



b
**UNIVERSITÄT
BERN**

Institute for Financial Management

Prof. Dr. Philip Valta Telefon +41 31 684 37 75
Engehaldenstrasse 4 E-Mail philip.valta@unibe.ch
CH-3012 Bern

Empirical Finance

Spring Semester 2024

Sessions: Monday 26.02.2024, 14:15 - 17:00 (Marc Brunner)
Monday 11.03.2024, 14:15 - 17:00 (Marc Brunner)
Monday 18.03.2024, 14:15 - 17:00 (Marc Brunner)
Monday 25.03.2024, 14:15 - 17:00 (Sascha Jakob)
Monday 14.04.2024, 14:15 - 17:00 (Sascha Jakob)
Monday 18.04.2024, 14:15 - 17:00 (Sascha Jakob)
Monday 13.05.2024, 14:15 - 17:00 (Sascha Jakob / Marc Brunner)

Room: UniS, A322

Office hours: By appointment, after the sessions

Course website: KSL
Ilias

Number of ECTS: 6

1 Course content and objectives

This seminar provides students with a toolbox and working knowledge of the main methods used in empirical finance research. The goals of this class are that students learn how to apply the various methods to analyze data sets in finance and to prepare them for the write up of the Master thesis. The seminar reviews some econometric theory, but the focus is on the application of the methods in a finance setting. Econometric topics include linear regression (OLS and Panel) and how to address endogeneity problems. While the first part focuses on corporate finance topics such as capital structure, payout policy, or liquidity management, the second part looks into asset pricing and time series models.

Students are expected to learn basic skills in empirical research on corporate finance and asset pricing:

- Understand the main issues when working with large data sets in finance/economics
- Learn how to use Stata for empirical research
- Develop a deeper understanding of topics in corporate finance and empirical asset pricing
- Generate topic ideas for the master thesis
- Acquire basic knowledge and skills to design and carry out empirical projects (relevant for master thesis)

2 Statistical software

Our statistical software of choice is Stata. We will give you an introduction in the first two sessions and then use it throughout the seminar (in class and for the assignments). The seminar takes place in a room that is equipped with computers that have the software installed. But you may still want to bring along your computer with Stata installed to class.

If needed, the software can be bought here, with a substantial discount as a student: <https://www.stata.com/order/new/edu/profplus/student-pricing/>.

Note that the BE version is sufficient, and that different license periods are available. Depending on whether you plan to write the master thesis at the IFM, it might make sense to buy the annual license¹.

3 Attendance

We expect you to be present during all sessions. If you have a scheduling conflict, please let us know as soon as possible.

4 Course material

All the course material, such as slides, data, and assignments can be found on Ilias. We will announce the course password during the first session. Additionally, you will also find two videos which cover basic probability theory and OLS statistics. Even though we do not expect that you memorize the formulas and are able to prove the derivations, you should be familiar with the concepts and the content.

References to relevant papers are given in the Slides. As further references for the corporate finance part, we recommend the following books:

¹For the master thesis you can also use other statistical software.

- Wooldridge, Jeffrey M., *Introductory Econometrics: A Modern Approach*, 2006, Thomson/South-Western
- Hayashi, Fumio, *Econometrics*, 2000, Princeton University Press
- Cameron, A. Colin, and Trivedi, Pravin K., *Microeconometrics using STATA*, 2010, Stata Press
- Roberts, Michael R. and Whited, Toni M., *Endogeneity in Empirical Corporate Finance*, 2012, SSRN Working Paper

For topics in empirical asset pricing and time series prediction, the following references may be useful:

- Bali, T. G., R.F. Engle, and S. Murray (2016), *Empirical Asset Pricing - The Cross Section of Stock Returns*, Wiley
- Campbell, John Y., A. W. Lo, and A. C. MacKinlay (1997), *The Econometrics of Financial Markets*, Princeton
- Hamilton, J. (1994), *Time Series Analysis*, Princeton
- López de Prado, M. (2018), *Advances in Financial Machine Learning*, Wiley

If you are interested and would like to learn more about specific topics in statistics, we recommend the following books:

- Wooldridge, Jeffrey M., *Econometric Analysis of Cross Section and Panel Data*, 2010, MIT Press
- Angrist, J., and Pischke, J.-S., *Mostly Harmless Econometrics*, 2009, Princeton University Press

If you are interested and would like to learn more about statistics in general, we recommend the following book:

- Wasserman, Larry, *All of Statistics: A Concise Course in Statistical Inference*, 2004, Springer

5 Evaluation

Students will have to work on two assignments in groups of up to three students. The due dates of the assignments are indicated in the course schedule below and on the assignments. For each assignment, students should send one solution per group by email to the person indicated on the assignments. Students should make sure to hand in the assignments no later than indicated. Late submissions will get zero points.

Apart from the assignments, each group will present one paper during the last session on May 13th, 2024. The goal of the presentation is to summarize the main research question, method, and results to the other students. A list of papers can be found at the end of this syllabus. Students may choose one paper from the list during the second session.

The final grade is a weighted average of the two assignments (40% each) and the presentation (20%).

6 Tentative course schedule

Date	Content	Comments
26.02.2024	Introduction Stata	
11.03.2024	Ordinary Least Squares Stata Financial data at the University of Bern	
18.03.2024	Endogeneity Panel data Standard errors	
25.03.2024	Instrumental variable Difference-in-Difference	Assignment 1 due TBD
08.04.2024	Statistics for financial time series Market efficiency	
15.04.2024	Empirical asset pricing	Assignment 2 due TBD
13.05.2024	Presentations	

7 Presentation Papers

Part I: Empirical Corporate Finance

- (1) Khwaja, A.I., and Mian, A., 2008, Tracing the Impact of Bank Liquidity Shocks: Evidence from an Emerging Market, *American Economic Review* 98, 1413-1442
- (2) Xu, J., 2012, Profitability and capital structure: Evidence from import penetration, *Journal of Financial Economics* 106, 427-446
- (3) Chen, Q., Chen, X., Schipper, K., Yongxin, X., and Jian, X., 2012, The Sensitivity of Corporate Cash Holdings to Corporate Governance, *The Sensitivity of Corporate Cash Holdings to Corporate Governance*, 25, 3610-3644
- (4) Leary, M.T., and Roberts, M.R., 2013, Do Peer Firms Affect Corporate Financial Policy?, *The Journal of Finance* 69, 139-178
- (5) Leary, M.T., 2009, Bank loan supply, lender choice, and corporate capital structure, *The Journal of Finance* 94, 1143-1185

Part II: Empirical Asset Pricing

- (6) Bali T. G., Nurset Cakici, and Robert F. Whitelaw, 2011, Maxing out: Stocks as lotteries and the cross-section of expected returns, *The Journal of Financial Economics* 99, 427 - 446
- (7) Baker, M. and Jeffrey Wurgler, 2006, Investor sentiment and the cross-section of stock returns, *The Journal of Finance* 61, 1645 - 1680
- (8) Fama, E.F. and Kenneth R. French, 2015, A five-factor asset pricing model, *The Journal of Financial Economics* 116, 1 - 22
- (9) Frazzini, A. and Lasse Heje Pedersen, 2014, Betting against beta, *The Journal of Financial Economics* 111, 1 - 25
- (10) Moskowitz, T. J., Yao Hua Ooi, and Lasse Heje Pedersen, 2012, Time series momentum, *The Journal of Financial Economics* 104, 228 - 250