

Otto-von-Guericke University Magdeburg Faculty of Economics and Management

Bachelor Thesis

Title of Thesis Subtitle if necessary

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1. Guidelines - Delete this chapter before submitting your thesis

DELETE THIS CHAPTER BEFORE YOU SUBMIT YOUR THESIS -AS WELL AS THE COMMAND, THAT INCLUDES THIS CHAPTER IN THE MASTERFILE!

Your Introduction will be your chapter 1!

1.1. Formalities

- Formal requirements for seminar works/ theses at the chair must be met and are part of the grade
- It is mandatory to use our Latex template for the written part of the thesis as well as our powerpoint template for the presentation
- We recommend you use TexMaker to work in Latex: https://www.xm1math.net/ texmaker/
- Scope
 - Seminar papers: ca. 15 pages
 - Bachelor Thesis: ca. 40 pages
 - Master Thesis: ca. 60 pages
- Extensive material belongs in the appendix and the letter "A" is placed before the sequential numbering (The appendix is not included in the page count to meet the required scope)
- Seminar papers must be submitted to the chair as a single copy in ring or adhesive binding
- Final theses must be submitted to the responsible examination office in two hardbound copies in book binding
- In addition to the official deposit copies in the examination office, the paper must also be submitted in original format (Latex) and as a PDF file including all attachments by email or by USB stick to LS_ifm@ovgu.de
 - The subject of the mail should be designated as follows: "Matriculation number, bachelor's/master's/ seminar thesis", e.g. 123456, Bachelor's thesis
 - Appendices: If applicable, regressions, source code, statistics, etc. in respective folders; "Sources" folder for all digital literature sources used

1.1.1. Requirements for the design

- Outline with logical structure as a basis for the elaboration of the text
- Subdivisions must consist of at least two items; no more than three levels; reflect importance of chapters
- The shown outline in this template is an example and not binding
- Work concludes with affidavit (in German)
 - an assurance signed by the graduate that he/she has prepared the thesis independently and withour using sources other than those indicated ("Legally binding")

1.1.2. Notes

- Write in technical and scientifically accurate language, use short and factual sentences, avoid enumerations in the form of bullet points but include them in the text
- The train of thought of the work must be recognizable
- Use impersonal form and do not address the reader directly
- Use figures and tables to visualize the text and clarify the subject matter
- The final chapter simply summarizes the work briefly and then evaluates the results in terms of the objective
- Avoid internet sources
- The information gathered (research findings, literature, etc.) should be presented graphically or in tabular form and presented in the text
- The quality of the images is important. If scan quality is not sufficient, it is advisable to draw
- Motivate your work at the beginning with stylized facts
- If there are many abbreviations in the text, the paper should be supplemented with a list of abbreviations
- Google Scholar (scholar.google.com) or Google Books
- Structure and outline must meet scientiic requirement
 - Logical order of processing

- Processing of the essential aspects or weighting of the aspects according to their importance for the topic
- Judged are:
 - Factual elaboration of the topic
 - Development of own thoughts and reflections
 - Elaboration of open problems, decelopment of the question and presentation of the results as well as unresolved questions
 - Justification and evidence of the statements
- Plagiarism will not be tolerated (such as copying, or adopting the work or essential ideas of others without citing them properly)
- If the submitted work reveals that substantial parts of it are plagiarized, this will result in the termination of the thesis 5.0 etc.
- Tio 1: Only write down what you know about! If you do not understand something, e.g. concepts theories, do not simply pretent
- Tip 2: Start with the literature of the supervisor

1.2. Literature Search

Here is some information on how to find relevant literature.

General Information

- Use scientific literature! i.e. mainly journal articles in peer-reviewed journals.
- If the study area is very new, "gray literature" may also be used, e.g., SSRN http://www.ssrn.com
- Also note monographs (e.g. dissertations) and anthologies
- Daily newspapers, encyclopedias and magazines are generally not citable
- Use original publications and the latest edition for books

Useful datasources

- Use the library to search for literature! E.g. using the website http://www.ub. ovgu.de/ (see Figure 1.1)
- Access to electronic journals http://rzblx1.uni-regensburg.de/ezeit/ezb.phtml

	•	11 NO		
NEU HIER?	NUTZERKONTO	LEHRENDE	PUBLIZIERENDE	VERANSTALTUNGEN / KURSE
Willkommen auf de	er Website der Univers	itätsbibliothek		FAQ bzgl. Corona
Literatursuche				Ihre Meinung
UBfind Bibliotheksk	katalog (OPAC) Verbundka	atalog (GVK) Datenbanken	(DBIS) eJournals (EZB)	> ist uns wichtig!
Suchbegriff(e)			Suchen UBfind	Ihr Buchwunsch
Aktuelles				Erwerbungsvorschlag (<u>>Webformular</u> oder <u>>PDF</u>) für neue Werke
Wichtige Informationen	in Bezug auf die COVID-19-Pa	andemie und die Maßnahmen	der Universitätsbibliothek	Sonstige Veranstaltungen
Lockdown: Schließung d	ler HR für den Publikumsverk	ehr vom 16.12.2020 bis 31.01	1 20211	>im Patentinformationszentru

Figure 1.1.: The website of the library

Source: http://www.ub.ovgu.de/

- Books in the holdings of the university library or in GBV https://opac.uni-magdeburg.de/cgi-bin/wwwopc4menu
- Various databases, e.g. EBSCO Host or Business Source Premier (see Figure 1.2) http://rzblx10.uni-regensburg.de/dbinfo/fachliste.php
- Books can be ordered as interlibrary loans and as copies from non-subscribed journals through GBV http://www.ub.ovgu.de/benutzung_u__service-p-3579/benutzung_u__service-p-3580 fernleihe_lieferdienste/fernleihe.html
 - Order duration 1-4 weeks
 - Please note the schedule of fees and charges
- Many books are now available online http://www.springerlink.com/

1.3. Citations

1.3.1. How to cite

- Quotation: Is a literal adoption of excerpts from a text. The quoted material must be reproduced accurately and without alteration (both in meaning and in language)
- Paraphrase: Is rendering of excerpts of a text according to the sense of the text. The wording may be changed (something may also be omitted). However, the meaning must not be distorted
- Quotations and paraphrases: Serve as evidence and provide excerpts from a text for discussion

	Zeitschrift ISSN	suchen Erweiterte Suche						
_		of Banking and Finance						
	Online-Verfügbarkeit: Volltex	tzugriff						
	OOO Zu den Volltexter	n: Jg. 27 (2003) - Jg. 85 (2017) 🚺						
)	OOO Zu den Volltexter	n: Nationallizenz : Jg. 1 (1977) - Jg. 26 (2002						
2	bereitgestellt von:	Universitätsbibliothek Magdeburg (einschl. Medizinis Die Volltexte sind für Angehörige der Universität Maç						
	Online-Verfügbarkeit: Nicht li	izenziert für die restlichen Zeiträume						
	OO Sur Homepage der Zeitschrift							
	Allgemeine Angaben zur On	line-Ausgabe der Zeitschrift:						
	Titel:	Journal of Banking and Finance						
	Aktuelle Artikel:	Newsfeed						
E	Verlag / Anbieter:	Elsevier Open Access Policy des Verlages in SHERPA/RoM						
	Fachgebiet(e):	Wirtschaftswissenschaften						
	Schlagwort(e):	Bankwesen Finanzwirtschaft						
	E-ISSN(s):	1872-6372						
	P-ISSN(s):	0378-4266						
	ZDB-Nummer:	1460614-8						
	erste Volltextausgabe:	Jg. 1, H. 1 (1977)						
•	Homepage(s):	https://www.sciencedirect.com/journal/journal-of-ban https://www.journals.elsevier.com/journal-of-banking-						
	Erscheinungsweise:	Volltext, nur online						
	Kosten:	kostenpflichtig						
	Liste der teilnehmenden Instituti	onon, die Velltextzueriff hieten						

Liste der teilnehmenden Institutionen, die Volltextzugriff bieten.

Figure 1.2.: Search result of the journal database

- All statements must be substantiated. Direct and indirect takeovers of thoughts must be identified. Remember to sse sources that are verifiable!
- Plagiarism: Is an unmarked verbatim or semantic copies from other texts.
- At the chair is quoted as follows: Mention the author and the year of publication in the body text and always for direct quotations as well as for any quotations from books additionally the page number! Do not use a footnote for quoting!
- Footnotes may be used for further brief explanations

Common mistakes that lead to point deductio

- Write whole paragraphs and then only indicate the source at the end! For longer paragraphs, you must quote several times even if the same source is used several times!
- Use only one source for a chapter. Always use multiple sources per chapter!
- Follow the content of a source over multiple paragraphs to reflect its content. Use multiple sources and summarize them together
- Page number not given for books and direct quotations. In these cases, always give the page number!
- Write paragraphs with less than six lines. Combine paragraphs that are too short with other paragraphs.

Footnotes

- If footnotes can be used for annotations
- However, they should only be short and not used excessively ¹

Direct citations

- Avoid direct quotations in scientific papers if possible! At most for important definitions or statements.
- Mark direct quotes in italics in the text
- For direct quotes indent over several lines (1.5 cm) and single line.
- Never write whole paragraphs and then only indicate the source at the end! For longer paragraphs, you must quote several times even if the same source is used several times!

¹That means, you should only give little additional information. You can also cite sources in footnotes.

Indirect citations

- Indirect citations: Do not fill several pages without paragraph separation and then provide a reference at the end.
- The source must be cited at the beginning of a paragraph. For longer paragraphs, citations must be made several times even if the same source is used several times!
- Quotations from English sources do not need to be translated
 -> Maintaining meaning often problematic in translation

Bibliography

- All sources are to be listed bibliographically in the bibliography
- Include only literature actually cited in the bibliography!
- Sort directory alphabetically by author
- Cited sources in electronic form are to be saved on the data carrier
- The sources are listed in the bibliography according to their publication type

1.3.2. Citation Style

The citation style must be consistent and conform to the guidelines of the American Psychological Association (APA), known as APA Style. Some examples are given below but you can find the complete list online.

Citing within the Text

You can cite a work within the Text. For example, Dixit and Pindyck (1994, pp. 6-9) give a brief introduction to investments under uncertainty. This is the so called narrative citation.

Citing at the end of the Text

You can also state a fact and cite at the source at the end of the senctence. For example, it is well known that under uncertainty, there is an incentive to delay the investment (Dixit & Pindyck, 1994, pp. 152-161). This is the so called parenthetical citation.

Three or more authors in the same source

In the case of three authors or more, only the first author is cited and quoted as follows: Lukas et al. (2019) discuss the optimal M&A investment strategies under uncertainty.

Several sources for the same statement

You can also have several sources to support your argument: However, there is a critical discussion that the negative investment uncertainty relationship does not always hold and that it depends on the measure that is chosen (Lukas & Welling, 2014; Sarkar, 2000; Wong, 2007).

1.3.3. Appearance in the bibliography

Citing correctly within the text is not enough. All sources have to appear in the correct style in the bibliography. Here are some typical examples for different types of sources. Check the bibliography to see how the different types are cited there.

Books

Fama and Miller (1972) is an example for a book. Note that you have to state the exact pages when you cite from books!

Book sections, Contributions to anthologies

You can also cite book sections, i.e., a contribution to an anthologie, such as Grossman and Hart (1982).

Journal articles

Journal articles such as Jensen and Meckling (1976) are the most common source.

Working Papers

Early drafts of research is sometimes published as a working paper such as Dari-Mattiacci et al. (2011)

Newspaper article (author known)

Newspaper articles such as Gassen and Füllbier (2009) are not scientific sources but can be used to motivate your thesis, e.g. in the introduction.

Newspaper article (author unknown)

Sometimes the newspaper does not state the author so that you have to cite the newspaper directly as in FAZ (2009)

Internet Sources

Internet sources such as EZB (2011) are often databases or other sources that cannot be cited in print. Note that even though journal articles are available online, they must still be cited as journal articles as indicated above.

1.4. Managing your citations

We recommend you use a citation manager for your sources (e.g. Citavi or Mendeley) and cite using Biblatex as done in the examples. Here are some recommendations to get started.

- Install Citavi and import your first sources: https://www.urz.ovgu.de/en/citavi. html
- Citavi lets you export a .bib-file with all your sources, which you put in the "Bibliography" folder of your project. If you do not want to change the settings of this guideline, you have to rename the file to "LaTeXLiterature.bib".
- All sources have a short code to cite them. You can start citing now by using the commands

\textcite{CODE} and \autocite{CODE}

illustrated above.

- To use biblatex you have to configure TexMaker to use the backend "Biber" for building your citations and the bibliography. You can do this in the TexMaker settings as shown in Figure 1.3)
- The PDF file and the bibliography are build seperately. That means, you have to build your PDF, then run Biblatex and finally build the PDF again to see the results. Instead, you can add all these steps to your quickbuild command, which will typically use. Can choose this option in the TexMaker settings as well as sown in Figure 1.4)

1.5. Referencing to the Appendix

You can find the raw data used in the study in Table A.1 of Appendix A.

1.6. Figures

How to insert a figure:

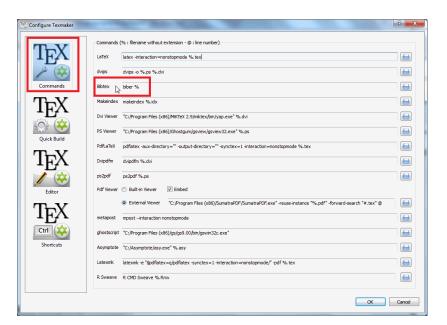


Figure 1.3.: Configuring TexMaker to use Biber to build the citations

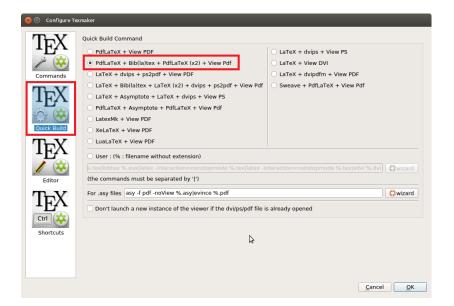


Figure 1.4.: Configuring TexMaker to update your citations within the quickbuild command

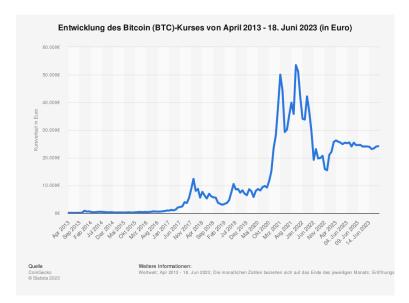


Figure 1.5.: Bitcoin price development from 2013 to 2023

Source: CoinGecko (2023)

In the text you then need to refer to the figure by using the reference you defined while including the figure.

... as can be seen in Figure 1.5. Please remind to **ALWAYS** state the source of your figure! It is also necessary to describe your figures and explain them in your text. It is not enough to just insert a figure but not explain it. The same applies to tables, algorithms and equations.

1.7. Tables

How to insert a table:

Table 1.1.: Example of a Table

а	\mathbf{b}	с
1	2	3
4	5	6
7	8	9

Source: XYZ (2020)

That is how you insert a Table. Now I can also reference this table, as you see in Table 1.1 there are all numbers from 1-9.

1.8. Formulas

How to include a formula:

$$NPV = \frac{R_t}{(1+i)^t} \tag{1.1}$$

Please make sure to insert the variables in the List of symbols at the beginning.

1.9. Pseudocode

How to write pseudocode:

Algorithm 1 Euclidean Algorithm						
1: function Euclidean(a,b)						
2: Input: Two integers a and b						
3: Output: The greatest common divisor of a and b						
4: if $a = b$ then						
5: return a						
6: else if $a > b$ then						
7: return EUCLIDEAN(a-b,b)						
8: else						
9: return Euclidean(a,b-a)						
10: end if						
11: end function						

1.10. Good to know

In order to use the Latex template you need to define the Thesis_ifm_main.tex in the Options as Masterfile. (See Thesis_ifm_main.tex ToDo comment at the top)

Here are some commands that are helpful. In order to make them work, you have to include an "infront of them.

1.10.1. Structure

You can already see how to create a new chapter and section (one level lower that chapter). And now we've also created a subsection. You shouldn't need more level than these. Respectively, three levels (chapter, section, subsection) should be totally sufficient and you should avoid using further subsections.

1.10.2. Formatting of text

Text alignment

This is how you align your text on the left.

This is how you center the text.

This is how you align your text on the right.

Line and Page break, adjust text

This is how you do a line break.

This is how you insert a line break if there is no text in the line.

There are two ways to insert a new paragraph:

That is one way to start a new paragraph.

This is the other way. You should use this way within a chapter as the other has too much spacing between the paragraphs.

Now this is a command to insert a page break. Only do page breaks in front of a chapter if there are less than three lines written text on the last page.

Formatting of the font

If you write in german, and you have a direct citation you may use "this commands," in order to insert the quotation marks. Otherwise you just need "to use this command" both, befor and after the citation.

italic **bold** <u>underlined</u>

2. Introduction

The purpose of this chapter is to define the problem, motivate the topic and describe the objective of the thesis. It also sets out the structure of the thesis with a brief description of each topic. The next chapter contains the "Literature Review", in which the existing literature dealing with the topic of the thesis is systematically reviewed and described. Here, the models used in the sources, the results and the relevance for the thesis should be briefly described. Afterwards, in the chapter "Theoretical Background" XXX

3. Literature Review

This chapter reviews the literature relevant to the thesis. It is best to start on a broad level and to narrow it down in the end of the chapter.

4. Theoretical Background

In the following a few basic tasks are explained. And also note, to never have a subchapter directly below the header of the chapter, but instead always write a small paragraph.

5. Mathematical Model

6. Case Study

7. Results

8. Discussion and Limitations

9. Conclusion

Bibliography

- Dari-Mattiacci, G., Onderstal, S., & Parisi, F. (2011). Inverse Adverse Selection: The Market for Gems (No. 2010-04), University of Amsterdam. https://doi.org/10. 2139/ssrn.1661090
- Dixit, A. K., & Pindyck, R. S. (1994). Investment Under Uncertainty. Princeton University Press.
- EZB. (2011). Jahresbericht 2011. Retrieved September 27, 2012, from http://www.ecb.int/pub/pdf/annrep/ar2011de.pdf
- Fama, E. F., & Miller, M. H. (1972). The Theory of Finance. Dryden Press.
- FAZ. (2009). Wird aus der Finanzkrise eine Bilanzkrise? Die Krisenangst könnte zu falschen Therapien führen.
- Gassen, J., & Füllbier, R. U. (2009). Wird aus der Finanzkrise eine Bilanzkrise? Die Krisenangst könnte zu falschen Therapien führen.
- Grossman, S. J., & Hart, O. D. (1982). Corporate Financial Structure and Managerial Incentives. In J. J. McCall (Ed.), *The economics of information and uncertainty* (pp. 107–140). University of Chicago Press.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. Journal of Financial Economics, 3, 305–360. https://doi.org/10.1016/0304-405X(76)90026-X
- Lukas, E., Pereira, P. J., & Rodrigues, A. (2019). Designing Optimal Dynamic M&A Strategies under Uncertainty. Journal of Economic Dynamics & Control, 104, 1–20. https://doi.org/10.1016/j.jedc.2019.04.006
- Lukas, E., & Welling, A. (2014). On the Investment-Uncertainty Relationship: A Game Theoretic Real Option Approach. *Finance Research Letters*, 11(1), 25–35. https: //doi.org/10.1016/j.frl.2013.07.006
- Sarkar, S. (2000). On the Investment-Uncertainty Relationship in a Real Options Model. Journal of Economic Dynamics & Control, 24(2), 219–225. https:// doi.org/10.1016/S0165-1889(99)00005-6
- Wong, K. P. (2007). The Effect of Uncertainty on Investment Timing in a Real Options Model. Journal of Economic Dynamics & Control, 31(7), 2152–2167. https: //doi.org/10.1016/j.jedc.2006.07.002

A. First Appendix Example

Name	Age	Grade
Kant	26	1.3
Meyer	19	2.7
Schulze	22	1.7

Source: XYZ (2020)

B. Second Appendix Example

The design of the questionaire is as follows...

Eidesstattliche Erklärung

Der Verfasser erklärt an Eides statt, dass er die vorliegende Arbeit selbständig, ohne fremde Hilfe und ohne Benutzung anderer als die angegebenen Hilfsmittel angefertigt hat. Die aus fremden Quellen (einschließlich elektronischer Quellen) direkt oder indirekt übernommenen Gedanken sind ausnahmslos als solche kenntlich gemacht. Die Arbeit ist in gleicher oder ähnlicher Form oder auszugsweise im Rahmen einer anderen Prüfung noch nicht vorgelegt worden

(Unterschrift des Verfassers)

.....

Max Mustermann

Ort, Datum

Notes