

General Information on supervision of Bachelor's and Master's Theses at the Chair of Econometrics

Author: JProf. Dr. Antonia Arsova

This document provides some guidelines for students who wish to write their Bachelor's or Master's thesis at the Chair of Econometrics.

1. First contact: E-mail at arsova@statistic.tu-dortmund.de

When you contact me for the first time about supervising your thesis project, please provide the following information in your e-mail:

- a. Name, study program (e.g. BSc Statistics or MSc Econometrics) and study semester.
- b. Grades for core modules such as Probability Theory, Statistical Theory, Asymptotic Theory, Time Series, Econometrics (whichever apply to your study program). In case you had to complete compulsory pre-requisites (Auflagen), a proof of their completion is also necessary.
- c. List of elective courses taken along with your grades – this will help me get an overview of your interests and background.
- d. Research question / topic / area based on your interests, ideally an initial version of your exposé (see point 3.1 below) with some references.
- e. Time plan: when do you plan to start working on your thesis and when do you want to submit it; also whether you plan to work on it full-time or you will be writing it in parallel with your job.
- f. In case you wish to write a thesis while doing an internship at a company: let me know what problem you will be working on, at which department/team, what statistical methods you have perhaps already agreed on, time plan, etc. Do not forget to clarify issues related to data accessibility and data privacy, duty of secrecy, etc., as well as whether the results of the thesis may be published as an academic article.

2. Topic selection

You are encouraged to contact me with at least some ideas about the area in which you wish to write your thesis. A selection of these is given below. I am ready to assist bachelor students with selecting an appropriate topic and research question. For master students topic selection and defining an appropriate research question belongs to the actual task of writing a master's thesis. Tips: implementing a novel methodology; comparison of techniques; replication of an academic paper constitute some options. Based on your interests, I shall provide you with some

references as a starting point and guidance regarding the scope of your project, but the choice of the topic (i.e. formulation/specification of a research question, finding references, finding data) is your responsibility. I am ready to help with each of these points, but to a certain extent.

Possible research areas/questions and initial references

- Time series analysis and forecasting
- Macroeconometric modelling and forecasting
- Unit roots and cointegration
- Dependence modelling in time series and panel data (e.g. dynamic factor models, copulas)

3. Workflow and communication

1. After first contact per e-mail, we shall schedule an initial meeting, at which we discuss your interests and clarify the focus of your project. Following that meeting, I expect you to send me an exposé (a detailed project description, ca. 2 pages). It should clearly outline the following:
 - a. Research question: What do you want to examine? Why is it relevant? What will be the scope of your work?
 - b. Statistical methodology: What is the state-of-the art (brief literature review)? What methods will you use and why? How are you going to implement them?
 - c. Data sources and data description (if applicable), and necessary data pre-processing steps.
 - d. List of references (perhaps not exhaustive, but the most important ones should already be clear).
2. I shall provide you with feedback on your exposé. After we agree upon any amendments, if necessary, it will be binding for the aim and scope of your work. This final agreed version of the exposé will help us both keep track of your future progress.
3. If at some point you decide that you do not want to write your thesis under my supervision, please let me know. No hard feelings, I just need this information for better allocation of my time. Thank you.
4. You are expected to report on your progress **at least** twice before submitting the thesis (e.g. after roughly 1/4 and 1/2 of the time has passed). Ideally, we shall talk once every few weeks. Drop me an e-mail and we'll arrange a meeting.
5. During our meetings you are encouraged to make a list of to-do's, which will be your roadmap. You are expected to send me a copy of this list shortly after the meeting. It would be even better to send me a link to a shared file where these are listed (e.g. Google Docs).

6. If I don't hear from you, I assume all is fine!
7. Please contact me in case of any problems you feel you spend too much time on! Please include a detailed description of the problem and potential solutions that you can think of.

4. Thesis format

1. Language: you may write your thesis either in German or in English. If you are a master student, you are particularly encouraged to write in English. Given that most references are also in English, it may perhaps be even easier for you.
2. Outline: you are expected to follow the outline of your Case Studies projects, and write your thesis in LaTeX.
3. Expected thesis length: about 30 pages for a bachelor's thesis and about 50 pages for a master's thesis (-\ 10%), excluding references and lengthy tables/figures. For theses in German language: 35/60 pages, respectively.
4. Code (if applicable): well commented. Consistency between variable names in the thesis and in the code is expected.
5. Finding literature: Google Scholar is your best friend.
6. You are encouraged to use Citavi/Mendeley for reference management.
7. Writing style: academic writing style without grammar or spelling errors is expected. For theses in English you are encouraged to consult e.g. <https://www.phrasebank.manchester.ac.uk/>

5. Other formalia

1. You should formally register your thesis (Abschlussarbeit anmelden) up to 3 weeks after we've agreed on the thesis outline/exposé. This is to ensure that the majority of the work is completed within the official time frame.
2. You are encouraged to present your master's thesis at the Econometrics Colloquium (Oberseminar). If you are studying in the MSc Econometrics program, this presentation constitutes your obligatory thesis defence.