UNIVERSITY OF MANNHEIM
Department of Economics

Economics Department
L7, 3-5
D-68131 Mannheim

Bernhard Ganglmair
Tel. +49/621/1235-304
ganglmair@uni-mannheim.de

Guidelines
Bachelor's and Master's Theses*

This version: July 24, 2024

The purpose of this document is to provide students with some guidelines for writing a bachelor's or master's thesis. It describes possible methods for the thesis, the application procedure, the schedule that has to be followed by successful candidates, and the evaluation criteria.

I expect that students will inform themselves about the administrative details. Information concerning the examination regulations for the bachelor's and master's programs in Economics, guidelines of good research practice (including the department's guidelines for bachelor theses), and the statutes on procedures for handling research misconduct are available at

https://www.vwl.uni-mannheim.de/en/services/for-students/downloads/.

1 Some Basics

1.1 A Pep Talk

Writing a thesis can be a great adventure. After studying for almost three years (and sometimes even more), students finally have the opportunity to focus on a question one is intrinsically interested in and can finally apply all the methods and knowledge acquired during their studies. For most bachelor students, this will be the first attempt at a scientific project, and it will be something they potentially will remember for quite a while. The topic of the thesis is also something often asked by friends, family, and future

*This document builds on Wladislaw Mill's guidelines.

employers. Therefore, picking something interesting is crucial. As most students will need to put quite some sweat and pain into the thesis, it is best to do that for something one is really burning for instead of something randomly assigned to them.

The thesis will also give most students additional competencies and is expected to be an important learning experience. In particular, students will develop their own research ideas, judge scientific papers, critically evaluate scientific research, and communicate their own research succinctly and clearly. Further, they will finally get the opportunity to apply scientific methods learned during their studies to something meaningful.

The thesis is supposed to be challenging, but it is also supposed to spark joy and broaden one's interest in scientific work.

1.2 Areas of Supervision

I supervise theses in the broad areas of industrial organization and law & economics. I have a particular interest in competition, innovation, contracts, and regulation, and I use both theory and empirical methods (including text-as-data methods) in my own research. That said, I am also happy to consider theses outside my own areas of research. You can find more information about research (and interests) here: https://bganglmair.github.io/research.html.

1.3 Bachelor's vs. Master's Thesis

The difference between a bachelor's and a master's thesis lies in the duration, depth, scope, length, and research independence. Because candidates writing their master's thesis are given more time (*duration*), they will be able to dig deeper into their research question and perform additional analyses that may not be possible for a bachelor's thesis (given the time constraints) (*depth*). Data construction or collection is also within the *scope* of a master's thesis (but not a necessity); I would typically try to avoid a larger-scale data construction/collection for a bachelor's thesis but instead, provide data or give clear instructions on where to find it. With all these things in mind, a master's thesis will inevitably be *longer* than a bachelor's thesis.

A bachelor's thesis might be the candidate's first scientific project. Candidates writing their master's thesis have already more experience under their belt. As an advisor, I will ask for more *independent problem-solving*. The goal of a master's thesis is the production of new knowledge, a piece of scientific writing that contributes something new to the relevant literature. It could eventually become a first dissertation chapter for those candidates inclined to move on to doctoral studies.

2 How to Get Started

Before starting your thesis, it is essential to manage your time carefully and to be aware that writing the thesis takes **more time** than you probably anticipate.

2.1 Finding a Topic

Select a topic in which you are interested and then define a very **precise research question**. Remember that you do not have all the time in the world for your thesis. Do not try to be too ambitious, but be realistic. Most likely, you will not be able to reinvent the wheel. But also keep in mind that the thesis is a rare opportunity to study a question you are interested in, and you even might be able to make a valuable contribution. The thesis might be a very tough but also rewarding challenge.

Start by reviewing the **relevant literature**. Then, talk to others to determine whether your idea is interesting or promising. If you struggle to identify a good topic for your thesis, approach me. I keep a list of possible topics for both bachelor's and master's theses.

2.2 Finding Literature

A first starting point for your literature search should be literature databases such as `jstor.org` (for published articles), `ideas.repec.org` (with links to both published and unpublished articles), or `ssrn.com`(for unpublished articles). At the end of the day, you will be able to locate most papers on `scholar.google.com` (providing you links to the papers in databases, discussion paper series, the publisher's/journal's website, or individual's website).

- Pay particular attention to papers that have been published in *good* journals as this generally signals quality. The top-5 journals in economics are the *American Economic Review*, the *Quarterly Journal of Economics*, the *Journal of Political Economy*, *Econometrica*, and the *Review of Economic Studies*. Other highly-ranked general interest journals in economics are the various *American Economic Journals*, the *Review Economics and Statistics*, the *Journal of the European Economics Association*, and the *Economic Journal* (to name just a few).

- For some areas, it is also worth keeping an eye on general science journals such as *Science*, *Nature*, or the *Proceedings of the National Academy of Science* are also worth keeping an eye on.

- However, in many cases, you will not find the most relevant literature for your topic in the top general-interest journals but instead in field journals. For instance,

for the field of industrial organization, very good and good field journals are the *RAND Journal of Economics*, the *Journal of Industrial Economics*, the *International Journal of Industrial Organization*, or the *Journal of Economics and Management Strategy*. In law and economics, you will find a good deal of research in the *Journal of Law, Economics, and Organization*, the *Journal of Law and Economics*, and the *American Review of Law and Economics*.

- Finally, journals from other disciplines can also provide very useful information on particular topics.
- Stay away from publications in predatory journals or by predatory publishers. The output in these journals is often of questionable quality.

Keep also in mind that sometimes you will not be able to freely access some publications. In economics, it is common to publish a working paper that is essentially identical to the publication, which often can also be used as a source. So, if you do not have access to the published version of a paper, look for the most recent working paper version, e.g. on SSRN or the authors' websites.

2.3 Plagiarism

It goes without saying that citing your sources properly is **very important**. Plagiarism will be taken extremely seriously and any misconduct can lead a student to be excluded! Plagiarism is the use of another author's ideas, thoughts, and expressions. Taking passages and sentences from another author word-by-word (verbatim) is in itself no problem as long it is **cited** adequately. If the ideas and thoughts of another author are rephrased, they need also to be cited. The same holds if ideas and concepts developed by another person are used. Essentially, plagiarism means presenting some idea, thought, or work as one's own creation if, in fact, the idea, thought, or work has been done or invented by somebody else.

While most mistakes in a bachelor thesis can be made up for, this is not the case with plagiarism. Plagiarism is a serious offense! If I find evidence of plagiarism (that does not mean having accidentally used the same phrase or having used a well-established idea) I will mark the thesis with a 5.0 and will contact the Dean's office! See here for the official procedures for misconduct:

https://www.vwl.uni-mannheim.de/media/Universitaet/Dokumente/Satzung_Umgang_mit_wissenschaftlichem_Fehlverhalten_en.pdf

I will use a software-assisted tool to check for plagiarism. Specifically, I use Ouriginal (Urkund). You can find more information here: https://www.uni-mannheim.de/en/

it/services/software/ouriginal-1/.

2.4 Formal Requirements

The thesis must comply with the following formal requirements. This list follows the guidelines put forward by the Department of Economics for bachelor's theses, available here:

2.4.1 Language

I supervise only theses written in English.

A note for German native speakers: English is not a verbatim translation of German, especially in academic writing. We use short sentences; we avoid passive voice whenever possible (let me repeat: do not use passive voice unless you really have to!); we keep the language non-fancy (you are writing an economics thesis, not a philosophical treatise).

2.4.2 Structure of the Written Thesis

The thesis has to be structured (following the guidelines of the department) as follows (parts in parentheses are not obligatory):

1. **Cover**: includes title of the thesis (and type: bachelor's or master's), supervisor's name, student name and contact information, student ID, submission date. You can find a sample cover page 5 of this document:

   https://www.vwl.uni-mannheim.de/media/Fakultaeten/vwl/Dokumente/VWL_RichtlinienBScThesis_Guidelines.pdf

2. **Table of Contents**: headings in the table of contents and the text must be numbered identically

3. **List of Figures**: all figures with number and heading

4. **List of Tables**: all tables with number and heading

5. Optional: list of abbreviations (if sufficiently many uncommon abbreviations are used) and list of symbols (with all mathematical symbols and variables and their definitions)

6. Main content:

   - **Introduction**: A good introduction comes with the motivation, research question (at the end of the first paragraph or second paragraph!), a summary of your methodology (and the key assumptions or identification approaches), a

summary of main findings, and the relevance of the findings (what is the contribution to the literature). You can find some guidance on how to write a good introduction here:

https://www.cgdev.org/blog/how-write-introduction-your-development-economics-paper

Take some inspiration from this document as well:

https://blogs.ubc.ca/khead/research/research-advice/formula

This short document has some additional thoughts on writing your introduction:

https://scholar.harvard.edu/files/shapiro/files/foursteps.pdf

The main take away. The first thing you write is your introduction, then you edit it along the away, and the last thing you edit is, again, your introduction.

- **Related Literature**: cite all *relevant* literature that has attempted to answer the same or a related question and point out how the thesis builds on the literature and extends the literature (this part is the extended part of the "relevance of the findings" in the introduction).
- **Main Part**: depending on the type of thesis, the own work is presented and explained. For an empirical thesis, you will need sections describing the data and methodology (with special attention to the identification strategy if you are aiming at showing a causal relationship), the main results, and robustness. For a theory thesis, you will need a section introducing the model, a section with the model solution, comparative statics, and possible extensions.
- **Discussion and Limitations**: take a neutral stance on your own work and discuss the strengths and weaknesses of the approach, of the idea of goal, etc.
- **Conclusion** (a short summary of the thesis with a short conclusion)

7. **References**: in alphabetical (first) and chronological (second) order. *See below for details.*
8. Optional: Appendix with, e.g., details on data construction that are too detailed for the main part, detailed proofs. The thesis without the Appendix needs to be self-explanatory. Do not include anything in the appendix that is needed to understand your thesis.
9. **Affidavit** – Ehrenwörtliche Erklärung (see the department's guidelines for a tem-

plate)

2.4.3 Typesetting

For a bachelor's thesis, I recommend using LaTeX; for a master's thesis I require using LaTeX (with exceptions under reasonable circumstances; talk to me!). LaTeX is the standard in the scientific community, has an extensive online community, and is freeware. The department offers a bachelor's thesis template here:

https://latexkurs.de/MA-en/Template_Bachelor_Thesis_LuaLaTeX.zip

I am not aware of a template for a master's thesis. For master's thesis candidates: adapt the template as needed.

Length: A bachelor's thesis should be between 20 and 25 pages (excluding reference list and appendices); a master's thesis should aim for 30 to 40 pages. Keep it short, but not at the expense of clarity. It is essential in academic writing to communicate your ideas clearly but also concisely.

Formatting:

- Paper: one-sided DIN A4
- Font Size: 12 pt
- Line Spread: 1.5 pt (one-half spacing)
- Alignment: justified (Blocksatz)
- Margins: 3 cm

Tables and Figures: Tables and figures must be numbered. It is important that they are self-explanatory, i.e., the reader should not have to look for information in the text to understand their content. Add table notes and figures notes providing additional information on what is in the tables and figures. Only the important tables and figures should be kept in the main text, all the others should be relegated to the Appendix.

Equations: Important equations should be numbered so that they can be referred to in the text. For example:

$$\pi_i^1(c_i, c_{-i}) = 20 - c_i + 0.5 \sum_{j=1}^{n} c_j \tag{1}$$

Unimportant equations need not be numbered. Do not flood the reader with equations. Lengthy algebra can be relegated to the Appendix if it is not central to the understanding of the thesis, or if it is not the main contribution of the thesis.

2.4.4 References

It is important to cite others' work, ideas and thoughts in either their words or your own words. For citations and references, note the following:

- Use author-year style. Cite in flow-text or parenthetic. For instance:
  - "Rabin (1993) was the first paper to ..."
  - "People seem to be averse to uncertainty (Ellsberg, 1961)."
  - "Fehr and Schmidt (1999) develop the first theoretical account of other-regarding preferences."
- Footnotes are not the correct location for your citations (you may cite work in your footnotes, but that is because there is text in the footnotes the requires a citation).
- LaTeXusers: use bibtex and `\usepackage{natbib}`. Use the commands `\citet` and `\citep`. These commands will help with the creation of the reference list.
- Bibliography style: A simple style is `\bibliographystyle{econ}`, but you can use others. If you build the list of references manually, I recommend you follow the formatting of the list of references in a journal (e.g., American Economic Review).
- Your .bib file (or, if done manually, your list of references). The list of references contains all references cited in your thesis. References are sorted alphabetically and chronologically. Each record contains the information needed to find an article.
  - For journal articles: authors, title, journal name, volume, issue/number, pages, year (your bibliography style will determine the order of these items).
  - For books: authors, title, publisher (and city+country), year, edition (if applicable).
  - For working papers in a working paper or discussion paper series: authors, type (e.g., "NBER Discussion Paper"), number, institution (e.g., "National Bureau of Economic Research"), address (e.g., Cambridge, Mass.), year.
  - For working papers not in a discussion paper series (e.g., SSRN [SSRN is NOT a journal], author's website, ...): authors, title, "unpublished manuscript, available at [DOWNLOAD LINK]", year.

- Be consistent in the formatting of your reference list:
  - Correct names and capitalization/titleization of journal
  - Correct and consistent capitalization/titleization of article titles
  - Complete records!
- Citing an internet source: Using a footnote and specifying the time of retrieval is mostly sufficient. For example: *In a recent interview with the New York Times, Bernie Sanders perfectly...*[1]
- Quotes: It might be useful to quote an idea or thought directly from the original source. To do so use quotation marks for such sentences (i.e., “ ”). If the thought is longer than just a sentence use the `quote`-environment.

2.4.5 Deliverables

Candidates submit their **written thesis** (see above) and a **replication package** (if applicable). The idea of the replication package is to provide the code (and instructions on how to run the code) that produces the tables and figures in the thesis (from raw data to final tables and figures). The ultimate goal is **replicability** of your research results!

Take inspiration for your replication package and README file from the Social Science Data Editors at https://social-science-data-editors.github.io/guidance/. The guidance they provide is for articles published in peer-reviewed journals. A good number of things may not apply to a bachelor's or master's thesis.

3 Procedure

3.1 Selection of Candidates

Contact me with an expression of interest, include your CV, and up-to-date academic record, a confirmation that you fulfill all the formal requirements (or will fulfill when intended work on thesis commences), and a short list of topics (or general area of interest). Also include a proposed starting/ending date.

After receiving the information, we will arrange for a kick-off meeting to define a possible topic (or narrow it down). At most one week after the kick-off meeting (or a mutually agreed point in time), I will inform students if I am able and willing to supervise their thesis.

[1] Michael Barbaro. 2019. Interviewing Bernie Sanders. Retrieved January 6, 2020, from https://www.nytimes.com/2019/12/06/podcasts/daily-newsletter-bernie-sanders-jungle-prince.html.

3.2 Next Steps

For the registration of the thesis, I require an outline of the thesis

- A two-page introduction with a short motivation, the research question, the intended methodology (and data sources), a short summary of the relevant literature (this is shorter than the relevant literature section in the thesis itself).
- A list of section and subsection titles (indicating the proposed structure of the thesis)
- For each section and subsection, one paragraph summarizing what that section/subsection will contain.

This outline has enough information on the What? How? and Why? with a first roadmap (that will be subject to changes as candidates begin working on the thesis!).

3.3 Submission

Candidates hand in two hard copies of the thesis at my office (or the front desk at ZEW Mannheim) before the date specified. They also send a PDF version of the thesis and a replication package by mail to ganglmair@uni-mannheim.de at the latest on the due date. If the replication package contains the data, the candidates provide the replication package on a USB stick or provide the link to an online repository (e.g., Github, Zenodo; also Dropbox, or similarly).

3.4 Meetings

The following applies to all meetings: After each meeting, the student sends me a short summary of the meeting with all the main points discussed. The purpose of this rule is three-fold: (1) it helps students to remember the content of our meetings, (2) it ensures that students take notes on essential aspects of the conversation during our meetings, and (3) it ensures that we do not discuss the same issues over and over).

4 Evaluation

In a nutshell, a great thesis is a concisely written, clear paper with an interesting research question and a well-executed method. The actual result is secondary (meaning: we are not looking for stars in regression tables!). It is also very important that the author is able to critically evaluate their own work. More specifically, I expect a great thesis to point out flaws and limitations of the work and potentially some ideas and suggestions on how to improve the work. Nobody expects the thesis to be a full blown flawless piece of

research. This may be the first time for students to write such a thesis, but being critical is a good thing. By pointing out mistakes you show you understand what you are doing.

In more detail, the thesis will be evaluated on the following criteria:

1. **Focus on the research question.** I will pay close attention to whether the thesis is focused on a research question, whether the question is communicated clearly, and whether the thesis follows a common thread.

2. **Selection, understanding, and reference to the relevant literature.** I will evaluate how well the students are able to position their thesis within the relevant literature and whether the relevant literature has been mentioned and correctly represented. As the thesis will definitely not reinvent the world, your thesis will and has to be embedded into a deeper literature. Failing to cite the relevant literature will be a sign that the author has not focused sufficiently on the research question. Not citing the relevant literature further makes it more difficult to pinpoint the own contribution.

3. **Correct application of the research methods (empirical, theoretical).** Applying the method will be the most important part of the thesis. It is relevant to show that the author is able to use scientific methods to answer the research question.

4. **Argumentation (structure, logic, etc.).** Logic and structure are essential parts of scientific thought and have to be taken seriously. If the thesis feels like a beautiful arrangement of randomly drawn words from the encyclopedia or ChatGPT (or even worse, like a reading by a continental philosopher), the grade cannot be too good.

5. **Formatting (spelling, grammar, citations, tables, figures, etc.).** Formatting will be taken into account. If the thesis is otherwise extraordinary, bad format of tables and figures might affect but will not change the grade substantially. However, if the spelling and grammar make it hard to read the thesis, this will influence also other points and might make the thesis substantially worse. So ask friends/family to go through your spelling. Most students are not using English as their first language and this is taken into account. However, I will accept bad writing only up to a limit.