KATHOLISCHE UNIVERSITÄT EICHSTÄTT-INGOLSTADT

WF

Guidelines:
How to Write a Master's Thesis in the Economics Department

1 Procedure

We **strongly recommend** that you have previously participated in a master's course at the chair where you wish to write your thesis. You should have passed the course at least with the grade 2.3. We will consider other students only in exceptional cases. In any case, please contact us at least a month before you want to start your thesis so that we can discuss potential topics.

You have **six months** to write your thesis. The text (introduction, main part, conclusion) should have between **100,000 and 130,000 characters** including spaces and footnotes; this corresponds to approximately 60-70 pages. If your thesis includes empirical work that you have carried out yourself, the length may vary according to prior agreement with your advisor. You can write your thesis in English or German. Independently of the language, grammatical errors or bad writing will lower your grade.

At your starting date, you will receive an e-mail that contains the title of your thesis, at least three papers as a starting point as well as further comments that clarify how you should approach the thesis. Usually, the starting literature consists of empirical, experimental or theoretical analyses, or a combination thereof. It is your task to complement these initial references with further literature that you choose independently. As a rule of thumb, you should present a total of five to six articles in more detail, with further literature complementing the discussion.

You can think of your Master's thesis as proceeding in two steps, both about equally long and with equal weights for your grade. The first step of your thesis is to present different theoretical and empirical papers from the literature, relating them to each other as closely as possible. You should place special focus on your own interpretations of results, the link between assumptions and results, and the comparison of (theoretical and empirical) results across different papers. This first part is in principle similar to what you have done in the term papers of your seminars, or probably in your bachelor's thesis, but the level of complexity is higher for a Master's thesis.

In a second step, you then carry out a simple modification or extension of one of the models that you have previously described in detail (if the focus of your thesis is theoretical), or you carry out some independent regressions (if the focus is empirical). In either case, this part is a very first step into doing independent research, for which you will receive extra guidance from your supervisor.

No matter whether the focus of your thesis is theoretical or empirical, you should enter the second step only after you have largely completed the first one. This procedure has two important advantages. First, setbacks and dead-ends can never be avoided when doing independent research. Therefore, it is an important reassurance for you to know that you have already written a large part of your thesis before you enter "new territory". Second, and equally important, adhering strictly to the recommended sequence will ensure that you base your own research on a good understanding of the literature. A further advantage is that a detailed presentation and comparison of models in the literature will help you to get ideas about possible extensions of one of these

works (if your focus is theoretical), or help you derive the empirical hypotheses you want to test (if your focus is empirical).

After having worked on your thesis for about three weeks, you should set up a meeting with your supervisor. In this meeting, you should present the additional literature that you have chosen, and a first outline of the first part of your master's thesis. You will then get feedback on the literature you have chosen and whether the overall concept for your thesis is sensible and doable. Further meetings will be taking place upon consultation.

After about 2 ½ months, you present the first part of your thesis (i.e. the literature review) in the thesis colloquium. Approximately six weeks before the end of your work period, you present the second part of your thesis (i.e. your own research) in the thesis colloquium. The presentation time is for each presentation 25 minutes. You present the main aspects of your thesis based on PowerPoint-Slides, answer questions, and receive feedback.

On or before the last day of your work period you must hand in two hard copies of your thesis (hardback, immutable and machine-readable) at the examination office. In addition, please hand in your thesis on the same day via email to your advisor (.pdf **and** .doc/.docx/.tex).

2 General Guidelines

The main objective of a master's thesis is to demonstrate that you can work on a topic **independently and academically**. You should show that you understand a complex line of argumentation, that you can reduce it to its core, present it in your own words, and relate it to previous findings. To achieve this, it is important that your thesis has a consistent line of argumentation. Use your own words: the closer you follow the structure of the original article, the harder it is to document your own understanding of the topic. You can also show your understanding by selective shortening. Ask yourself: What is the central argument? What are the key findings? Make sure that you embed your topic properly in the overall context.

A master's thesis should reflect a good understanding of key concepts and findings related to your topic. In addition to your starting literature, you should discuss two additional articles in detail (and use additional literature to strengthen and complete your discussion). When presenting the further articles, it is important to connect it to your starting literature. Do not merely provide summaries of each study, but rather tie together the results of the studies. When different studies report conflicting findings, suggest explanations. Which differences between the articles are important, which are not?

At the start of the work on your thesis, you should think about the topic in general. Why is it interesting? Why is it important? The answers to these questions should be the basis of your thesis and you should discuss them already in the introduction. Keep the central theme always in mind throughout the paper to ensure that you have a logical and coherent line of argumentation. **Every paragraph** in the thesis needs to be relevant for the discussion of your topic.

You should not only concentrate on the content of your paper but also on clarity, consistency and readability. Use the right language for the audience you are addressing. Keep in mind that you are writing an academic paper, i.e. choose a level of language that is appropriate for a scientific text. You should find words, phrases, sentences, and paragraphs that express your thoughts precisely. Avoid colloquial expressions. Academic writing does not mean complex sentences – in contrast, the writing is often clearer if you keep the sentence structure simple. If you write in English, o not switch between British English and American English.

In general, it is helpful to ask someone else to read your text before handing it in. This is helpful even if (or especially if) the other person is not familiar with the subject. Finally, read the finished thesis several times over several days to improve the language and the writing.

Your master's thesis is an academic paper and therefore needs to meet academic standards (regarding citations, independency…). In case you do not feel sure about the handling of your sources or the appearance of your work, you can take the starting literature as guidance. The articles you receive from us will always meet the academic standards.

3 Structure and Length of the Thesis

Your thesis should have the following structure:

- Front Page
- Table of Contents
- Possibly: List of Abbreviations, List of Tables, List of Figures
- Text
- Appendix
- List of References
- Declaration of Authorship

The **main part** of your thesis must have between **100,000 and 130,000** characters (with spaces; including footnotes; without abstract and appendix). Depending on the layout, number of formulas, tables, etc., the length of the thesis is approximately **50-70 pages**. If you exceed the number of characters substantially, we will lower your grade significantly.

Layout suggestion:

Font and Size:	Times New Roman (size 12), Arial (size 11), or similar. Footnotes should be placed at the end of the respective page (Times 10pt, Arial 9pt). Latex: Standard settings (apart from headlines and footnotes)
Spacing:	1.5 for the main text; full justification.
Margins:	3-3.5cm at all sides.

4 Guidelines on the Components of the Thesis

4.1 Front Page

The front page should include:

- Your name, date of birth, matriculation number
- Type of work: master's thesis
- Field of studies and semesters studied
- Title of your thesis in German and English (needs to be identical with the registration title)
- Catholic University of Eichstätt-Ingolstadt
- Faculty and chair
- Name of your advisor
- Date of submission

4.2 Table of Contents

At the beginning of the thesis there should be a table of contents with corresponding page numbers. The subdivision of sections should be in relation to the length of your thesis, i.e. three levels are usually enough. If you divide a section, it needs to have at least two subsections (e.g., after 1.1 there is always 1.2). The headings of sections and subsections in the table of contents must be identical to the headings in the text. The table of contents should include the page number (right-aligned), referring to the page on which the section begins.

4.3 List of Abbreviations

Use abbreviations sparingly. A list of abbreviations is only necessary if you make use of abbreviations that are not listed in a dictionary. If you create a list of abbreviations, you have to define all the abbreviations not contained in a dictionary. You need not to specify parameters and variables of economic or econometric models in the list of abbreviations.

4.4 List of Tables, List of Figures

You need to create a particular list if you use multiple tables or figures in the text. All tables and figures have to be listed with the same title as in your written part. All tables and figures have to be consecutively numbered and provided with a source (see section 5.2). The corresponding page numbers have to be right-aligned. In general, you have to use a new page per list.

4.5 Text

This section consists of the introduction, the main part, and the conclusion.

Put special emphasis on your introduction. It should

- motivate the topic (Why is the specific topic important, interesting and attention-grabbing?).
- narrow down your topic (What does your thesis deal with? What does it not deal with?).
- provide a short overview of the relevant literature that goes beyond the few intensively discussed papers in the main part.
- summarize the most important findings of your thesis.
- explain the structure and central theme of your thesis.

Your thesis should provide a **well-rounded discussion** of your topic, but you may state more precisely the overall topic we have given you. It is important that this topic runs through the thesis like a golden thread and that the different parts of your thesis work well together. It helps to explain at the beginning of each chapter, what you are doing in this chapter and how it relates to the other chapters in your thesis. At the end of each chapter, a short summary of your main results may be helpful, but focus on the most important aspects.

In choosing further literature (in addition to the references given to you) you are mostly free to focus on those articles that you find most important or relevant for the topic of your thesis. However, you should ensure that your additional references are from "high-quality" sources. The best way to guarantee this is to choose papers that have already been published in peer-reviewed international journals. If you want to use a working paper as a key source, make sure that it is included in a large Working Paper Series (such as NBER, CEPR, CESifo) and/or that it is from well-known authors that have already published successfully in good international journals. Check if the working paper has been published (if it is published, you should use the published version!).

The central task in the first part of your thesis is to show that you can understand a complex, often abstract argumentation and reduce it to its **key message in your own words**, whilst writing precisely and clear. Importantly, you should provide a **detailed intuitive explanation** for the results of the papers that you are using in your thesis. This is one of the best ways to show that you understood the results thoroughly. Do not use too many equations to present the work of others. However, some equations, as well as figures, are often helpful in presenting a complex argument. It can be much more difficult to understand a purely verbal description of a model than a presentation that includes a sensible number of equations.

In your review of the existing literature, a central part is to compare theoretical or empirical analyses with each other, or to link a theoretical analysis to an empirical one. Do this comparison in as much detail as possible. To be sure that your work is based on a solid literature review/embedded in the current findings, take care that your list of literature is not overly short (also see section 4.7). Make sure to always point out the **policy relevance** of your discussed findings.

Another way to demonstrate your independent thinking about a model is to **ask critical questions** about it. But be cautious: the statement that some model assumptions simplify reality is not yet a useful critique (a model has to simplify!). If you want to criticize a simplifying assumption, you have to explain why relaxing it could have important implications for the results of the model.

In the second step of your thesis, where you are doing **independent research**, the rules are different. Here it is important that you document precisely, with all intermediate steps, what you have done. You can use and appendix for the finer details. State clearly where you depart from the existing literature and what your own results are.

If the second part of your thesis is empirical, we will point out potential data sources to you, or provide you with a dataset. You should focus on the formulation of your empirical research question, your identification strategy, the discussion of descriptive statistics and the interpretation of your results. These aspects are much more important than the significance of the results themselves! **You will also have to hand in a copy of your Stata code (do- and log-files).** You should clearly annotate each step in the do-files.

Summarize your findings in the **conclusion** and provide the reader with a short outlook. You can derive policy implications from your thesis or point out the need for further research on some specific questions.

For all parts of your master's thesis, it holds that you have to base statements and assessments on arguments and not on simply referring to sources that advance this specific view.

4.6 Appendix

Make sure to integrate calculations, tables, graphics, etc., necessary for the understanding of your paper in your main text. Only use an appendix for information that is not essential for the understanding of the text, but may be of interest for the reader. The appendices should be listed in the table of contents. You have to tell the reader when to refer to which appendix. To do this, include a reference to the appendix ("see Appendix 1") at the relevant place in the text. Scrutinize whether an appendix is really necessary.

4.7 List of References

The list of references has to contain all references included in your paper. References not included in the text should not be included in the list of references. Generally, the list of references of a master's thesis should contain at least 30 entries.

Order publications alphabetically by author. If you used more than one publication by a single author, you have to list the publications chronologically according to the dates of publication. Should an author have more publications within the same year, distinguished them by small letters (e.g. Slemrod, 2006a, and Slemrod, 2006b). The key to a good list of references is consistency in design and complete presentation of all relevant information (all authors, complete title, year of publication, if applicable edition, volume number of the journal ...). Here are some examples:

- **Articles in an academic journal:**
  Buettner, T., M. Overesch, U. Schreiber and G. Wamser (2012). The Impact of Thin-Capitalization Rules on the Capital Structure of Multinational Firms. Journal of Public Economics 96, pp. 930-938.
- **Working papers:**
  Ruf, M., and A. Weichenrieder (2013). CFC Legislation, Passive Assets and the Impact of the ECJ's Cadbury-Schweppes Decision. CESifo Working Paper No. 4461.
- **Chapters in edited volumes:**
  Persson, T. and G. Tabellini (1995). Double-Edged Incentives: Institutions and Policy Coordination. In: Grossman, G. und K. Rogoff (editors), Handbook of International Economics, Vol. III., Elsevier, Amsterdam.
- **Books:**
  Slemrod, J. and C. Gillitzer (2014): Tax Systems. MIT Press, Cambridge (MA, USA).
- **Web pages:**
  Daniel Davies (2016): Gaps and holes: How the Swiss cheese was made. Published on April 8, 2016, http://crookedtimber.org/2016/04/08/gaps-and-holes-how-the-swiss-cheese-was-made/, retrieved June 22, 2016.

4.8. Declaration of Authorship

Every thesis has to contain a declaration of authorship signed by the student. You could use the following phrasing:

I affirm that I wrote this master's thesis without any unauthorized third-party support. I indicated all used references and resources. I referenced all quotes and citations properly. I have not previously presented this work to another examination board and I have not yet published it.

5 Formalities

5.1 References

The **careful documentation of sources** is crucial for an academic paper. Whenever you draw on the work of another person or institution with new thoughts, you must document your source (try to cite the author who has expressed it first). You do not have to cite standard knowledge from textbooks or scripts. The relation between the reference and your own reasoning should be apparent from the context. Often this requires an additional explanation, for example, "A critical review of some of the most common empirical methods used to measure the magnitude of tax evasion can be found in Slemrod and Weber (2012)."

Use short citations, i.e. the Harvard citation system since this is standard practice in economics. In the text, refer simply to the last name of the author(s) followed by the year and, if necessary, the precise page number. Then there is no need for a footnote. For example:

- An alternative approach is discussed by Boadway et al. (1998). The authors show that ...

- … (see Wolff 2010).
- The pioneering study by Feldstein (1976) found a…
- Whinston (1983, p. 16) shows that…

If you want to make **comments or add explanations** in addition to the reference, use a footnote. In particular, you can use footnotes to give an example to a general statement, or to point out a fundamentally different opinion, which is not further investigated. Your reader should understand the text without reading the footnotes. If a footnote refers to a word, place the footnote behind this word; if it refers to a sentence, place it after the full stop. If an entire paragraph is based on a reference, you can clarify this with a footnote at the end of the paragraph (e.g. "See Desai et al. (2004)."). Each footnote is a complete sentence.

Verbatim quotations are usually unnecessary and you should not use them to avoid formulating your own expression. Therefore, use verbatim quotations **very sparingly** and only where the author makes an especially memorable statement. Verbatim quotes are to be marked with quotation marks. If you remove or modify words in a quote, you have to label this change. Identify minor omissions by two points (one word) or three points (two or more words). If your thesis is in German, you do not have to translate English text when using verbatim quotations.

In the case of verbatim quotations, always specify the relevant page number within the source that you are citing. In the case of indirect quotations that relate to a specific part of the text also specify the page number. This is not necessary when summarizing the main findings of a source.

5.2 Figures, Tables and Equations

Number all **figures and tables** consecutively (e.g., Table 1, Table 2, Figure 1, ...). You have to refer to each figure or table in the text. Tables and graphs should be included in the body of the paper.

Do not use screenshots of tables (e.g., regression results) from the original article, but type them yourself. This allows you to only present the information that is relevant for your thesis. You can copy figures that contain specific data from the article (but quote the source!). If you have created a graph or table by yourself, then clarify it by "Source: own calculations" (possibly supplemented by "on the basis of ..."). State the data sources that you have used to compile graphics and tables.

Tables and figures should have a caption. Explain their content in the text. Think about appropriate units, e.g. use percentages (it is often easier to understand a number as 2.3 percent rather than 0.023).

Use a formula editor (integrated in all regular word processing programs) to write **equations** by yourself. Never use screenshots of equations from the article. All equations should be indented and numbered. Since your thesis should be understandable without reading the original article, you must clearly define all the **symbols and variables** that occur in the equations. Make sure that the reader can understand everything without looking at the original papers that you discuss in your thesis.

6 Literature Research

You must base your thesis on academic literature, which is mostly in English in the field of economics. To find relevant literature you can use for example Google Scholar or EconLit. Also, the list of references of your starting literature may help you to find further relevant articles.

Make sure that you use the most recent version of a paper. If you find an interesting working paper, check if it is already published (e.g., on https://ideas.repec.org or the author's homepage). You can find published articles in the "Electronic Journals Library" on http://www.ku.de/bibliothek/. Try to assess the quality of any

work before using and citing it, for example by looking at journal rankings (e.g., Handelsblatt) or the impact factor.

We wish you every success with your master's thesis!

Alexander Danzer, Dominika Langenmayr, Simon Wiederhold