Time Series Methods in Financial Econometrics[1]

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[1]The course material is mostly based on lectures held by P. Gagliardini and F. Trojani at HSG in the period 2005-2008.

Outline of the course

1. GMM estimation in time series
   - LLN and CLT for weakly dependent data
   - Large sample properties of the GMM estimator
   - Spectral estimators of the GMM variance-covariance matrix
   - GMM overidentification test
2. GMM estimation of asset pricing models
   - Rational expectations and no-arbitrage pricing models
   - Weak identification and lack of identification in asset pricing models
   - Information-theoretic GMM

Outline of the course

3. Nonparametric estimation in time series
   - Kernel density and regression estimators
   - Bias-variance trade-off and bandwidth selection
   - Asymptotic properties of kernel estimators
4. Nonparametric methods for derivative pricing
   - Nonparametric calibration of the risk-neutral distribution
   - Canonical valuation, maximum entropy and implied binomial trees
   - Efficient derivative pricing by XMM

Bibliography

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Pagan, A. and A. Ullah (1999): *Nonparametric Econometrics*, Cambridge University Press

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