

How to write your thesis

at the

Department of Financial Markets

Topics

At the Department of Financial Markets, topics for Bachelor's and Master's theses are assigned every semester. In general, there are two different types of topics:

1. Topics announced in advance

These are topics from the specific research area of a staff member at the Department. If such predefined topics are available, they will be announced on the website no later than one month before the application deadline (see below).

2. Individual topics

For each candidate, we aim to find an individually suitable topic that matches the candidate's interests. In principle, we supervise only topics in the areas of Asset Pricing, Asset Allocation, and Digital Finance. Applicants are encouraged to think about possible topics in advance. However, it is not a problem if topic preferences cannot yet be formulated very concretely. This is normal. The researchers working at the Department are well able to assess whether a topic is suitable for a thesis.

Deadlines

Candidates may submit their application by August 31 if they wish to write their thesis during the winter semester.

Candidates may submit their application by February 28 if they wish to write their thesis during the summer semester.

Applications submitted at a later date may be considered if sufficient capacity is still available.

Applications can only be submitted via email to markets@kit.edu.

Documents

The application documents should include:

- Current transcript of records
- Short CV
- Short statement containing the following information:
 - Reasons why the candidate is interested in writing a thesis at the Department of Financial Markets
 - Information on prior knowledge and qualifications (in particular, courses taken at the Department of Financial Markets or other departments of the Institute for Finance - FBV)
 - Indication of whether the candidate is interested in a predefined topic or an individual topic and, in the latter case, whether rough topic ideas already exist (not mandatory!)

Time line

After the application deadline, all candidates will be informed of the outcome of their application within a few days. Successful applicants have one week from notification to accept the offer. If no response is received within this period, the position will be offered to a candidate on the waiting list.

Theses must be officially registered with the examination office no later than the end of the first month of the semester (end of October in the winter semester and end of April in the summer semester).

Selection criteria

The following aspects play a role in the selection of applicants:

- Seminars and lectures taken at the Department of Financial Markets
- Seminars and lectures taken at other departments of the Institute for Finance (FBV)
- Prior knowledge in other relevant areas such as statistics, econometrics, macroeconomics, programming skills, and experience with scientific work (e.g. from student assistant jobs)
- Academic performance

What we expect

The topics of our theses are often based on one or more scientific articles, which usually have to be replicated and extended (to an appropriate extent). Any data required for this purpose are generally provided by the Department. The results of the analysis must be presented in an independently written academic thesis and interpreted in the context of the related literature. Bachelor's theses may not exceed 25 pages, and Master's theses may not exceed 50 pages. Further formal guidelines can be found in the document `thesis_template.pdf`, available on the website of the Department. In addition to the thesis, a storage device (e.g., a USB stick) containing the files necessary to replicate the analysis, usually in the form of Python code, must always be submitted.

Besides writing the thesis, we expect candidates to participate in the following activities:

For Bachelor's students: Participation in the course *Financial Economics - Research and Writing*

In this course, we discuss key aspects of scientific work in three blocks:

1) How do I write and document code in Python?

How may I use LLMs and other AI tools in research?

How do I search for academic sources?

2) How do I write an academic paper?

How does LaTeX work?

3) How do I give an academic presentation?

How do I discuss an academic paper?

In addition to these training sessions, a block seminar takes place each semester in which candidates present their topics and document the progress of their work during the semester (intermediate presentations).

In another block seminar at the end of the semester, all candidates must present their thesis in a 30-minute presentation. In addition, each thesis is discussed by another candidate in a 10-minute presentation. This generally takes place after submission of the thesis. Presentations may be scheduled earlier if candidates wish to submit their theses ahead of time.

The exact dates of the five blocks will be announced at the beginning of the semester.

For Master’s students: Participation in the *Paper Seminar* run by the Department of Financial Markets and the Department of Financial Engineering and Derivatives

The two departments jointly organize a biweekly seminar in which academic papers by other researchers are presented by PhD students and discussed with the group. Each session lasts between 90 and 120 minutes. The papers to be discussed are usually sent by email about one week before the next meeting.

Master’s students are expected to attend the meetings regularly and actively participate in the discussions. Shortly after submitting their thesis, they are expected to present the results of their own Master’s thesis in one of the subsequent meetings in the form of an academic presentation.

Supervision

Each candidate is assigned a supervisor who discusses and develops the topic with the candidate at the beginning of the thesis period. This supervisor is also available as a contact person throughout the writing period. Minor questions can be clarified by email, and meetings can be arranged whenever necessary. There is no predefined number or schedule of meetings; instead, meetings are arranged individually. The intended supervision workload is 0.3 weekly semester hours (i.e., approximately 15 minutes/week \times 14 weeks = 3.5 hours per thesis) for Bachelor’s theses and 0.7 weekly semester hours (i.e., approximately 30 minutes/week \times 14 weeks = 7 hours per thesis) for Master’s theses.

In addition, general questions can be discussed with Prof. Thimme during the group meetings (see section “What we expect”), where sufficient time is provided for discussion. Furthermore, each meeting includes a time slot for open questions in which general (as opposed to topic-specific) questions may be asked.

Grading

The quality of the thesis itself is the most important factor in grading. The goal of a thesis is for students to engage scientifically with a topic over an extended period and demonstrate their ability to conduct academic research (see also the competence goals stated in the FAQs below). Therefore, impressions gained from the other activities may also be considered in the grading process if they indicate particular competence in academic work. This includes, in particular, the quality of presentations, the ability to answer questions, and active participation in group meetings.

FAQs

Why all of this?

AI tools have become extremely powerful, and their capabilities are expanding rapidly. On the one hand, prohibiting the use of these tools is difficult to enforce, and on the other hand, we do not wish to do so, as they have become an integral part of the research process. We do not want to ignore this fact when training our students in academic work.

However, in the age of AI tools, the thesis alone is less informative about a candidate's academic abilities than it used to be. This is problematic because assessing these abilities is precisely the purpose of the thesis. We do not want to test how skilled a candidate is at using AI tools. In the worst case, the thesis would merely reflect how much money a candidate spends on subscriptions to LLM providers. This strongly resembles paying a ghostwriter in the pre-AI era.

Am I allowed to miss sessions occasionally?

When accepting the offered thesis position, candidates must submit a *Declaration of Intent* confirming that they will register the thesis and regularly participate in the respective group meetings.

Due to illness or scheduling conflicts, candidates may occasionally be unable to attend individual sessions. In such cases, supervisors must be informed as early as possible.

The final presentation must always be given. In the event of illness or other circumstances that make attendance impossible on the scheduled day, a replacement date must be arranged.

What are the competence goals of a Bachelor's thesis at your department?

The competence goals of the Bachelor's thesis at the Department of Financial Markets are the same as those stated in the module handbook:

- The student can independently work on a relevant topic in accordance with scientific criteria within the specified time frame.
- He/she is in a position to research, analyze the information, abstract and identify basic principles and regulations from less structured information.
- He/she reviews the task ahead, can select scientific methods and techniques and apply them to solve a problem or identify further potential. This is basically also done under consideration of social and/or ethical aspects.
- He/she can interpret, evaluate and if required, graphically present the obtained results.
- He/she is in a position to clearly structure a research paper and communicate in writing using the technical terminology.

What are the competence goals of a Master's thesis at your department?

The competence goals of the Master's thesis at the Department of Financial Markets are the same as those stated in the module handbook:

- The student can independently handle a complex and unfamiliar subject based on scientific criteria and on the current state of research.
- He/she is in a position to critically analyze and structure the researched information as well as derive principles and regularities.
- He/she knows how to apply the thereby achieved results to solve the task at hand. Taking into account this knowledge and his/her interdisciplinary knowledge, he/she can draw own conclusions, derive improvement potentials, propose and implement science- based decisions.
- This is basically also done under consideration of social and/or ethical aspects.
- He/she can interpret, evaluate and if required, graphically present the obtained results.
- He/she is in a position to sensibly structure a research paper, document them and clearly communicate the results in scientific form.

Is there a predictable path to achieving a grade of 1.0?

No. A grade of 1.0 is awarded if a candidate has achieved the competence goals mentioned above to an excellent degree. "Risk-mitigation strategies" are not helpful and do not guarantee a particular grade. The term refers to tactics in which candidates seek approval from their supervisor for every aspect of their work. There is no definitive answer to the question, "What do I need to do to get a 1.0?" However, there are always reasons for a particular grade. These reasons are explained to the candidate in an individual meeting after submission of the thesis and completion of the final presentation.