Seminar in Econometrics WS 2019/20

„Forecasting in a data-rich environment"

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Aim of the seminar

The aim of the seminar is to make you acquainted with techniques allowing you to deal with the situation in which the number of available predictors in a time series forecasting problem is comparable to, or larger than, the number of observations such that the usual OLS estimator of the predictive regression is highly unstable, or even infeasible, and the resulting forecasts highly imprecise. These techniques involve, e.g., variable selection or shrinkage methods.

Outline

In a first meeting, each participant is allocated one particular forecasting method such as factor models, LASSO, elastic net, boosting, and – for those who have already finished Econometrics III – Bayesian methods. In addition, we post a data set and the details of the forecast experiment in OLAT.

During the summer break, each participant writes a seminar paper (ca. 20 pages) that describes the forecasting method and applies it to the data set using a pseudo out-of-sample forecast experiment. The paper has to be submitted electronically and as a hard copy. The electronic submission has to include all files (scripts, functions, data files etc. except for built-in functions and public R packages) that are used to generate the results described in the paper together with a "readme.txt" file that explains which scripts need to be executed. To this end, make sure you program in a way that allows changing paths easily. The software to be used is R or Matlab unless otherwise agreed.

In a block seminar, each paper is presented and discussed. Since all use the same data set and forecast experiment, we can even compare the forecast quality of the individual methods in a kind of horse race. (The performance of each method does not matter for the final grade, provided that the methods are well-implemented and understood.)

Educational objectives

The participants will learn to

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

Important dates

Wednesday, July 3, 9:00 am:	First meeting: Introduction and allocation of topics. Room: TBA
Sunday, October 13, 12:00 pm:	Deadline for electronic submission of the paper (pdf format). An identical hardcopy version plus all codes must be supplied in the subsequent meeting

TENTATIVE presentation dates

Wednesday, November 6, 2:15 pm:	Presentation of the final results, room: TBA
Wednesday, November 13, 2:15 pm:	Presentation of the final results, room: TBA
Wednesday, November 27, 2:15 pm:	Presentation of the final results, room: TBA

Grading

The grade consists of the following parts:

- Seminar paper: 50%
- Programming: 20%
- Activity in group meetings: 10%
- Final presentation: 20%

How to register

You register in OLAT (the link can be found here: http://www.wiso.uni-kiel.de/de/studium/aktuelles) and **have to attend** the first meeting of the seminar on **Wednesday, July 3**.

Prerequisites

- Seminar preparation course
- Econometrics I and II / Statistics I and II
- At least one of the courses “Univariate Time Series Analysis”, “Applied Business Cycle Analysis and Forecasting”, “Data Mining”, “Statistical Computing”, and “Multivariate Time Series Analysis and Forecasting”.