

Seminar on Data Science & Econometric Methods

Institute of Econometrics und Data Science

Leibniz Universität Hannover

Summer 2025

Objectives of a Seminar Paper

In a seminar paper, you practice. . .

- . . . familiarizing yourself with an economic issue
- . . . reading scientific articles
- . . . conducting your own empirical analysis
- . . . and critically interpreting and presenting results (both in writing and as a presentation)

⇒ By choosing seminar topics, you give your studies an individual profile and can find out which areas you are particularly interested in (very important for deciding what type of job you want to pursue after graduating).

⇒ A seminar should be good preparation for the master's thesis and for demanding internships.

Timeline of the Seminar

- 24.02.: Information meeting with an introduction and clarification of general questions
- 26.02.: Deadline for preliminary registration for the seminar (via form and specifying your topic preferences)
- 28.02.: Feedback from the institute: Which topic has been assigned to you and who is the supervisor
- 02.03.: Binding registration for the seminar, i.e., if you decide not to participate in the seminar after receiving feedback from the institute, you have until 02.03. to declare this by email (if you do not withdraw, you are automatically registered)
- 03.03.: Start of the processing period
Voluntary offer: *Introduction to Academic Work at the Institute for Econometrics and Data Science* (Einführung in das wissenschaftliche Arbeiten am Institut für Ökonometrie und Data Science), 19.03.-21.03.
- 8./9.4. Interim presentation
- 18.05. Submission of the seminar paper via email to the supervisor

An Offer for Starting Assistance

From 19.03 to 21.03, there will be an *Introduction to Academic Work at the Institute for Econometrics and Data Science*. Participation in the course is voluntary, but recommended.

Content:

- Introduction to programming with Python
- Introduction to the word processing software LaTeX
- Academic writing and integrity

Information about the course (including when specific topics will be taught) will be available in advance on the institute's website. You may also choose to attend only those course days that are relevant to you (e.g., if you are already proficient in Python but would like to learn LaTeX).

Topic Selection

We are happy to review your topic suggestions for feasibility (just send an email to soenksen@eds.uni-hannover.de). If you don't have an idea of your own, here is a pre-selection of topics:

- ① Decoding Oil Price Dynamics: An SVAR Analysis of Economic Impacts
- ② Using GMM with Alternative Moment Specifications in Asset Pricing
- ③ After the pandemic: Reassessing the rare disaster hypothesis using empirical likelihood
- ④ Comparing different volatility models using maximum likelihood
- ⑤ Comparative Analysis of Realized Volatility and GARCH Models in Forecasting Financial Market Volatility
- ⑥ The Impact of Central Bank Announcements on Cryptocurrency Markets: An Event Study Approach
- ⑦ Extracting Hidden States in Macroeconomic Series Using RNNs

Detailed descriptions can be found on the institute's website.

The Interim Presentation

This seminar does not have a final presentation but is accompanied by an interim presentation (08./09.04.).

- The interim presentation gives you the opportunity to directly incorporate feedback into your work and improve it, which also helps spread the workload before the exams more evenly.
- Participation in the interim presentation event is mandatory.
- By delivering a convincing performance in the interim presentation, you can earn a grade bonus of one intermediate level (e.g., from 2.0 to 1.7). Importantly, the bonus cannot transform a 5,0 (failed) into a 4,0 (pass).

What Makes a Convincing Interim Presentation?

Of course, by the time of the interim presentation, you will not be finished with your seminar paper that is not expected. The aim is simply to present the current state of your work and provide an outlook on what is yet to come. For a good interim presentation, consider the following:

- You provide an initial overview of your research question and explain why it is relevant.
- You describe what you have done so far (e.g., downloaded data and conducted initial analyses) and what you plan to do next.
- You address the problems you have encountered so far and discuss your current solutions, as well as the obstacles you expect to face in the next steps (the feedback is intended to help you, after all).
- You package all of this in an engaging presentation (with clear slides and a good structure) and present freely.
- You participate in the discussion of your fellow students' presentations.

The Analysis and Written Paper

The written paper:

- has a length of 15 pages for individual work (text only, excluding graphics and formulas, 12pt font size, 1.5 line spacing).
- should be written in English.
- should be written using a word processing program (LaTeX is recommended, but Word is also acceptable).
- must adhere to academic integrity (e.g., through appropriate citations).
- should have a well-motivated economic question.
- should clearly demonstrate that you have understood the respective empirical method.

Additionally, please note:

- ⇒ A LaTeX template will be provided.
- ⇒ You may use software of your choice for the empirical analysis.