

FEC 522: Financial Econometrics II

Spring 2013

This course focuses on dynamic economic phenomena. Stochastic models for time series with different features are discussed. Real-world applications of the models, using state-of-the-art free and open-source software, play an important role in this course. A good knowledge in statistics is desirable.

Contents:

1. Introduction
The scope of this course; literature; software.
2. Analyzing Price Changes: Some Aspects
Review of descriptive and inductive statistics; practical analysis of return distribution properties: volatility, skewness, kurtosis etc.
3. Multiple Regression and Extensions
3d scatterplots; multiple regression and its interpretation; logistic regression; Poisson regression.
4. ARMA Processes: a review
ARMA processes as conditional expectation models; simulation; model identification etc.
5. VAR Models and their applications
Structural and standard forms; identification; “connectedness”; examples
6. Univariate GARCH Processes
GARCH processes as conditional variance models; simulation; model identification; news impact etc.
7. Multivariate GARCH Processes
Simulation; model identification symmetric and asymmetric news impact; example: crude oil and the stock market.

Grading:

Term project:	50%
Final Exam:	50%

Literature:

- ENDERS, W.: *Applied Econometric Time Series*, 3rd edition. Wiley, 2009.
- KLEIBER, C., & ZEILEIS, A.: *Applied Econometrics with R*. Springer, 2008.
- MILLS, T.C. & MARKELLOS, R.: *The Econometric Modelling of Financial Time Series*, 3rd edition. Cambridge University Press, 2008.
- TSAY, R. S.: *Analysis of Financial Time Series*, 2nd edition. Wiley, 2005.
- VENABLES, W.N. & RIPLEY, B.D.: *Modern Applied Statistics with S*, 4th edition. Springer, 2003.
- Further references will be given in the lectures.