Department of Management Accounting:

- Prof. Dr. Sabine Böckem (sabine.boeckem@unibas.ch)
- Dr. Andrea Bublitz (andrea.bublitz@unibas.ch)
- Lars Fluri (lars.fluri@unibas.ch)

Management Accounting: Applied Statistics in Finance, Behavioral Sciences and Accounting
(6CP)

Spring Semester 2025

Objectives: A seminar is a course in which you work on your topic independently. The following literature are to be understood as recommendations and not as a task in the narrower sense. Depending on the topic, the literature may cover more material than you can sensibly cover in your seminar paper or less than you should. In all cases, it is desirable that your own research contributes additional material to your work. The purpose of this seminar is to train your ability to work and argue scientifically and to do so on the basis of scientific literature. You will learn how to make a scientifically sound argument based on the tasks provided. In addition, you will train your skills in presenting scientific work both in written and oral form and in providing helpful feedback to the work of other seminar participants

Supervisor: Andrea Bublitz

1 The Role of News Reporting in Behavioral Finance

Building on Hirshleifer's (2015) literature review on Behavioral Finance, this thesis summarizes research on the role of news reporting in shaping investor behavior and market dynamics. The literature review explores key findings on how news coverage and media sentiment influence psychological biases such as overconfidence and herding. By synthesizing these studies, this thesis further identifies implications for investors and regulators and uncovers potential for future research.

Baseline paper: https://doi.org/10.1146/annurev-financial-092214-043752

2 The Impact of Financial News Sentiment on Stock Markets

Based on Calomiris & Mamaysky (2019), this thesis investigates the relationship between financial news sentiment and stock market movements. In a literature review, the thesis demonstrates the predictive power of news sentiment for market dynamics and introduces the relevant tools for sentiment analysis and topic modeling. Ultimately, the objective is to provide insights into how investors and analysts can use sentiment data to make more informed decisions.

Baseline paper: https://doi.org/10.1016/j.jfineco.2018.11.009

3 Linking Social Media Trends to Investor Behavior: Exploring Financial Investment Advice on Reddit

This thesis explores how investment advice shared on social media reflects and shapes investor behavior. In a first chapter, the thesis summarizes the data and methods used by Chen et al. (2014) and discusses their main findings. In a second chapter, the thesis then explores how the methods may be applied to other social media platforms like Reddit and whether findings are expected to replicate or differ (and how so). Ultimately, the objective is to demonstrate how online advice on social media influences financial decision-making and demonstrate research gaps where we still lack an understanding of social media's role in investor behavior.

Baseline paper: https://doi.org/10.1093/rfs/hhu001

Supervisor: Lars Fluri

4 Sentiment Analysis of 10-K statements

A 10-K is a report that summarizes a company's activities over the previous year. You are tasked with creating a database of these 10-K statements of multiple firms using pre-existing code. In a next step, you compute sentiment scores of these statements and analyse how they differ between companies and change over time.

Baseline paper: https://www.sciencedirect.com/science/article/pii/S0736585317305191

5 Machine Learning for Credit Risk Modeling

Develop and evaluate machine learning models to predict credit risk for individuals or businesses. The goal is to learn about data preprocessing and model fitting. You are trying to predict the credit risk as precisely as possible.

Baseline paper: https://link.springer.com/article/10.1023/A:1008699112516

6 AI in Finance and Accounting

Data science, machine learning, and artificial intelligence tools are revolutionizing various sectors, including accounting and finance. These tools require specific domain knowledge and a profound understanding of statistical properties to be effectively applied in these fields. Your task involves applying these methods to a real-world dataset of balance sheet variables from the DACH region for predictive forecasting (the complete dataset will be provided after topics have been assigned). The specific nature of this task will vary based on your proficiency in coding, data science, and machine learning. The goal is to perform data analysis and fit machine learning algorithms on the data set provided.

Baseline paper: https://link.springer.com/book/10.1007/978-3-031-38747-0

Supervisor: Sabine Böckem

In the next 4 topics, the task is as follows: Provide a summary of the paper. Include an intuitively understandable presentation of the method. Then, develop a proposal for how its structure could be applied to another case. What is the business question to be investigated? Which technique is used, and what information is employed?

7 Cost Estimation
Cost estimation is fundamental to many business decisions. Simple historical calculations are often too generic. Therefore, estimation models are valuable. In the basic paper various analytical techniques are employed and compared.

Baseline paper: https://www.sciencedirect.com/science/article/pii/S0925527307000710

8 Insurance Payment Estimates

Insurance financial reports incorporate a wide range of estimates. The paper presents four analytical methods and compares them, considering five types of insurance. Here, one analytical method and one application area should be selected as a basis.

Baseline paper: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3253220

9 Fraud Detection

They build a fraud prediction model using a machine learning approach. Contrary to the literature so far, they use raw accounting numbers instead of financial ratios and ensemble learning instead of logistic regression or support vector machines.

Baseline paper: https://onlinelibrary.wiley.com/doi/full/10.1111/1475-679X.12292

10 Bankruptcy Prediction

In their study, they compare support vector machines, bagging, boosting and random forests in predicting bankruptcy one year prior to the event. They observe a substantial improvement in prediction accuracy compared to other methods, especially if they include complementary financial indicator in the model.

Baseline paper: https://www.sciencedirect.com/science/article/pii/S0957417417302415

General remarks:

In this seminar, you will be working on your topic individually. Each topic will be assigned to a maximum of two participants. The task at hand is to produce your own, individual paper, independently from your co-students.

Format:

For your written paper, we recommend to use the LaTeX format. It can be provided to you after the topic assignment. You can edit it using the original LaTeX program; however, it works with Overleaf or any other TeX IDE compatible system, too.

Proposal:

Once you have found the reference paper/data set you intend to use, and once you have developed an idea of how to analyze it, please submit a proposal (1/2 page), formulating an idea/concept you want to commit to for your seminar paper. Along with the proposal, please also suggest a suitable structure for your seminar paper. Please note that, following the submission of your proposal, there is a one-week processing period. Please consider this in your time planning.

Schedule:

Preliminary meeting	24 February 2025, 14.15 S8 HG 39
preliminary talk	by arrangement
submission deadline of the seminar paper	23 April 2025
feedback talk	by arrangement
presentations	7 and 8 May 2025 (all day)

Assessment:

Your successful completion of the seminar depends on your performance in the following four tasks/aspects:

task/aspect	weighting
written paper	70%
presentation	20%
follow-up paper	5%
oral contribution	5%

Assignment of topics:

When assigning the topics, your preferences will be taken into account as far as possible. To that end, please inform us of your three preferred topics, listing them according to their priority. Submit this priority list to us <u>within three days following the preliminary meeting.</u>