Finance Bachelor's Thesis Fall 2021 Kickoff

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September 13, 2021 – 13:15-14:45

Zoom

Aalto University
School of Business

Pre-course assignment

- Submit pre-course assignment in MyCourses
- Pre-assignment required for registration. Also register in Sisu!

- We will make the groups after today’s session. You will receive a message from your advisor this week

Deliverables and dates

Data Session	September 15, 13.15 - 15.00 Zoom (see Materials)
Research proposal	September 29, 13:15-16:30
Midterm meeting	~November 1-5
Final thesis submission deadline	December 7, 17:00
Presentation & Discussion	December 14 and 15, 13:15-18:00

Agenda

- Bachelor’s thesis
- Practicalities
- Working on thesis
- Sources of data
- Grading
- Research career

Bachelor’s thesis

What is a thesis?

- Independent piece of research
- Goal: prepare academic research paper
  - Quality, structure, layout
  - 15 to 30 pages (typically around 20) – *Longer doesn't mean better!*
- Tasks
  - Student: research question, methods, data, analysis, write-up, management
  - Advisor: advice and guidance

What is not a thesis?

- Industry report, casual analysis of phenomenon, copy/paste material from cases, consulting work, ...
- Report explaining various facets of broad topic area without own analysis
- Example: report describing current developments in mutual funds

- Thesis should provide some new analysis and findings, not just compilation of existing information

Learning outcomes

- Generate new knowledge
- Develop analytical skills
- Prepare justified and reasoned reports and briefings
- Gather information from different sources
- Consolidate understanding of existing work
- Deliver findings clearly and logically
- Derive conclusions and implications from analyses

Practicalities

Course requirements

- Research plan: written and presentation
- Mandatory meeting with advisor
- Final thesis
- Seminar
  - Presentation of own thesis
  - Discussion of another student’s thesis
  - Active participation in discussion
- Maturity test (kypsyyskoe in Finnish)

Courses and grading

- 28C99901 Bachelor’s Thesis, 10 cr., grade 0-5
  - Output: submitted thesis
  - Detailed rubric below
- 28C99902 Bachelor’s Thesis Seminar, 2 cr., grade 0-5
  - Presentation, discussion, participation
- 28C99903 Maturity Test, 0 cr., pass / fail

Research plan review session

- Wednesday, September 29, 13:15
- Submit written research plan
  - Template on MyCourses
- Briefly present research plan
  - Max 3 minutes
  - No slides required
- Listen to our feedback on your plan! Issues, e.g., ...
  - motivation from literature
  - adequacy of data and methods
  - feasibility in 2-3 months

Presenting research plan is binding commitment to complete thesis this round!

Breaking this commitment without valid reason will have grading consequences!

Research plan structure

- What is your research question?
- How you are going to answer it?
- Contents
  - Preliminary title
  - Clear research question including main hypotheses
  - Means of answering the question (data, methods, …)
  - Key references from high-quality Journals (see list in this presentation)

Mandatory midterm meeting

- Early November (to be agreed with advisor)
- One-on-one meeting with advisor
  - At this point, we plan to have the meeting virtually
- Submit brief (one-page) report containing some original analysis
  - Example: regression table(s)
- Purpose: check that you are on course to complete thesis
- Advisor will contact about scheduling

You can meet your advisor much more than once!
Midterm meeting is minimum requirement

Submitting thesis

- Deadline 17:00 on Tuesday December 7
- Email thesis to advisor and group
  - Reply ALL to your advisor's email
  - Submit single PDF file
- Also submit your thesis and maturity test on MyCourses
  - Advisor will send email with instructions
  - Please also inform yourselves about details here: https://into.aalto.fi/pages/viewpage.action?pageId=35618983

    E.g.: The "eage" submissions to the learning center (library archive) need to be in the PDF/A (-1a, -1b, -2a, or -2b; not -3a or -3b) format.

Seminars

- Presentation day
  - December 14 and 15, 13:15-18:00
  - Required to attend only when presenting and discussing
- Two presentations
  - Present own thesis
  - Discuss another student’s thesis
- Attendance
  - Required, a full day
  - Participate by asking questions

Presentation

- Briefly present your work (max 15 minutes)
  - Practice timing
- Slides: PowerPoint or LaTeX
- Focus: what have you done?
  - What is your research question?
  - How do you answer research question?
  - What is your answer?
  - Do not focus on reviewing existing literature

Discussion

- Max 5 minutes, 2-3 slides
- Critical appraisal of scientific work
  - Point out errors and omissions
  - Suggest improvements and extensions
  - Offer alternative interpretations of results
  - Help audience to understand contribution
- Do not…
  - Summarize thesis (this is presenter's job)
  - Point out typos
  - Repeat how good thesis is

Seminar participation

- Active participation in discussion
  - Quality and quantity of comments matter
- Purpose of seminar
  - Discuss and share ideas
  - Learn collectively
  - Better understand implications of research
  - Get ideas for Master’s thesis

Maturity test

- Tests ability to write in Finnish and understanding of own research
- One-page executive summary of thesis
- Submit it on MyCourses
  - At same time with thesis
- Finnish speakers: in Finnish
- Non-Finnish speakers: in English
- Checked for language and content
- Thesis and seminar grades only after maturity test passed

Working on thesis

Finance as science

- A positivist social science
  - Assumes objective world
  - Interpretations and conclusions based on scientific investigations, not beliefs or norms
- Methodology and approach similar to natural sciences
- Scientific knowledge evolves in cycle
  - Theory is developed
  - Theory is tested empirically
  - Empirical results reveal shortcomings and inconsistencies in theory
  - Theory is revised, tested, revised...

Selecting thesis topic

- Ideal thesis similar to journal article (a strongly related reference paper is very helpful for your orientation!)
  - Critical and validated answer to focused research question
- Good research question is focused, interesting, and implementable
- Many approaches are possible: statistical study, numerical simulation, theoretical modeling, literature review, case study
- Statistical studies by far most common
- Popular option: replicate American study with European data

Broad vs. exact topic

- Research question needs to be exact
  - Can be summarized in one sentence
- Too broad topics: “capital structure”, “mergers and acquisitions”, “stock market volatility”
- Exact research questions: “market reaction to share repurchases”, “stock returns to the acquirer around vertical acquisitions”, “intraday volatility changes around earnings announcements”

Replication studies

- Published article finds certain effect in the US (or somewhere else)
- Replication: investigate if effect exists in an extended sample and/or other market (Europe/Nordics/Finland)
- In general, excellent idea for a bachelor's thesis
- Caveats
  - Data availability
  - Analysis requires long time series not available in Europe/Nordics/Finland
  - Analysis requires advanced technical skills
  - In many cases results are unlikely to be strong enough to generate compelling statistical evidence
  - A work where you have good ex ante reasons to find something but do not is fine
  - A work where you have good ex ante reasons *not* to find anything and do not find anything is less impressive

Pre-testing replication studies

- How do you know whether you can expect find anything?
- You can *pre-test* your hypothesis with relatively little effort as follows:
  1. Assume as strong economic effect as in the original study
  2. Collect information on N and *t*-statistics from the key tests of the original study
  3. Using light empirical analysis, estimate N in the replicate sample
  4. Estimate *t*-statistics in the replicate sample given that standard error is proportional to $1/\sqrt{N}$
  5. Are your results statistically significant at conventional levels?
- Note that in reality the results are generally weaker than this
  1. Publication bias, i.e. original study would likely not have been published had it not had significant results
  2. In many cases, you need to combine different databases. Not all observations exist in all databases, leading to potentially much smaller sample than you think

Choosing studies for replication

- Studies which are more plausible ex ante are more likely to replicate
- Such studies often have simple (rather than convoluted) mechanisms, and the chain of events generating the effect is short (rather than long)
- Simple, somewhat descriptively oriented studies are generally published in other than the best finance journals
  - They can nevertheless be interesting, particularly if accompanied with a proper institutional analysis of the studied relationships

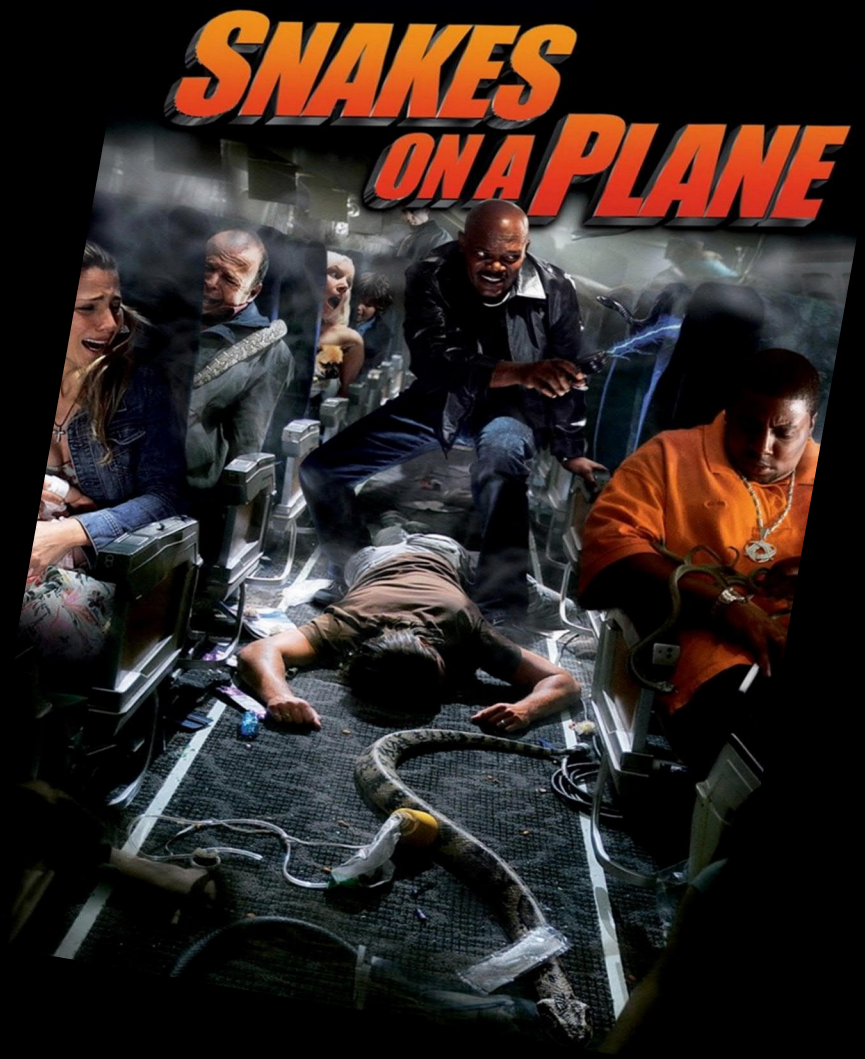
Writing tips

- Thesis should look and feel like published academic article
  - Read articles to learn writing style
- Keep it simple, avoid long and vague sentences and fancy words
- Tables and figures should be self-explanatory
- Use proper English: “can’t” → “cannot”
- Use “I” not “we”
- Present results objectively and agnostically
- See “Writing Tips for Ph.D. Students” by John Cochrane

More writing tips

- Leave plenty of time for write-up
  - Often students focus too much on analysis and too little on writing
- Introduction especially important
  - Present research question AND results briefly and clearly
  - CARS model
- Titles should reveal content clearly

Bad movie titles make good paper titles



Finding information

- Library databases, Google scholar, Wikipedia, www.ssrn.com, ...
- Survey articles (Journal of Economic Perspectives,
  Journal of Economic Literature, and Annual Review of Financial Economics)
- Backward referencing: find one (relatively recent) article and look at its references
- Forward referencing: find pioneering article (one that all articles related to your intended topic cite) and use Google Scholar to find which articles cite it

Finding information, continued

- Published and forthcoming articles on journal web pages
- Relevant financial news on Wall Street Journal, Financial Times, Economist, Kauppalehti, ...
- Previous Master’s and Bachelor’s theses

Journals

- Journals available electronically
- Learning Centre, https://learningcentre.aalto.fi/en/
  - Search for publication by name, directs to relevant database
  - Login to Aalto-Finna for wherever-whenever access to databases
- Leading finance journals: Journal of Finance, Journal of Financial Economics, Review of Financial Studies
- Other good finance journals: Journal of Financial and Quantitative Analysis, Management Science (finance section), Review of Finance
- Leading economics journals: American Economic Review, Econometrica, Journal of Political Economy, Quarterly Journal of Economics, Review of Economic Studies
- Practitioner-oriented journals: Financial Analysts Journal, Journal of Applied Corporate Finance, Journal of Portfolio Management

Sources of data

-> Data session on 15.09.2021 from 13.15 - 15.00

Collecting and organizing data takes way more time than you think
Start data collection as soon as possible

Due to the pandemic, the access to our data room might be limited. We recommend using data from WRDS (CRSP/Compustat) and other databases that are easily available from home (e.g., Kenneth French's data library, AQR factor returns...).

Commercial databases

- Department of Finance subscribes to many research databases
- Market data
  - CRSP: stock prices (USA)
  - Datastream: stock prices, indexes, derivatives, … (international)
- Fundamental data
  - Compustat: annual and quarterly financials (USA)
  - Refinitiv Fundamentals via EIKON (formerly Worldscope): financial data (international)
  - IBES via EIKON: analyst forecasts and recommendations (international)
- Transactions
  - SDC: M&A, equity and debt issues, … (international)

Commercial databases

- Data access
  - Finance Research Lab, 3rd floor of Väre/Arts building in room Q301
    (remote access during the pandemic)
  - Some databases through WRDS online platform, registration required
- See this https://wiki.aalto.fi/display/FINDB for an overview of available data
- And https://blogs.aalto.fi/databases/category/databases-aalto-department-of-finance/ for more information on handling and analyzing data.
- Our data expert can help with data-related issues
  - Breitkopf Nikolas, nikolas.breitkopf@aalto.fi
  - Please attend his data introduction on Wednesday!

Publicly available data

- Organizations
  - World Bank, IMF, statistics bureaus, stock exchanges, ...
  - AQR factor returns
  - Finland has an excellent open data architecture (see avoindata.fi), although few open datasets have direct finance implications
- Researchers
  - Kenneth French: Fama/French (and other) factor and portfolio returns
  - Jay Ritter: aggregate IPO statistics
  - Many others
- Innovative usage of proprietary data sources
  - Sometimes, students get access to relevant high-quality data from their employers or other contacts

Analyzing data

- Choose your favorite tools for data analysis
- Excel, Access, Matlab, R, Stata, SAS, EViews, Gretl, RATS, Python…
- Limited time → limited ability to learn new tools

Grading

Grading

Scale

- 5 = excellent
- 4 = very good
- 3 = good
- 2 = satisfactory
- 1 = sufficient
- 0 = insufficient

Rubric

- Aalto level grading rubric:
  - Problem setting of study (research question and motivation)
  - Contribution to the literature (e.g., high-quality references)
  - Use of scientific methods (e.g., data, tests, and interpretation)
  - Presentation and integration (e.g., form, consistency, and coherence)
- ...extended by punctuality and professionalism
- Final grade is not a simple average of components
- Thesis grading is different from exam grading. “No mistakes” does not imply a 5. An excellent (5) thesis should contain an innovative contribution.
  - Did we learn something new from this thesis?

Thesis (10 cr.) grading rubric

Measurable Attributes	0 – Insufficient	1 – Sufficient	2	3 - Good	4	5 - Excellent
1. Explication of how the study relates to a phenomenon or area of interest within the discipline	Provides a vague (or no) description of the relationship.	Provides some explication of the relationship.		Provides a clear explication of the relationship.		Explicates the relationship in an insightful manner.
2. Specification and limitation of the research problem and questions	Provides very vague description of the research problem and questions.	Provides limited specification of the research problem and questions.		Provides clear specification and limitation of the research problem and questions.		Provides an engaging specification and limitation of the research problem and questions.
3. Review of literature	Reports on earlier literature without connecting it to the research problem and question. and/or fails to identify relevant literature.	Reports on earlier literature without connecting it clearly to the research problem and question.		Reviews earlier literature relevant to the research problem and questions.		Demonstrates critical thinking, creativity and insight in reviewing earlier literature relevant to the research problem and questions.
4. Develops a systematic and logical approach to the inquiry	Provides a vague explanation of the approach to the inquiry; Fails to logically describe planned approach	Describes logically and clearly the research approach		Describes logically and clearly the research approach with a clear justification of the chosen approach above other approaches		In addition to the description for "Good": Explains how the chosen approach fits into existing paradigms of research methodologies and their limits
5. Develops conceptual synthesis	Fails to develop a conceptual structure	Identifies some appropriate concepts and explains what they mean		Clearly identifies appropriate concepts and explains what they mean in the context of the study; Demonstrates a conceptual structure		Develops and applies a clear and consistent conceptual structure through synthesis of other/new concepts or lenses
6. Collects and uses empirical material/data (if applicable)	Fails to clarify what material/data is used or how it is used; or uses inappropriate material/data; or exhibits inappropriate use of material/data	Identifies appropriate material/data and explains how it is used		Clearly identifies appropriate material/data and explains how it is used; Uses material/data is a way that is consistent with the logic of the inquiry and its purpose		In addition to the description for "Good": Identifies problematic issues and limits to the use of the material/data

Thesis (10 cr.) grading rubric

7. Interprets and discusses results; draws conclusions	Provides unclear interpretations and conclusions, and/or provides conclusions that do not logically emerge from the research; Provides no discussion	Makes some interpretations and draws conclusions; Provides little discussion		Provides clear interpretations that emerge from analysis and draws logical conclusions; Identifies some limitations of the results		In addition to the description for "Good": Identifies and discusses problematic issues and limits; Where relevant, provides possible alternative interpretations or conclusions
8. Academic style, language use and readability	Uses non-academic style; inaccurate language use interferes with reading and comprehension; citation format not observed.	Uses language sufficiently accurately and appropriately for comprehension but use of illustrations and examples infrequent and/or not fully competent; citation format not always observed.		Uses appropriate academic language well; minor errors may exist but do not interfere with fluent reading and comprehension; illustrations and examples contribute to the clarity of the arguments; citation format almost always observed.		Produces a thesis that meets academic writing standards; readily conveys meaning; illustrations and examples enhance the clarity of the arguments; citation format consistently observed.
9. Consistency and coherence of the thesis	Text is fragmented and unbalanced; internal links among theory, methods and results are not explicit; problems with headings and paragraph and section structure.	Text is not fully balanced; some key internal links are missing; does not fully form a coherent whole; some problems with headings and paragraph and section structure.		Forms a balanced and coherent whole; some internal linkages are implicit rather than explicit; headings and paragraph and section structure typically support the overall coherence.		Forms a coherent whole with consistent and explicit internal linkages; has a logical flow of argumentation with neat_headings and clearly structured paragraphs and sections.

Thesis (10 cr.) grading rubric

Extension:

- Punctuality and professionalism:
  - Timely and complete submission of the thesis (if you commit at the research proposal meeting)
  - Timely and independent delivery of other mandatory steps, like:
    - submission of the pre-assignment
    - research proposal (written & meeting)
    - mandatory midterm meeting (incl. preliminary results / research report)
    - seminar day
  - Taking professional responsibility, e.g.:
    - have an agenda for meetings
    - answer to emails promptly
    - solicit feedback at correct times
    - professional ethics

Plagiarism

Definition:

- Plagiarism, or unacknowledged borrowing, refers to representing another person’s material as one’s own without appropriate references. This includes research plans, manuscripts, articles, other texts or parts of them, visual materials, or translations (Finnish Advisory Board on Research Integrity 2012, p. 33).
- Plagiarism in scientific and artistic activity may, in addition, take the form of unattributed use of a chart, piece of code, any visual or audio material, or other work. *Plagiarism includes direct copying as well as adapted copying* (Finnish Advisory Board on Research Integrity 2012, p. 33).

Plagiarism

Examples:

- Quotations or word-for-word citing without clear indication
- Minor changes to the source text, for instance, changing a few words or the word order
- Inadequacies in citing and referencing
- Copy and paste
- Direct translation from the original without indicating the direct quotation
- Collusion (making a work produced collaboratively to look as if it had been produced independently or without assistance)
- Autoplagiarism

Plagiarism

Further info:

- You have the responsibility to ask, in case unclear. Your advisor will be happy to help.
- When you submit the final version of your B.Sc. thesis to Turnitin, the programme report will recognize possible intentional or unintentional mistakes and plagiarism in scientific writing and highlights similarities between a submitted text and sources in Turnitin repositories. Highlighted similarities do not necessarily mean plagiarism, but every similarity has to be interpreted in its text context. Independent Turnitin check: https://mycourses.aalto.fi/course/view.php?id=34274
- The full documentation of Aalto University Code of Academic Integrity can be found at: https://into.aalto.fi/display/ensaannot/Aalto+University+Code+of+Academic+Integrity+and+Handling+Violations+Thereof#AaltoUniversityCodeofAcademicIntegrityandHandlingViolationsThereof-3ViolationsagainstCodeofAcademicIntegrity

! The department takes violations very seriously !

Seminar (2 cr.) grading rubric

- Presentation:
  - preparation (incl. slides)
  - quality of content (summary of your research question, motivation from and contribution to the literature, data and methodological implementation, implications)
  - clarity, flow, keeping audience interested
- Discussion:
  - preparation (incl. slides)
  - quality of critical comments
  - clarity, flow, keeping audience interested
- Comments on other students' theses (quantity and quality)

Research career

Summer internships at Department of Finance

- Job
  - Working with faculty on research projects during summer months; exact dates are flexible
  - Possible types of duties:
    - Data collection and organization
    - Literature reviews
    - Programming
- Requirements
  - Primarily finance students in second to fourth year of studies
  - Completion of Bachelor's thesis is plus
- Application
  - Application deadline January 2022
  - Include personal cover letter, CV, and transcript of university grades
- More information
  - See the ad on Finance department webpage
  - Contact Matti Keloharju

Doctoral degree in Finance

- If you enjoy research, consider getting doctoral degree
- Pre-requisite for career in academia, relevant for some private sector careers
- Great career for anybody who appreciates
  - Intellectually very stimulating work and colleagues early on
  - Reasonable flexibility in working hours and location of work
  - Being in forefront of creating something uniquely new (inventor, entrepreneur, artist)
  - Being your own boss
- Salary in line with skill and effort
  - Best graduating students make it to six-figure salaries
  - Potential to complement with additional teaching, research grants and consulting work
- Aalto finance Ph.D. placements include: University of Chicago, London Business School, Ohio State University, University of Miami, Hong Kong University of Science and Technology, Imperial College London, Catholic University of Lisbon, ESCP Paris, University of Luxembourg, Bank of Finland, McKinsey & Company
- If interested, contact Mikko Leppämäki or any other faculty member.
- http://gsf.aalto.fi/

Summary

Summary

- Independent research
- Tight schedule
- Start working immediately
- Make schedule and stick to it

... in particular if you work (full-time) next to writing your thesis.

Reminder: deliverables and dates

Data Day	September 15
Research proposal	September 29
Midterm meeting	Early November
Final thesis submission deadline	December 7
Presentation & Discussion	December 14-15

Reminder: GRADUATE !!!

- When you have completed the courses, which are part of your B.Sc. degree (180cr) according to your official PSP/HOPS, it is time to order your diploma and graduate.
- For more information: https://into.aalto.fi/display/fikandibiz/Valmistuminen.