How To Write a Thesis

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The purpose of this document is to give some advise on how to write a MScthesis, with some comments on how I personally view the role as an advisor. I hope to answer common questions most people ask. Make sure you know these guidelines before asking me.

First you need to get fully familiar with the university's rules and requirements for the thesis. These have to be met. A good way to make yourself familiar with the format is to look at old theses. Keep in mind that the grade is an indicator for quality.

Deadlines

Make sure you know all the relevant deadlines. You should plan to do most of the work well ahead of the deadline. Most good theses are handed in well in advance of the deadline.

Document Structure

Everybody writing a thesis should focus on the fact that they are presenting and analysing an economic problem of some kind. Everything in the thesis should be focussed on that particular economic question you are looking at. You get no points for your random musings on the universe. The language and structure of your discussion is the most important part of your thesis. All good theses have been rewritten several times. Iteration is the name of the game. One group member should write the first try at a section, which is criticized and rewritten by another member. A good thesis looks like an academic paper. The main challenge is to convey the message in the least amount of space possible. You should focus on the issue at hand and only include in your thesis what is absolutely necessary. We have seen many excellent theses of 25 pages of main text and tables (excluding references and appendices) and 60 page theses excluding appendices that were not particularly good. Remember that writing short and concisely is hard. It can not be done the day before the deadline.

The thesis should be organized and written with a similar format and structure as a high quality academic paper. One way to help you structuring your thesis is to select the most relevant high quality published academic paper in the literature and try to organize your thesis structure similarly. Alternatively, look at good past theses.

A typical structure of an empirically oriented thesis is

- Abstract: Short and concise. We study THIS. We do it like THIS. We find THAT. We conclude THAT.

- Introduction. Set the stage, overview the paper, highlight the results.

  - What is the problem to be studied?
  - Why is it important?
  - What is your contribution?
  - How are you proceeding to address the issue?
  - Summarize your results.
  - Organization of the rest of the thesis.

- Background and Literature. The section fleshes out the background. Provides the institutional detail. Expand on point one and two of the introduction. (What is the issue and why is it important). Review the existing academic and professional literature on the topic.

  May want to consider subsections on

  - Model and theory. Formal model, tools to analyze the issue.
  - Empirical methods. What statistical methods, what tests.

- Data. Source, how collected, definitions of variables. Include a table of summary statistics, for example including correlation matrices of variables.

- Empirical Results. Description of the different tests and results of the tests. Discussion of the results in relation to the issues you are analyzing. May consider subsections on different results.

  When discussing the empirical results, it adds a lot if you refer back to earlier sections, in particular the theory and existing literature.

  In this section you should only include summary tables of the results, and as few of them as possible. *Only* the results necessary for your discussion should be in the main text. Details and alternative calculations should be put in appendices. Think also whether it is possible to construct a summary table where you refer to several tables in the appendix for full details.

- Conclusion. Sum up what you set out to show and the extent to which you showed it. That is: Summarize the issue you investigated, how you did it, whet your results are. What are the implications of your results for researchers, practitioners, policy makers? Are there limitations or shortcomings of your results? Do you see any directions for future research?

- Bibliography. Include references to all works cited in the thesis. Do *NOT* include references to works not cited.

- Appendices. You should always ask yourself if a result/table belong in the main text or could with advantage be put in an appendix.

- Footnotes – are useful animals.

Abstract

When the thesis is completed you have to rewrite the abstract to summarize, in 100 words, the whole contents of the thesis. What do you do? What do you find? Do not plan to wait until you have finished the thesis with writing the abstract. Forcing yourself to summarize the contents of your document at every stage in the process will help you. For the initial outline, the abstract can be one sentence. Expand on this as time goes along.

Thesis Contents

Your thesis is not a review of basic statistics or basic financial theory. The potential readers know OLS and the basic assumptions necessary for regressions to yield valid inferences. The readers also know how to perform and compute a standard t-test, F-test or Z-test. Either do not include these basics, or put them in an appendix. However, special issues or special techniques that are particular to your thesis or the data that you examine needs to be presented and discussed in the body of the thesis. So you may state "We are using OLS to run this regression. However the data shows heteroscedasticity so we adjust the t-stat using the ... technique." In the same vein, you may assume that the reader knows basic finance theory. For example, deriving and explaining the CAPM should not be in the body of the thesis, it can be in an appendix, if at all.

Literature review

When going over the relevant literature it should *never* just be a list of papers where you summarize each paper with one paragraph per paper. This kind of summarizing papers is fine for your own use, to keep track of what was done where, but the idea of a literature survey is that you should identify the *issues* relevant for the problem. You can be writing: "...x(1980) and y(1985) argues that the agency problem is rubbish, but z(1990) and q(1995) points to the potential for signalling models to explain...." You should *not* be writing:...
x(1980) says....
y(1985) says...
z(1990) says...
q(1995) says...
Besides being extremely boring, this method of writing does not serve to sum up the economic problem you are trying to analyze in a good way, and it does not show your ability to take information and aggregate it.

Your goal is to in a few words as possible sum up all the reader needs to know to have a perspective on what is coming in your analysis.

Language

Theses should preferably be written in English. I will accept work written in Norwegian, but I strongly recommend that you write it in English. Your own experience in formulating this type of work in English will be valuable to you in your later career. It will also be valuable for you to be able to give your prospective employers your thesis in English.

The different stages

A 3 page outline

Objective: Brief definition of the problem. The main practical questions that you need to answer is: Is my project feasible, and can it be completed in a reasonable amount of time?

Content: Description of the main issue, why it is important, how to address it and whether it is feasible at first examination. Within the thesis structure outlined above, you need to complete part of the introduction and part of the literature review (a few of the main references) as well as which data you plan to use and whether you think it is available. Include also the bibliography for the papers you cite and the papers you plan to review and refer to. A first version of the abstract is necessary.

A preliminary report (10-20 pages)

Objective: You need to complete the introduction, the literature review (all the important relevant references), a preliminary version of the model and method parts as well as precisely define the data you need and where you can find it. Outline how you are going to proceed to complete the thesis. Include a full bibliography. Expanded versions of abstract, and revised and substantially completed sections on models, methods, data. Often it is advisable to run a prototype analysis on a very limited data set.

The final thesis

Content: Fully flesh out all the components of the structure. Basic finance and statistics in appendix only. Only include in main text what is absolutely necessary in terms of finance theory and econometric methods. Rewrite the introduction and abstract to reflect your results. Of course, once you start writing up your results, you will find that you may want to revise the theory and methods sections as well.

If you have large appendices it is possible to include these as electronic documents enclosed with the thesis.

Data collected for the thesis should be enclosed in electronic form with the thesis.

Sources for reference material

In order to analyze the economic question you have identified you will need to find the status of our knowledge of this problem. You will need to find academic working papers, newspaper articles, practitioner oriented articles, academic journal articles, books, what have you. Finding the relevant material is a very unstructured process. A very important step is that you attend the session provided by the library on how to use the library and its resources.

When you are looking for relevant academic works there are some obvious sources. Your textbooks will provide references to good starting points, classical articles, summary articles etc. From there you follow the relevant references.

There are a number of journals which provide *surveys* of a given topic, which are worth looking through to see if you find some surveys matching your needs. Notable such journals are *Annual Review of Financial Economics*, *Annual Review of Economics*, *Journal of Economic Perspectives* and *Journal of Economic Literature.*

A useful way to search when looking for recent academic papers on a given topic is to find a "classical source", a paper *on that particular topic* that is often cited, and use the possibility in e.g. Google Scholar to find *what papers reference this particular paper*. Looking at the more recent papers that reference the classical paper is likely to yield recent work which looks at the same issue.

Another place to find recent work is the *Financial Economics Network* database at

`http://www.ssrn.com`. Loads of recent, unpublished papers. Use the search feature.

Databases: Jstor, Econlit, and other databases which allows you to source through journals and practitioner oriented sources.

Academic journals in finance

Top finance journals: Journal of Finance, Review of Financial Studies, Journal of Financial Economics, Journal of Financial and Quantitative Analysis, Review of Finance.

Top journals with some finance articles: American Economic Review, Econometrica, Journal of Political Economy.

High quality academic finance journals: Journal of Banking and Finance, Journal of Financial Markets, Journal of Financial Intermediation, Journal of International Money and Finance, Journal of Money, Credit and Banking, Journal of Empirical Finance, Financial Management, European Financial Management.

Practitioner oriented finance journals: Financial Analysts Journal, Journal of Applied Corporate Finance, Journal of Portfolio Management.

Interacting with your advisor

The process of doing the thesis you should think of as evolving a document, the current version of which you use to get feedback at different stages. Think in terms of the three stages discussed above. You should set yourself deadlines for each of the three stages, your advisor is not going to do it for you.

The first you need to do, is to have thought about the economic problem you will analyze. To do this you need to find research papers, articles and books relevant for this topic. Then you have to *WRITE DOWN* your problem formulation, how rough it may be, and discuss it with your advisor. This is the basis for a three page proposal. This three-page report, which you hand in at the beginning of the semester, is then to be used to discuss with your advisor the specifics of your chosen problem to analyze, how to proceed.

After having agreed on the three page proposal you should shoot for a preliminary report two months before the final deadline. In this report you should have identifyed literature relevant for the problem, structured it, and also thought about data collecting. This should be a basis for a preliminary report, which you can use as a basis for discussing with your advisor how to proceed. Any problems with the data? Do you have a problem formulation that is doable? What more do you need to think about in terms of models? etc.

During the remainder of the semester you should be working towards a final draft. You should plan on having a final draft ready three weeks before the final deadline. Then you should spend the final weeks polishing the draft. Ask yourself questions like: Is this material *really* necessary for answering the question posed? Is this the *best* way of ordering the sections? Can I *rewrite* this part to make it .. shorter? .. clearer? ..less confusing? .. more relevant? This kind of polishing need some time, in particular you should put the thesis away for a week and then get back to it to look at it with a fresh mind.

Some practical information

Handing in material

- The preferable way of reading is still hardcopy. But in these covid times that is becoming less practical. The alternative is to send the current version of the thesis in pdf (adobe acrobat) format (**NO** *word* or *excel* files).

- Any material should have the project title, names and emails of the group members at the top of the first page.

- Feedback will not be forthcoming on work handed in a day or two in advance of a deadline. You need to give your advisor ample time to read what you give him.

- The more polished the document you hand in, the more likely you are to get constructive advise.

  In particular, the document **must** include, even if very incomplete.

  – Your name(s).

- A thesis title.
- The executive summary stating what the problem is.
- The introduction, with (at least) two things filled out
  * Stating what the research issue is, even if you are just saying the same as the executive summary.
  * Telling the reader what is in the rest of the document, in particular the document structure.
- Section numbers that allow the reader to see the structure of the document.
- If you give references, you need to give the actual bibliograpic reference at the end of the document.
- Tables/Figures/Results should be explained. The explanations should be careful. A table and figure should include text that allows the reader to understanding it without referreing to the text. See any academic paper.

- You should never just throw random numbers at your advisor and ask him to make sense of them. You need to yourself explain what is being done, present the results in a coherent manner, and give an interpretation of what you have done.

Availability

- You need to set up an appointment by email. There are times when people are away.

  If you want feedback on the final version of your thesis you need to give it to your advisor well before the deadline. A week before the deadline feedback is unlikely to be forthcoming in time for you to make substantial changes.

Email

- If you send emails concerning the thesis, state the word thesis, the thesis name and the group members early in the email.