

OUTLINE: FINANCIAL ECONOMETRICS

This course provides an introduction to the econometrics used in empirical Finance.

1. Financial Assets

Basic financial assets: zero-coupon bond, currency, credit default swap, stock

Markets: over-the-counter, primary and secondary markets, spot vs futures
2. Stylized Facts on the Historical Distributions of Interest Rates, Stock Returns and Exchange Rates

Definition and estimation of the distribution, Q-Q plot

Historical Moments and Historical Value-at-Risk

Analysis of default

3. Linear Dynamic Analysis of an Asset Return

Notions of white noises

How to detect serial dependence

Autoregressive and ARMA processes

The effect of sampling frequency

Unit root models and the efficient market hypothesis

4. ARCH Models

The ARCH(1) model and its extensions

Estimation: pseudo-maximum likelihood and two-step least squares

Volatility persistence

The limitations of ARCH modelling

5. Joint Analysis of Returns

Description of a multivariate distribution

Mean-variance efficient portfolio

Multivariate regression model and portfolio management

Vector autoregressive model

6. Complements

depending on the year, complements will be given on either multivariate factor models, or on high frequency data

References:

Ruppert, D. (2004): "Statistics and Finance", Springer

Gourieroux, C., and J. Jasiak (2001): "Financial Econometrics", Princeton Univ. Press

Campbell, J., Lo, A., and C. McKinlay (1997): "The Econometrics of Financial Markets", Princeton Univ. Press