

# Style guide for writing a thesis

Junior Professorship for Energy Markets and Energy System Analysis

Prof. Dr. Mario Liebensteiner

This guide is intended to assist you in writing an academic paper (e.g. master's thesis, bachelor's thesis, project work, seminar paper). All the points included are well-intentioned advice. Of course, there may be reasons to deviate from these recommendations.

## 1. Content of the thesis

The requirements for the content of the thesis depend on the level of study:

- **Bachelor's theses/seminar papers:** These papers generally consist of a literature-based qualitative analysis, which may also include empirical elements (e.g. descriptive statistics or correlations). Compared to seminar papers, bachelor's theses require a more in-depth economic analysis and a greater number of sources.
- **Project work:** A project work is generally literature-based. It follows the approach of literature-based bachelor's theses but is expected to reflect the quality level of a master's program.
- **Master's theses:** Master's theses typically address economically relevant questions and have an empirical-econometric focus. A good benchmark is an empirical research article published in a scientific journal.

Students sometimes tend to try to explain too much in a thesis (e.g., focusing on more than one topic). This can lead to the problem of not being able to explore a specific topic in depth. Therefore, it is generally better to concentrate on a **narrowly defined topic** and conduct a thorough analysis of that topic.

## 2. Language

You can write your thesis in either German or English. However, it is crucial that the linguistic level (style, grammar, expression) meets the quality requirements of the thesis.

## 3. Assistance

Your supervisor can assist you in defining the topic and is available to provide their expertise during the writing process. This is especially important if you encounter difficulties. Additionally, you can send a brief excerpt (e.g. 1–2 pages of your main chapter) to your supervisor once to receive feedback on your writing style, argumentation, citation, etc. Nevertheless, writing a thesis (especially at the master's level) requires a high degree of personal commitment and responsibility.

## 4. Grading

Your final grade will be based on the following criteria:

- **Content:** Is your work economically relevant? Is your work relevant to the design of policy measures? Do you address the essence of the topic? Do you discuss the topic from different perspectives? Do you offer insightful policy recommendations? Do you provide a comprehensive discussion of your topic that goes beyond standard arguments? Does your work meet the quality standards of a master's thesis/bachelor's thesis/project work/seminar paper?
- **Methodological implementation:** This primarily applies to master's theses. Is the applied method well explained? Is the identification of the effect of interest clearly described? What sources of bias could exist, and how are they empirically addressed? Which hypotheses are being tested? Is the methodology intuitively well described?
- **Literature:** Are contributions from academic journals included in the work? Are the cited publications relevant to the topic of the work? Are they truly discussed, or merely referenced?
- **Style:** Is the text engaging? Does the paper follow a clear line of argument (red thread)? Do you provide insightful interpretations, comments, and discussions that help the reader understand the main findings, their limitations, and their pros and cons? Are the arguments and interpretations logical, factual, and well-structured? Is it clear which parts of the text are drawn from the literature and which statements are the author's own?
- **Formal Criteria:** Structure, length, references, etc.
- **Language:** Linguistic coherence, grammar, spelling, tenses, **gender-inclusive language**, etc.

**Quantity** (length of the paper) is **secondary** to the quality of your work. **Economic depth** plays a **crucial** role!

## 5. Quantity

**Master's theses:** For an empirical analysis, there are no regulations regarding the length of the text. Typically, the papers are around 30–35 pages. The data preparation, empirical evaluation, presentation and interpretation of results, as well as the integration of the topic into the literature and the derivation of policy recommendations, play a crucial role in grade determination. Here, the guideline is: the text (excluding graphics, tables, etc.) should be as long as necessary, but not longer. Sometimes 20 pages of text are sufficient, while at other times 40 pages may be required. Refer to well-published contributions in academic journals (though you do not have to reach this level of quality).

**Bachelor's theses/project work:** For a literature-based paper, you should aim for about 25–30 pages of text. With graphics, tables, and lists, the text will be slightly longer. However, use graphics and tables sparingly and only when they add value. If a graphic can be easily explained in one sentence in the text, the graphic is likely unnecessary.

**Seminar papers:** For a literature-based paper, you should aim for about 13–16 pages of text. With graphics, tables, and lists, the text will be slightly longer. Use tables and graphics very sparingly in seminar papers (even less than in bachelor's theses). While these can be very helpful for understanding, they can be counterproductive if they serve only as placeholders.

## 6. Formatting and citation style

There are no specific formatting guidelines. However, adhere to common practices (use **standard font, spacing, and margins**). The main text is typically **justified**.

Ensure there are enough paragraphs to logically structure the text passages but avoid one-sentence paragraphs.

**Insert page numbers.**

**Number the chapters** of your work.

Avoid blank pages and excessive vertical spacing (e.g. before a new chapter). A scientific paper should resemble an article in an academic journal rather than a long report.

Choose one of the officially recognized **citation** styles (e.g. Harvard style in parentheses) for citing your sources and maintain **consistency** throughout your work. If you are unsure how to cite specific sources, look in recognized academic journals for examples. All references cited in the text must be included in the bibliography. The **bibliography** should be sorted **alphabetically**.

Here are a few examples of literature references in the text:

- Ketterer (2014) and Würzburg et al. (2013) provide empirical quantifications of the merit-order effect. [Citation directly within the running text]
- Several empirical studies point to a pronounced merit-order effect (Ketterer, 2014; Würzburg et al., 2013). [Citation in parentheses]

Here is an example of the bibliography at the end:

## References

EIA, 2018. Natural gas-fired electricity conversion efficiency grows as coal remains stable. US Energy Information Administration (EIA) (August 21). Retrieved from [www.eia.gov/todayinenergy/detail.php?id=32572](http://www.eia.gov/todayinenergy/detail.php?id=32572).

IEA, 2012. Challenges in electricity: A focus on Europe. International Energy Agency (IEA).

Joskow, P., Tirole, J., 2007. Reliability and competitive electricity markets. *RAND Journal of Economics*, 38(1), 60–84.

Ketterer, J.C., 2014. The impact of wind power generation on the electricity price in Germany. *Energy Economics*, 44, 270–280.

Würzburg, K., Labandeira, X., Linares, P., 2013. Renewable generation and electricity prices: Taking stock and new evidence for Germany and Austria. *Energy Economics*, 40, 159–171.

## 7. Structure

- **Cover page (see appendix):** Title of the paper, institute (e.g. Chair of Energy Markets and Energy Systems Analysis), name of the supervisor, name of the student, and student ID number. No personal address!
- **Table of contents (not required for seminar papers):** The headings in the table of contents and the text must have identical numbering. Seminar papers do not require a table of contents!
- **Main text:** see next chapter
- **Bibliography:** Alphabetically (first) and chronologically (second) sorted list of sources.
- **Appendix:** An appendix may be included for additional graphics, tables, explanations, etc. if necessary. **Do NOT include lists** for abbreviations, tables, figures, etc.; instead, cite or explain them directly in the caption or within the running text
- **Declaration of authorship:** see appendix

## 8. Main body

Usually, you will analyze a complex topic from many different perspectives (including conflicting opinions of various scholars and opposing results in the literature). Provide the reader with as

much intuition, interpretation, and commentary as possible to facilitate the understanding of the main points in your paper.

A possible structure for a **literature-based paper** (e.g. a bachelor's thesis, project work) could look as follows:

- **Introduction:**

Motivate readers for the topic: Discuss the subject of the paper and why it presents an economic or socio-political issue that needs to be analyzed. Explain how significant the problem is. Build a narrative tension! Capture the readers' interest by preparing them for what they can expect throughout the rest of the paper. The introduction should also highlight the relevance of your work (e.g. that the topic has not been sufficiently researched or is being controversially discussed in the media, etc.).

Additionally, the main topic or central research question of the paper should be presented, along with how you plan to address this question (for example, in the form of a literature review discussing the key differences and/or similarities). It is often helpful to provide a preview of the paper's main findings.

- **Background Chapter:**

This section explains relevant key terms, discusses technical details, and presents essential theories and concepts. This creates a scientific research basis for answering the main research question.

An example could be the description of a specific market (e.g. the market for regulating power), including the essential framework conditions and legal requirements.

It is important to describe all necessary details to understand the main part of the paper. However, all details should be presented as concisely as possible. Very good background texts even provide the readers with an intuition about why it is important to deal with these technical, legal, or institutional details.

Example: *“This chapter describes the key market mechanisms and influencing factors on the wholesale electricity price. This foundation is important for understanding and analyzing the main results regarding a merit-order effect.”*

- **Main chapter 1:**

*Literature-based paper:* Provide an insightful discussion of the topic based on relevant academic literature. Try to view the topic from different perspectives and discuss common patterns as well as controversies.

Whenever possible, place your discussion in context through explanations, interpretations, or (economic) arguments. It is generally advisable to regularly draw interim conclusions.

You may also address which questions/issues are not covered in the literature.

In any case, **provide political recommendations** based on your analysis!

*Example: "The empirical literature finds a clearly negative impact of subsidized wind power feed-in on wholesale electricity prices. However, the effect is more pronounced in some markets than in others. Important factors influencing this merit-order effect in the wholesale electricity market include the structure of electricity supply, the level of electricity demand, which varies greatly over the course of the day and week, but also the prices for gas, coal, and CO<sub>2</sub>. Ultimately, it appears that, despite a declining wholesale electricity price, the price for end consumers can rise in the presence of high grid fees and renewable energy subsidies (see Germany).*

*This leads to important political recommendations. If the aim is to reduce electricity prices for consumers, it must be noted that more renewable electricity does not automatically increase consumer surplus. Furthermore, a falling wholesale electricity price with more wind and solar power leads to falling market values for these energies. Without subsidy payments, these technologies thus suffer in their profitability..."*

- **Main chapter 2:**

Sometimes a second main chapter is useful to better address the research question or topic.

- **Conclusion:**

In this section, briefly summarize what you have done in your paper. You can restate the topic or research question you analyzed and explain why it is relevant.

Summarize the key findings and explain how you arrived at these conclusions. Based on your results, provide political recommendations or restate the policy recommendations discussed in the main body of your paper.

Explain why your findings are important and how they can be used for further research and/or applied in practical policymaking. Also, mention the main limitations of your analysis.

A possible structure for an **empirical master's thesis** could be as follows:

- **Introduction:** See above; possibly highlight relevant gaps in the literature here
- **Background:** See above
- **Methodology:**
  - Model description
  - Identification of the effect
- **Data:**
  - Description of the dataset and the use of variables
  - Descriptive statistics and data overview
- **Results:**
  - Overview and description of empirical results
  - Economic interpretation of the estimated effect
  - Robustness Analyses
- **Conclusion:** See above

Follow the structure and writing style of well-written empirical papers published in economic journals.

## 9. Literature

You can use any sources (internet sources, newspaper articles, Wikipedia, TV interviews, research articles, articles from academic journals, working papers, etc.) in your work as long as they are relevant and related to your topic.

In the introduction, especially where you motivate readers for the topic, referencing a popular media article (e.g. a newspaper article) or a statement from a famous person can be an effective method for creating interest.

However, in the main chapters of your work, you should demonstrate your ability to understand and discuss current scientific literature. Therefore, it is important to discuss relevant publications from academic journals. Of course, you can also include literature from other sources (e.g. working papers, research studies, content from daily or weekly newspapers, etc.).



## 10. Style

Your work should be *economically relevant* and have a *clear focus*.

In addition to the economic-scientific content of your paper, one of the most important elements is how engaging your work is. Make your text reader friendly. Your sentences should be written in a way that your target audience (typically your supervisor and economics students) can understand and easily follow. Therefore, provide as much *guidance* and *context* as possible. Place sentences summarizing your key findings prominently in the paper (e.g. in the main text and again in the conclusion). Put your discussion of the literature into context and provide interpretations!

Avoid using overly technical language whenever possible. Introduce definitions, technical and historical details, and descriptions of background knowledge only when necessary for understanding your main discussions and findings. Extensive descriptions of technical, legal, institutional, or historical facts solely to fill empty pages with text should be avoided. Do not include extensive textbook knowledge; instead, get straight to the point. Stay focused on your topic!

A good paper should discuss a specific topic based on relevant literature and provide *policy recommendations* (based on the literature, other facts, and the discussions you have conducted). This will enhance the political relevance of your work.

## 11. Plagiarism

Text passages, ideas, or data that do not originate from you must be clearly cited in the text with the appropriate references. This means it should be clear which parts reflect your own thoughts, and which parts repeat the ideas of others. Only "common knowledge" or generally accepted facts are exempt from this requirement.

Serious plagiarism in an academic paper can result in failing the course and may also lead to further disciplinary actions from the university.

## 12. Artificial Intelligence

Artificial intelligence (AI) may be used in any form. However, it is important that AI is only a tool. Any third-party writing of the paper (whether ghost authorship by a real person or by AI) is strictly prohibited.

## Appendix 1: Example for a title page of a thesis

Avoid personal details such as home address, personal email address, and phone number!



### Title of the thesis if nec. subtitle

handed in by

Name

seminar paper/bachelor's thesis/master's thesis/project work

date

supervised by

Prof. Dr. Mario Liebensteiner

Junior Professorship for Energy Markets and Energy System Analysis

Friedrich-Alexander-University Erlangen-Nürnberg

Email: [xxxx.yyyyyyy@fau.de](mailto:xxxx.yyyyyyy@fau.de)

Matr.nr.: 0123456

Study Program: Economics

## Appendix 2: Declaration of authorship

### Example 1:

Last name: \_\_\_\_\_ Study Program: \_\_\_\_\_

First name: \_\_\_\_\_ Matr.nr.: \_\_\_\_\_

I hereby declare that I have completed the present work independently, without outside help, and without using any sources other than those indicated. Thoughts taken directly or indirectly from other sources are clearly identified as such. This work has not been submitted in the same or similar form or in excerpts to any other examination authority and has not yet been published.

\_\_\_\_\_

Place, date

\_\_\_\_\_

Signature

### Example 2:

I confirm that I have written this thesis unaided and without using sources other than those listed and that this thesis has never been submitted to another examination authority and accepted as part of an exam performance, neither in this form nor in a similar form. All content that was taken from a third party either verbatim or in substance has been marked as such.

[Signature]

\_\_\_\_\_

Place, date