

Seminar

Forecasting with Time Series Models

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Aims and scope

The aim of the seminar is

... to make you acquainted with model-based time series forecasting, covering the theoretical foundation of various forecasting models, starting with the classical ARMA models and ending with dynamic factor models for dealing e.g. with many predictors.

You will

- acquire time series techniques from the literature,
- apply time series techniques to an empirical question,
- relate their findings to the literature,
- (use suitable software),
- present scientific results to an academic audience, and
- critically discuss the results of others.

Aims and scope cont'd

Intended audience

- Master Econometrics, Master Data Science, Master Statistics.

Prerequisites

- Decision Theory;
- Time Series Analysis!

Structure

- In a first meeting, each participant is allocated one particular topic; some introductory literature will be provided – as a start for you to build on.
- During the winter term, each participant writes a seminar paper (ca. 20 pages) that tackles the chosen topic.
- The paper could have either a technical focus or an applied one, but both aspects need to be present to some extent
- The minimal expectation is to replicate an existing paper and improve it in some respect (e.g. relax some assumptions or expand scope of the application)
- In a block seminar, each paper is presented *and* discussed.

Milestones

- October xxth, 2024: in-person meeting, QnA and allocation of topics (see LSF for exact date and time).
- January 12th 2025: Deadline for electronic submission of the paper (pdf format) and the **R** codes.
- Presentation of the final results: TBA (Jan/Feb 2025)
- Check the moodle course for updates etc.

Topics

- Review: Linear models (ARMA)
- Forecasting integrated processes
- Selected nonlinear models, e.g.
 - Threshold models
 - GARCH models
- Dynamic factor models
- Data with structural breaks

Further details

Contact

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Office hours

- by appointment; but before resorting to such desperate measures do not hesitate to ask simpler questions per email.

Registration

- It is mandatory to take part in the Department's survey. It is the only way to register.

Q & A

Any specific questions?