

Discipline: Accounting

1. Language

English

2. Title

Quantitative Empirical Accounting Research and Open Science Methods

3. Lecturer

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4. Date and Location

Online and in Person

- Online: 06.09.22, 09.09.22, 13.09.22, 16.09.22, all slots 9am – noon.
- In person (Berlin): 05.10.22 noon -07.10.22 noon.

5. Course Description

5.1 Abstract and Learning Objectives

This course focuses on quantitative empirical accounting research, covering theoretical, methodological and technical aspects of this research program. It also introduces students to the concepts of Open Science. In terms of applications, it concentrates on financial and non-financial reporting issues but also touches on some managerial and auditing topics. After this course, participants should

- have a clear understanding about the theoretical foundations of quantitative empirical accounting research,
- know the methodological approaches to and common pitfalls of empirical research designs,
- have become familiar with a collaborative open science workflow using R/Python/Stata and Github,
- know how to execute empirical archival studies, including the usability and inter-operability of different data sources
- and, based on their own research proposal, have received constructive feedback on how to design and execute a viable study in the area of quantitative empirical financial accounting research.

5.2 Content

Empirical research in accounting is taking a leading position in international academic journals. It encompasses different research approaches, ranging from behavioral experimental and field surveys to archival studies. This course concentrates on quantitative empirical archival research in the area of financial accounting but also touches on other empirical methods and fields. Empirical archival research is based on observational data which are either available in pre-structured form or are collected from various sources. These data are then used to describe economic phenomena or to test theoretically predicted cause and effect relationships. Explored topics cover issues like reporting incentives, reporting choice, the interaction of reporting with other aspects of the corporate governance system as well as capital markets and real effect of reporting. In this, reporting entails traditional financial as well as non-financial, sustainability-related reporting.

The theoretical lectures are discussing the economic underpinnings of this research program. The research design lectures focus on the econometrical problems of causal inference based on observational data. The research execution sessions are designed to give students hands-on experience in an open science-oriented empirical workflow. During and in-between the sessions, we will work jointly on a small project, starting with data wrangling and ending with discussing the publication process.

5.3 Schedule (including start and end time)

Virtual Sessions (06.09.22 – 16.09.22)

The virtual sessions consist of “canned” videos and interactive sessions via Zoom. They are organized in four modules.

Module 1 (Tuesday, 06.09.22, 9am – noon)

Theory: Disclosure Theory

- Unraveling
- Cheap talk
- Signaling

Research Design:

- Descriptive versus causal studies
- The counterfactual framework

Execution:

- Data sources
- Software: Github, R, Python, Stata
- The Open Science workflow
- Data wrangling

Joint project:

- Introduction of setting and question
- Data presentation

Module 2 (Friday, 09.09.22, 9am – noon)

Theory: Voluntary versus Regulated Disclosure

- Rationales for regulation
- Optimal accounting standards
- Biased reporting

Research Design:

- From the research question to the research setting
- Identification strategies

Execution:

- Data sources
- Data wrangling

Joint Project:

- Data preparation
- Discussion of potential identification strategies

Module 3 (Tuesday, 13.09.22, 9am – noon)

Joint Paper Discussion I

Research Design:

- Outliers
- Standard error issues

Execution:

- Variable definition
- Exploratory data analysis
- Modeling and testing

Joint Project:

- Sample composition
- Exploratory data analysis
- Discussion of potential identification strategies

Module 4 (Friday, 16.09.22, 9am – noon)

Joint Paper Discussion II

Research Design:

- Assessing robustness
- Researcher degrees of freedom

Execution:

- Power Analysis
- Data visualization

Joint Project:

- Settle on group tasks

In-person Sessions (5.10.22 – 7.10.22)

5.10.2022, 1pm – 6pm

Joint Project:

- Presentation of group solutions
- Discussion of findings and potential next steps
- Getting yourself published

6.10.2022, 9am – 5pm

Workshop:

- Proposal presentations

7.10.2022, 9am – noon

Workshop:

- Proposal presentations

Wrap-Up and Feedback

5.4 Course format

The course consists of a combination of lectures on theory and methodological issues, group assignments, student presentations and group discussions. The objective of the course is to introduce the participants to the state-of-the-art of empirical accounting research and to help them to develop their own research projects. To achieve this, students are asked to submit research proposals (up to 1,000 words) prior to the course. Each proposal will be reviewed, and feedback will be given to students. During the in-person part of the course, students will be presenting their (updated) research plans to the group and will receive additional feedback.

In addition, the course will work jointly on a project over the duration of the course with the aim to practice the skills that are communicated during the course on a real research project. While we start working on this project as a large group, during the break between the virtual and the in-person phase of the course, students will team-up in groups to work on the joint project independently. The group findings will be presented and discussed on the first day of the in-person session.

6. Preparation and Literature

6.1 Prerequisites

The course requires intermediate skills in statistics and econometrics as well as a solid background in financial accounting. Also, the students should be familiar with the fundamental concepts of information economics and asset pricing as well as corporate finance. Topics like OLS regression, contract theory, and arbitrage pricing theory should sound familiar to the participants.

In terms of data science experience, some basic knowledge of a statistical programming language (e.g., Python, R or Stata) is expected. We will be predominantly working with R during the seminar but students are also invited to work with Python or Stata if they prefer. Students that are not familiar with either language are strongly encouraged to work through the opening chapters of “R for data science” prior to attending the class.

6.2 Essential Reading Material

A small reading list containing the two papers that we will discuss in joint paper discussion sessions will be distributed by Aug 22, 2022.

6.3 Additional Reading Material

Textbook on the data science workflow:

Grolemund, G. and H. Wickham (2017): R for Data Science, O’Reilly: <http://r4ds.had.co.nz>.

Textbook on causal inference:

Cunningham, S. (2021): Causal Inference: The Mixtape. Yale Press, <https://mixtape.scunning.com>.

6.4 To prepare

All participants are required to read the papers on the reading list (not the overview/background list!) prior to the course. Students not familiar with either R or Stata have to work through the opening chapters (1-8) of “R for data science”. Every student has to submit a current research proposal (maximum of 1,000 words) by Aug 29, 2022. This proposal can be preliminary but should contain a potential research question, discuss why this research question is relevant and how it fits into the academic literature. In addition, it also should include some concept for a potential research design that might be used to address the research question. Each participant will present his or her proposal in class (15 minutes presentation time, not including discussion).

7. Administration

7.1 Max. number of participants

The number of participants is limited to 20.

7.2 Assignments

Every student has to submit as well as present a current research proposal and participate in the group data assignment. Throughout the virtual part of the course smaller assignments will be offered that students can take in order to demonstrate their class participation.

7.3 Exam

The group assignment will be evaluated as a fail or pass. The grade will be based on the research proposal (20 %), proposal presentation (40 %) and on the active participation throughout the course (40 %).

7.4 Credits

The course corresponds to a scope of 6 LP/ECTS.

8. Working Hours

Learning activity	Hours
Reading the assigned literature	20 h
Preparing the research proposal	40 h
Updating research proposal based on feedback	30 h
Preparing proposal presentation	30 h
Preparing data-based assignment	30 h
Active class participation	30 h
TOTAL	180 h