Harald Schmidbauer İstanbul Bilgi Üniversitesi

FEC 522: Financial Econometrics II

Spring 2012

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. Cointegration and Error Correction Models
   Modeling and testing for cointegration; 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.