ECON 485: Financial Econometrics, Spring 2016
Department of Economics, Emory University

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Class Location: Rich Building 104
Class Time: TuTh 5:00pm – 6:15pm

Readings:

1. Lecture notes


Grading: Assignments: 20%; Midterm Exam: 30%; Final Exam: 50%.

Course Description
This course covers a range of topics in financial and time series econometrics. It provides an introduction to the properties of financial asset returns, stationary and nonstationary time series models, conditional variance models and a review of estimation and inference methods in econometrics. It also discusses a number of applications that include predictive and forward premium regressions, yield curve modeling, estimation of term structure models of interest rates, analysis of commodity price dynamics, value-at-risk, asset pricing models etc. The course requires a prior background in probability theory and econometrics. The homework assignments will contain both analytical and applied problems. The empirical part of the assignments will expose the students to various financial applications of the econometric techniques discussed in class as well as replication of empirical results in some recent journal articles.

Topics

1. Definitions and Properties of Financial Asset Returns

2. Review of Estimation Methods I: OLS and MLE

3. Univariate and Multivariate Stationary Time Series
   (a) Autoregressive (AR), Moving Average (MA) and ARMA Models
   (b) Vector Autoregressive (VAR) Processes
   (c) Estimation, Inference, and Forecasting
4. Nonstationary Time Series
   (a) Unit Roots
   (b) Spurious Regressions and Cointegration

5. Conditionally Heteroskedastic Models
   (a) Measuring and Modeling Conditional Variance of Returns
   (b) GARCH Models
   (c) Conditional Covariance and Correlation

6. Applications
   (a) Predictive Regressions for Stock Returns
   (b) Forward Premium Regressions for Exchange Rates
   (c) Term Structure Models of Interest Rates
   (d) Modeling the Dynamics of Commodity Prices
   (e) Value-at-Risk

7. Review of Estimation Methods II: Linear Instrumental Variables and GMM

8. Asset Pricing
   (a) Factor Pricing Models
   (b) Beta Representation and Discount Factor Form
   (c) Equity Premium Puzzle
   (d) Estimation

9. Additional Topics (if time permits):
   (a) Diffusion Processes and Ito’s Lemma
   (b) Derivative Pricing