



Prof. Dr. Robert Jung / MSc Domenic Franjic

Econometrics and Statistics (520K)

Faculty of Business, Economics and Social Sciences

Contact: econometrics@uni-hohenheim.de

Consultation hours: make an appointment by email

Course Outline winter term 2026-27

"Econometric Methods in Business and Economics" (5211-410)

Master's in International Business and Economics

Schedule:

- **Lecture class: Thursday 14:15 – 15:45, HS 1, Prof. R. Jung** (starts on 15.10.26)
- **Practical class: Monday 14:15 – 15:45, HS 17, Domenic Franjic** (starts on 19.10.26)

Course format: 6 ECTS; 14 teaching weeks with one 90-minute lecture and one 90-minute practical class per week.

Learning objectives

Empirical findings inform decisions in business, economics and public policy. This course introduces econometric methods and develops the ability to interpret results, assess uncertainty and judge the conclusions that evidence can support. Simple and multiple regression form the core, with an introduction to selected further methods.

By the end of the course, students should be able to:

1. Read basic regression tables and interpret coefficients in the correct units, accounting for reference groups, included controls and statistical uncertainty.
2. Distinguish statistical significance from economic importance, using effect sizes and confidence intervals to assess findings in their substantive context.
3. Communicate the main finding of an empirical analysis clearly, together with its uncertainty and principal limitations.
4. Interpret and evaluate simple graphical presentations of empirical results, considering the comparisons shown and their suitability for a scientific or policy audience.
5. Distinguish association from causation and explain concrete threats to internal and external validity, including limits to generalising findings to other populations or settings.
6. Explain the problems addressed, principal requirements and key limitations of selected further econometric methods and compare familiar approaches in closely specified examples.

Practical work provides guided experience in running and modifying selected analyses in R. Optional exercises support further development of programming and empirical analysis skills.



Grading

A 90-minute sit-in exam determines the final grade. A minimum of 50 out of 100 points is required to pass.

Bonus rule: A supervised midterm provides practice under examination conditions and graded feedback. Bonus points (15) improve the grade only after the final exam has been passed independently of the bonus. Bonus points are valid for the examination periods in 2027 only.

Exams will be closed-book. However, you may bring cheat sheets. The permitted format and detailed rules will be provided on ILIAS.

Course materials

ILIAS provides a weekly updated learning module with goals, graphics, selected reading and follow-up practice. Regular study and practice after class remain essential. Optional extensions support further learning; the common course material covers the assessed requirements.

ILIAS course: <https://ilias.uni-hohenheim.de/goto.php/crs/1840571>

Note: You must provide your name, semester and study programme to access the ILIAS course.

Practical class and R

Domenic Franjic teaches the weekly practical class. Students work with selected empirical examples and real datasets. Guided R activities connect a prediction about an outcome with running code and explaining the output.

R is a free, open-source statistical software package (<https://www.r-project.org/>). Selected embedded exercises in the online book can run in a browser without a local R installation.



Literature

The main textbook is

Stock, J. H. and Watson, M. W. (2020). Introduction to Econometrics, 4th edition, Pearson

Hardcopies and an ebook version are available through the University of Hohenheim Library.

The textbook is accompanied by the online resource

Introduction to Econometrics with R by C. Hanck, M. Arnold, A. Gerber and M. Schmelzer: <https://www.econometrics-with-r.org/>.

The course uses selected sections and exercises; the weekly learning module identifies the required reading.

Additional reference: Wooldridge, J. M. Introductory Econometrics: A Modern Approach, Cengage, 6th, 7th or 8th edition.

Course content

Core material

1. Empirical questions and data in management, finance and economics: descriptive statistics, visualisation, association and causation.
2. Linear regression with one regressor: estimation, interpretation, fitted values and residuals.
3. Statistical inference in regression: standard errors, confidence intervals, hypothesis tests and economic significance.
4. Multiple regression: control variables, omitted-variable bias, indicator variables and selected joint tests.
5. Functional forms and model interpretation: logarithms and selected specification comparisons.
6. Assessing and communicating empirical results: internal and external validity, graphical presentation and limitations.

Selected further methods

These topics provide an overview through selected applications, focusing on the main idea and limitations. The weekly guide specifies the depth of coverage and required reading.

7. Panel data and the basic idea of fixed effects.
8. Binary dependent variables: the linear probability model and an introduction to logit and probit.
9. Endogeneity and instrumental variables: purpose, key assumptions and limitations.
10. Time series data analysis: stationarity and prediction.