

SCIENTIFIC WRITING

Tips for writing Bachelor, Seminar or Master Theses at the
chair of Prof. Dr. Christoph Spengel & Prof. Dr. Philipp
Dörrenberg

Disclaimer:

This document is not a sample solution that automatically guarantees an excellent thesis grade. Rather, these tips are a structured selection of useful advice and techniques how to write scientific papers. Following these guidelines is not necessarily always optimal. The writing style and structure of any scientific assignment should always be appropriate for the addressed topic and the employed methodology. Within the area of business taxation, the required writing styles still vary significantly. Hence, students should use these tips in dependence of the assigned topic, personal preferences and capabilities.

Table of Contents

1. Scientific Writing	4
1.1 What is Scientific Writing?.....	4
1.2 Scientific Writing at the University	4
1.2.1 Bachelor's Thesis	4
1.2.2 Seminar Thesis.....	5
1.2.3 Master's Thesis.....	5
1.3 Normative vs. Empirical Work	5
2. Components of a Scientific Paper	6
2.1 Research Question.....	6
2.2 Structuring a Scientific Paper	6
2.2.1 Table of Contents	6
2.2.2 Introduction.....	8
2.2.3 Main Section.....	8
2.2.4 Conclusion	8
2.3 Formalia	8
3. Literature Search	9
3.1 Reading and Evaluating Literature	9
3.2 Literature Acquisition: Overview of Search Engines and Journals	9
4. Data Analysis and Specifics of Empirical Papers	11
4.1 Empirical Paper	11
4.2 Data Acquisition: Overview of Databases	11
5. Writing a Scientific Paper	13
5.1 Content of Text Sections.....	13

5.2	Scientific Writing Style	13
5.3	Writing Text Sections.....	14
5.4	Revision.....	15
Appendix: Checklist for Scientific Writing		16

1. Scientific Writing

1.1 What is Scientific Writing?

When writing a scientific paper at the chairs of Professor Spengel and Professor Dörrenberg, the principles set out in this handbook as well as in the guidelines must be followed. Scientific work requires to deal independently with a specific topic. The goal of a scientific paper is to answer a previously defined research question. The research question is determined in consultation with the thesis's supervisor. To protect the intellectual property of others and to avoid plagiarism, the use of literature must be clearly identified following the [guidelines of the chairs](#). A research paper must meet scientific and stylistic requirements. Scientific requirements are comprehensibility, reliability and validity of the results. Stylistic requirements, on the other hand, are grammatical correctness, writing style, and comprehensibility of the work. The requirements and procedures for writing scientific theses are discussed and illustrated in the following chapters.

1.2 Scientific Writing at the University

In principle, bachelor's, seminar, and master's theses can be completed at the chairs of Professor Spengel and Professor Dörrenberg. When writing a thesis, students are supervised by a research assistant of the chairs. Students can choose between qualitative and quantitative research questions and topics (see also chapter 1.3). In addition, theses can be written in German or English.

1.2.1 Bachelor's Thesis

A Bachelor's thesis is remunerated with 12 ECTS and comprises 20 pages. The topics are based on practice-relevant research questions as well as the contents of the courses TAX 303 and TAX 450 (B.Sc.). Topics are provided by the respective supervisors and assigned according to students' preferences in a fair and transparent procedure. The structure and focus within a topic can be set individually in consultation with the responsible supervisor. Depending on the topic and previous knowledge of the student, it is possible to work on literature-based, qualitative research questions or to use archival data to answer (descriptive) empirical questions.

1.2.2 Seminar Thesis

Preparing a seminar thesis is formally required before writing the master's thesis in the Mannheim Master in Management (M.Sc.). The seminar thesis is rewarded with 6 ECTS and comprises 15 pages and a final presentation. Topics for the seminar are provided by the supervisors and allocated according to the seminar participants' preferences.

1.2.3 Master's Thesis

The successful completion of the Mannheim Master in Management (M.Sc.) requires writing a master's thesis. The master's thesis is remunerated with 24 ECTS and comprises 50 pages. At the tax chairs of Professor Spengel and Professor Dörrenberg, students can write their master's thesis on research questions in corporate taxation and tax related topics. Master's theses can be methodologically versatile; empirical and analytical as well as qualitative and normative work is possible. The topic including a research question and some introductory literature is proposed by the students themselves. A master's thesis at the chairs Spengel and Dörrenberg should deepen the understanding of a topic in taxation. Students can benefit from the flexible timing that the tax chairs offer.

1.3 Normative vs. Empirical Work

Qualitative (normative) research involves collecting and analyzing non-numerical data (e.g., text, video, or audio). The goal of qualitative research is to gain a deeper understanding of a research problem by using insights from previous literature and theory. Qualitative research questions at our chairs cover a wide range of issues in national and international business taxation. Tax reforms, changes in tax and accounting legislation (at the OECD, EU, or national level), or judgments concerning tax matters (by the European Court of Justice or national courts) can be discussed and evaluated based on normative principles, legal considerations, or economic effects. Moreover, qualitative research can analyze firms or their financial statements regarding tax or tax-related topics.

In contrast, quantitative (empirical) research involves collecting and analyzing numerical data (e.g., firm data). Empirical research questions explore cause and effect relationships, i.e., these papers try to answer the questions “What is the effect of X on Y?” or “What happens to Y if we change X?”. In addition to analyzing (causal) relationships, it is also possible to answer a question purely descriptively using numerical data. The correct methodology and the

availability and quality of the required data are important for quantitative work. Empirical research questions in business taxation can investigate the effect of a change in taxation, a new tax reform or a change in tax or accounting legislation on business decisions and/or firm behavior (e.g., “What is the effect of an increase in corporate taxes on firms' investment decisions?”).

2. Components of a Scientific Paper

2.1 Research Question

The core of a scientific paper is the research question. It sets the paper's focus and states its research goal. A good research question is an open question that cannot be answered directly with "yes" or "no". The research question must be precisely formulated and of thematic relevance. In the introduction of the scientific paper, the research question is introduced and motivated. If the research question is not already given by the supervisor, it should be formulated while familiarizing with the topic. The research question must be finalized at the latest before writing begins. It forms the text's golden thread, traverses through the outline, and facilitates the literature search. A scientific paper should contain only content that contributes to answering the research question.

2.2 Structuring a Scientific Paper

2.2.1 Table of Contents

The structure of a scientific paper is outlined in the table of contents. A good table of contents represents the work's common thread. Its goal is to clearly depict the line of thought and the focus of the scientific work. Chapter headings must be formulated precisely and independently. Each heading should allow the reader to classify the topic. The size of the text in chapters and sections that are at the same level of the table of contents should be equally weighted.

The following tables of contents serve as examples of successful outlines:

Qualitative (normative) Bachelor's Thesis regarding the topic: „Financing neutrality through an allowance for corporate equity (ACE) – A critical analysis of existing ACE regulations in the EU“

Table of Contents

Index of Abbreviations

1. Introduction
2. Theoretical Framework
 - 2.1. The Debt-Equity Bias in the Corporate Tax System and its Consequence
 - 2.2. Available Corporate Income Tax Reform Options to address the Debt-Equity Bias
 - 2.2.1. General Reform Options
 - 2.2.2. Allowance for Corporate Equity (ACE)
3. ACE Regimes in the EU
 - 3.1. Description of the ACE Regimes in the EU Member States (2021)
 - 3.1.1. Belgium
 - 3.1.2. Cyprus
 - 3.1.3. Italy
 - 3.1.4. Malta
 - 3.1.5. Poland
 - 3.1.6. Portugal
 - 3.2. Critical Assessment
4. Conclusion

Quantitative (empirical) Master's thesis regarding the topic: “Real effects of CFC rules after ATAD implementation in the EU: an empirical analysis”

Table of contents

Index of tables and figures

Index of abbreviations

1. Introduction
2. Institutional background
3. Literature and hypotheses
 - 3.1. Prior literature
 - 3.2. Hypothesis development
4. Research design and data
 - 4.1. Empirical strategy
 - 4.1.1. Subsidiary level
 - 4.1.2. Group level
 - 4.2. Data sources
 - 4.3. Descriptives
 - 4.3.1. Subsidiary level
 - 4.3.2. Group level
5. Empirical results
 - 5.1. Subsidiary level
 - 5.2. Group level
 - 5.3. Robustness checks
 - 5.4. Limitations
6. Conclusion

2.2.2 Introduction

The introduction outlines the work's motivation, the research question, the objective and the relevance. The introduction should arouse the reader's interest. Its main task is to present the underlying research problem. In addition, the introduction provides an overview of the topic and the following course of the scientific work. The introduction should briefly outline the methodological approach. If necessary, the introduction serves to delimit the topic and to justify it. Content explanations or discussions are not part of the introduction and belong in the main section.

2.2.3 Main Section

The main section answers the research question and constitutes the bulk of the paper. The main section starts by explaining the terminology, the background, and legal regulations that are essential to solve the research problem. In the following existing literature is analyzed and evaluated. Depending on the type of paper, this part varies in length. While the literature part is rather brief in quantitative work, it is the heart of the paper in qualitative work. In qualitative work, an independent evaluation and further development of the findings (theoretical analysis) follows. In quantitative work, evaluating and interpreting the data sources are the focus of the main section (empirical analysis).

2.2.4 Conclusion

The conclusion briefly and concisely summarizes the paper's results. It takes up the research question and draws a conclusion. The conclusion classifies the results systematically. It is not allowed to present new results in the conclusion. Generally no literature has to be cited since the findings summarized in the conclusion are the author's own work.

2.3 Formalia

In addition to the correctness of the content, the scientific work must comply formally with the guidelines of the chairs. A table of contents and, if applicable, an index of figures, tables and abbreviations must be prepared for each thesis. In addition, it is mandatory to ensure correct and consistent citations and to include a bibliography at the end of the work. For a detailed description of the formal guidelines of the chairs Spengel and Dörrenberg, please refer to the [guidelines for writing scientific papers](#).

3. Literature Search

3.1 Reading and Evaluating Literature

Preparing, reviewing, and evaluating relevant literature is indispensable for a scientific paper. Working with good literature has a great influence on a thesis's quality. General criteria for good literature are the relevance for the topic, the actuality, and the quality of the literature. The introductory literature usually serves as the starting point of the literature search. It helps to narrow down the topic and to identify relevant keywords. Subsequently, further literature should be searched and arranged systematically. Important findings should be documented. For this purpose, citation programs such as Citavi, Zotero or Jabref are suitable.

Tips and criteria for literature research:

- **Relevance:** Identify relevant literature by searching for keywords and by searching backwards or forwards. Classify the literature systematically. It is often sufficient to only read the abstract, the introduction, and the conclusion to get an impression of the literature's fit. The following literature types qualify for scientific work: monographs, journals, collections, grey literature (e.g. working papers; NOTE: although they are usually most recent research, they should be evaluated more critical than already published work), legal texts, judgement texts and internet sources.
- **Actuality:** Be mindful to use the most recent state of research. Outdated legal texts or editions, which no longer correspond to the current state, should be treated with caution. "Old" sources can, however, still be relevant, but when using them the context of their time should be taken into account.
- **Quality:** Publications from highly ranked journals are generally of good quality (see also chapter 3.2). However, this does not mean that only A-published work is citable. Published theses are not citable.

3.2 Literature Acquisition: Overview of Search Engines and Journals

The following search engines and databases can be used to search for literature. For some of these search engines and databases, an account is required. In these cases, you can find detailed instructions on how to register on the [website of the library](#).

- UB Uni Mannheim (especially for monographs, miscellanies, journals...)

- ABI/INFORM Collection, Business Source Premier, EconLit (international papers)
- Google Scholar, EconBiz, SSRN (especially for grey literature)

The following list provides an overview of high-quality journals in the field of business administration and taxation and related research areas. The list serves to simplify the search for reliable sources. This does not mean that articles in journals not listed cannot be used.

- **Econ Journals:**
 - Journal of Public Economics
 - Journal of International Economics
 - Quarterly Journal of Economics
 - American Economic Review
 - Journal of Political Economy
 - Review of Economic Studies
 - Review of Economics and Statistics
 - Journal of the European Economic Association
 - European Economic Review
 - Applied Economics
 - Journal of Business Economics
- **Tax Journals:**
 - National Tax Journal
 - International Tax Journal
 - International Tax Review
 - World Tax Journal
 - Corporate Taxation
 - European Taxation
- **Accounting Journals:**
 - The Accounting Review
 - Journal of Accounting Research
 - Journal of Accounting and Economics
 - Contemporary Research in Accounting
 - European Accounting Review
- **Finance Journals:**
 - Journal of Finance

- Journal of Financial Economics
- Review of Financial Studies

4. Data Analysis and Specifics of Empirical Papers

4.1 Empirical Paper

Empirical work answers a research question by collecting and analyzing numerical data. The type of data used can be primary data (self-generated, e.g. surveys) or secondary data (from databases). Secondary data differs further in its level of aggregation and its structure (e.g. panel data, time series and cross-sectional data). Secondary data is the most frequently used data in business research.

Reviewing the existing literature is also important in quantitative research. It is of interest which empirical studies on the topic already exist (or currently do not exist) and what data and methodologies have been used. Research hypotheses regarding expected (causal) relationships can be developed based on previous literature. Thoroughly reviewing the empirical literature can also help to decide on an appropriate methodology. It can furthermore provide insights into available data. Data availability should be ensured at an early stage as it is crucial for empirical work. To answer the research question the data is formatted and analyzed. Statistical software programs such as STATA, R, Python and Excel can be used. After performing the calculations and analyses, the results should be interpreted and evaluated with regard to related studies.

4.2 Data Acquisition: Overview of Databases

The following databases can serve as a starting point when searching for data:

- **Eurostat**
 - A European Union database that provides comparable macro data.
 - Access via the browser: <http://ec.europa.eu/eurostat/web/main/home>.
- **World Bank**
 - The World Bank Database contains data on the global development of countries worldwide.
 - Access via the browser: <http://data.worldbank.org>.

- **Compustat North America/ Global/ Bank/ Segments**
 - A database from Standard & Poors that includes fundamental data on companies as well as, for example, (historical) share prices and ratings.
 - Access via Wharton Research Design Services (WRDS): <https://wrds-www.wharton.upenn.edu/>.
- **Center for Research in Security Prices (CRSP)**
 - The database mainly contains data from the U.S., including, among others, those on stocks, indices, funds and inflation
 - Access via WRDS (see above).
- **ExecuComp**
 - Sub-database of Compustat North America, which maintains historical executive compensation data for U.S. companies.
 - Access via WRDS (see above).
- **International Brokers' Estimate System (I/B/E/S)**
 - The database mainly contains historical data regarding analysts' forecasts of earnings, cash flows and long-term growth.
 - US data from 1975 and international data from 1987.
 - Access via WRDS (see above).
- **OECD**
 - The OECD database provides a wide range of macroeconomic data and statistical surveys of OECD countries.
 - Access via browser: <https://data.oecd.org/>.
- **Orbis**
 - The database includes data on over 400 million companies worldwide, including fundamental data, analyst forecasts, ratings and ESG factors.
 - Operation of the database is carried out by Bureau van Dijk
 - Access via the university library website: <https://www.bib.uni-mannheim.de/en/resources/databases/details/?libconnect%5Btitleid%5D=86&cHash=6163b6ee4eb1e254a6fd6bf7eeb6ce0b>.

5. Writing a Scientific Paper

5.1 Content of Text Sections

Producing scientific texts is an intellectual achievement. When reading a scientific text, the reader should be presented with thought through content and structure. The structure should be clear and comprehensible supporting the common thread. The content should present the work's scientific findings. Findings should be derived by discussing previous literature, empirical results or claims of other authors. Paraphrasing (indirect citation; the statement of a third party is written in one's own language) or in the case of legal texts and short statements direct quotes (content is taken over word-for-word and marked with quotation marks) can be used to cite previous work. Trivial statements, explanations and one's own findings are not cited. Claims that cannot be proved by existing literature must be justified. The author must discuss the paper's methods, the scope of literature and sources, the research question and conclusions. Key terms must be defined or explained clearly and should be assigned to a theory or discourse if appropriate. Redundancies in the text must be avoided.

Guiding the reader through the text is recommended. This can be done once in the introduction or consistently at the beginning of a chapter. It is, however, important to keep the reader's guidance short and to avoid redundancies.

5.2 Scientific Writing Style

Writing a scientific paper requires a deep knowledge base. Scientific writing is about presenting the method used and its results in a coherent text. The scientific writing style implies a clear and factual expression with high information density. It is not the goal of a scientific text to sound as complex and difficult as possible. Rather, a scientific text should elaborate complex content and present it as simply as possible. As a result, the text should be as comprehensible as possible even for a reader who is not familiar with the subject. Nevertheless, terms that are common in the research field do not have to be defined.

The following features characterize the scientific language:

- Abstraction
- Objectivity of statements
- Selectiveness of the mode of expression
- Precision of statements

- Differentiation
- Orientation towards facts
- Use of technical terms and definitions
- Creation of argumentative references
- Manifold evidence of statements
- Usage of the active form
- Short to moderate sentence length

Another important component of scientific writing is the linkage to scientific literature and prevailing opinions. Scientific statements have to be related to existing literature and have to be embedded in professional discussion contexts and outline patterns. In addition, a differentiated view should be taken. In addition to a single author's opinion, the most important opposing opinions must also be presented. Logical markers and structure words such as "nevertheless", "although", "but", "therefore", "hence" and "while" help to show connections between arguments. On the other hand, filler words ("essentially", "actually", "of course"), unnecessary complication of words and double expressions ("active cooperation") must be avoided.

5.3 Writing Text Sections

When writing the paper we recommend to proceed along the following scheme:

1. **Planning:** Roughly plan the structure of the paper. Determine the chapter headings, structure the paragraphs, and prepare keywords for the content. Create a text skeleton.
2. **Fine structuring:** Fine structuring is the intermediate step between planning and drafting. It serves as an orientation for the subsequent drafting. Plan every section based on structural elements (entry/exit, arguments, examples). Examples of argument patterns are:
 - Sequence: introduction, 1st argument, 2nd argument, conclusion.
 - Logical chain: introduction, 1st argument, following: 2nd argument, conclusion.
3. **Raw texting:** Draft the text. Pour the prepared content into the structure developed during planning and fine structuring. If possible, write without interruption in so called sprints, i.e., write for several minutes in one piece. After that, correct the paragraph and continue iteratively.

4. **Finalize:** Finetune the text. Delete redundancies, update footnotes, sources and references, improve the sentences grammatically and stylistically.

5.4 Revision

After completing the paper, allow enough time (about half of the writing time) for proofreading and submitting the paper. The following procedure for proofreading can be followed:

1. **Read** through the text at a steady reading pace and mark conspicuous passages. Do not read on-screen or work in detail (e.g., sentence structure, word choice). Answer the following questions: How does the text affect me as a whole? What initial impulses for change do I register? How do I feel addressed as a reader?
2. **Check content and structure.** Which passages are inconclusive? For each individual section and paragraph, question the extent to which it contributes to answering the analysis question and to achieving the objective.
Now insert the results from steps 1 and 2.
3. **Revise the wording.** Pay attention to the sentence length. Shorten long-winded passages and add logical markers and structure words to ensure the flow of the text. Check the comprehensibility of the text. Ensure the consistent use of tenses.
4. **Correct spelling and punctuation.** Check the consistency of citations, the labelling of tables and figures and the introduction of abbreviations.

We recommend having a third person proofread the paper. Please refer to the [guidelines for scientific papers](#) for the submission formalities.

Appendix: Checklist for Scientific Writing**The Paper**

- Refers to the research question
- Has a clear and logical argumentation pattern
- Provides necessary background information
- Transitions well from one idea to the next
- Acknowledges different points of view
- Is intended for a specific audience and uses information and language purposefully

Structure**The Introduction**

- Attracts the attention of the reader and motivates the topic
- Introduces the topic and indicates the discussion that leads to the paper's topic
- Clarifies the objective of the paper
- Explains the procedure to reach the objective
- Outlines the organizational structure of the paper
- Includes the problem statement, the objective, and the course of investigation.

Every Section

- Contains only one idea
- Supports the argument

The Conclusion

- Summarizes the key findings
- Explains the significance and application of ideas
- Does not contain any new findings

Structure of the Sections**The Introductory Sentence**

- Explains the main idea of the section
- Builds the bridge to the research problem
- Is clear and concise
- Can serve as a link between sections

Details

- Are logical and rational
- Are objective, not emotional or judgmental
- Support the introductory sentence
- Maintain a logical sequence
- Contain their own analysis with reference to the topic at hand

The Closing Sentence

- Repeats the key message
- Connects the main details

Every Sentence

- Is clearly written and not too complex
- Is relevant (otherwise it can be deleted)
- Is congruent in itself
- Is as specific as possible and avoids unprecise wording
- Is precise

The Section

- Is not too short to present the idea
- Is not too long so that the reader does not get lost in it
- Uses specific details and analysis to reinforce the argument
- Is diversified and varies sentence structures

General Checks

- The paper was checked for grammar and spelling errors
- The citation is correct and consistent
- The paper has been formatted correctly
- The paper was read aloud before it was turned in to catch any final inconsistencies
- Feedback was solicited