia; conditional v.s. unconditional tests
Readings:

(*) CLM (1997), Chapter 5

(*) Cochrane (2005), Chapters 9.1, 8.3(pp.136-140, 143), 8.4, 12.3


4. GMM: general framework and asymptotics; estimation of the spectral density matrix; application to discount factor models; GMM v.s. MLE

Readings:

(*) Cochrane (2005), Chapters 10 & 11, 14.1–14.2


5. Arbitrage and Multifactor Asset Pricing Models: estimation and testing of linear factor models; factor analysis and principal components; estimation of non-linear discount factor models; conditional tests

Readings:

(*) CLM (1997), Chapter 6

(*) Cochrane (2005), Chapters 9.4, 12–16
6. Over-reaction, Risk v.s. Misspricing, Data-Snooping Biases:

Readings:


7. Present-Value Relations and Time-Series Predictability: present-value relation and its testable implications, volatility tests, predictability regressions and finite-sample inference, VAR approach

Readings:

(*) CLM (1997), Chapter 7


8. Econometrics of Event Studies: measuring abnormal performance; size and power of event study tests; long-horizon event studies; event-time v.s. calendar-time approach; event endogeneity and cross-sectional tests

Readings:

(*) CLM (1997), Chapter 4


9. Market Microstructure: non-synchronous trading; bid-ask spread; price discovery

Readings:

(*) CLM (1997), Chapters 3.1-3.2, 3.4


10. Endogeneity and Identification issues