Freie Universität Berlin
School of Business & Economics
Chair of Econometrics

Prof. Dr. Dieter Nautz
Winnie Coleman, M.Sc.
Summer semester 2025

Applied Time Series Econometrics

Syllabus

Bachelor in Economics: specialization: "Quantitative Methods" ("Vertiefungs- und Spezialisierungsgebiet Quantitative Methoden"), 6 ECTS

Course Structure

The course consists of two parts. In the first part, starting on 16.4.2025, we provide a short course in Time Series Econometrics with lectures (Nautz) and exercise sessions (Coleman), ending with a midterm on 28.5.2025. In the second part, students choose an empirical project to apply time series methods. In early/mid-July, preliminary results of the project are presented. The project is summarized in a short paper to be submitted in mid-September. A list of potential projects is provided, own suggestions are possible.

Time and Place

- *Lecture:* Wednesday, 12 - 14h (Room K005)
- *Exercise:* Wednesday, 14 - 16h (Room K005 or PC-Pool)

Knowledge level

Students should have successfully passed the courses "Introduction to Econometrics", "Introduction to Statistics", "Inferential Statistics", and "Mathematics for Economists".

Grading

Midterm (45 minutes, pen & paper) required for active participation, one presentation of the research project (including preliminary results) at the end of the semester, and a term paper (8 pages) at the end of the term.

Software

EViews (available in the PC-Pools), LaTeX(presentation slides and paper templates are provided)

Topics

AR(DL) Models, Granger-causality, Error-correction models, Forecasting, (G)ARCH models

Literature

- Econometrics textbooks with time series chapters:
  - Hill, R. Carter, William E. Griffiths, and Guay C. Lim. Principles of econometrics. Wiley, 2018. *Available in the library*.
  - Stock, James H., and Mark W. Watson. Introduction to econometrics. Pearson Education, 2019. *Available online and in the library*.
  - Wooldridge, Jeffrey M. Introductory econometrics: A modern approach. Cengage, 2020. *Available in the library*
- Kirchgässner, Gebhard, Jürgen Wolters, and Uwe Hassler. Introduction to modern time series analysis. Springer, 2012. *Available online and in the library*.
- Enders, Walter. Applied Econometric Time Series, Wiley, 2015. *Available online and in the library*.

Further Information

- Course material and communication throughout the semester on Blackboard