



APPLIES TO ACADEMIC YEAR 2016/2017

GRA 6648 Research Methodology - Economics

Programme

Master of Science in Business (Economics)

Responsible for the course

Hilde C Bjørnland

Department

Department of Economics

Term

According to study plan

ECTS Credits

6

Language of instruction

English

Introduction

This course is a graduate level introduction to Econometrics.

Learning outcome

Econometrics uses statistical methods for estimating economic relationship, testing economic theories, and using estimated models to analyze the effect of policy intervention for the public and the private sector.

The goal of the course is to give students an intuitive yet formal understanding of the basic techniques used in applied econometrics, so that eventually they can master and produce sophisticated applied econometric analysis. The students will learn about the main estimation methods, such as OLS, maximum likelihood, instrumental variables and GMM. Applications in both micro and macro will be given. The students will learn details about time series econometrics with applications in macroeconomics and international finance. They will master univariate and multivariate models of stationary and non-stationary time series, including structural VARs. Some panel data techniques is also covered. In the end they should be able to design econometric projects.

Finally, the students will also learn advanced information search strategies. That is, acquaintance with advanced methods for information search and know what a critical literature review is.

Prerequisites

All courses in the Masters programme will assume that students have fulfilled the admission requirements for the programme. In addition, courses in second, third and/or fourth semester can have specific prerequisites and will assume that students have followed normal study progression. For double degree and exchange students, please note that equivalent courses are accepted.

Compulsory reading

Books:

Bjørnland, Hilde Christiane, Leif Anders Thorsrud. 2015. Applied time series for macroeconomics. 2nd ed. Gyldendal akademisk

Book extract:

Saunders, Mark, Philip Lewis and Adrian Thornhill. 2016. Research methods for business students. 7th ed.. Pearson. Chapter 3: Critically reviewing the literature. Pp. 70-124. Will be available electronically

Other:

Articles supplementing the books will be suggested. These can be downloaded from the Library
During the course there may be hand-outs and other material on additional topics relevant for the course and the examination.

Recommended reading

Books:

Christiano, L.J., M.Eichenbaum and C.L. Evans. 1999. Monetary policy shocks : what have we learned and to what end?. I: Taylor, John and Michael Woodford, eds, Handbook of macroeconomics, 1A. Elsevier. s. 65-148

Favero, Carlo A. 2001. Applied macroeconometrics. Oxford University Press. Chapter 1,2,3 and 6
 Greene, William H. 2012. Econometric analysis. 7th ed., International ed. Pearson

Course outline

I. Introduction to advanced information search strategies (3 hours in the pc-lab)

- Acquaintance with advanced methods for information "harvesting" and search techniques
- Know what a critical literature review is and how this type of articles may be searched for and used
- Critical evaluation of sources

II. Methods of Estimation

- Classical multiple linear regression (specification, computation, diagnostic tests)
- Instrumental variables (IV) estimation
- Generalised method of moments (GMM)
- Maximum likelihood estimation
- Empirical examples from micro and macro

III. Introduction to time series - Stationary univariate time series

- White noise, moving average, autoregression, ARMA models
- Forecasting
- Lagging and leading indicators of the business cycle, the role of financial variables

IV. Non-stationary univariate time series

- Deterministic and stochastic trends, unit root tests, structural change
- Trend/cycle decompositions
- Analysis of business cycles
- Spurious cycles

V. Vector autoregression (VAR) methodology

- Structural VARs – specification and estimation
- Identification, impulse responses
- Monetary policy in structural VAR systems
- Spurious regression and long run economic relationships
- Granger causality, cointegration, economic examples (i.e. purchasing power parity)

VI. Panel data analysis

- Difference in difference methodology

VII. Setting up an econometric project

- Research ethics, data handling, specification, modeling, policy analysis

Literature: Most articles can be downloaded. The remaining articles will be copied into a compendium.

During the semester there will be thesis seminars to guide the students towards writing a thesis registration form. This is conducted outside the course.

Computer-based tools

Eviews
 Matlab

Learning process and workload

A course of 6 ECTS credits corresponds to a workload of 160-180 hours.
 Lectures and practical exercises that must be solved on the computer.

Please note that while attendance is not compulsory in all courses, it is the student's own responsibility to obtain any information provided in class that is not included on the course homepage/It's learning or text book.

Examination

A group project/ presentation with 4-5 students in each group (counts for 20 % of the grade).
 A final 3 hour individual written exam (counts for 70 % of the grade).
 A completed and approved work assignment given by the library (counts for 10 % of the final grade).

Form of assessment	Weight	Group size
Presentation	20%	
Written examination 3 hours	70%	Individual
Work assignment by the library	10%	

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Specific information regarding student assessment will be provided in class. This information may be relevant to requirements for term papers or other hand-ins, and/or where class participation can be one of several components of the overall assessment. This is a course with continuous assessment (several exam components) and one final exam code. Each exam component is graded using points on a scale from 0-100. The final grade for the course is based on the aggregated mark of the course components. Each component is weighted as detailed in the course description. Students who fail to participate in one/some/all exam components will get a lower grade or may fail the course. You will find detailed information about the points system and the mapping scale in the student portal @bi. Candidates may be called in for an oral hearing as a verification/control of written assignments.

Examination code(s)

GRA 66486 (continuous assessment) for the final grade in the course counting 100%

Examination support materials

BI approved exam calculator

Bilingual dictionary

Permitted examination support materials for written examinations are detailed under examination information in the student portal @bi. The section on support materials and the use of calculators and dictionaries should be paid special attention to.

Re-sit examination

It is only possible to retake an examination when the course is next taught. The assessment in some courses is based on more than one exam code. Where this is the case, you may retake only the assessed components of one of these exam codes. All retaken examinations will incur an additional fee. Please note that you need to retake the latest version of the course with updated course literature and assessment. Please make sure that you have familiarised yourself with the latest course description.

Additional information

Honour code. Academic honesty and trust are important to all of us as individuals, and are values that are integral to BI's honour code system. Students are responsible for familiarising themselves with the honour code system, to which the faculty is deeply committed. Any violation of the honour code will be dealt with in accordance with BI's procedures for academic misconduct. Issues of academic integrity are taken seriously by everyone associated with the programmes at BI and are at the heart of the honour code. If you have any questions about your responsibilities under the honour code, please ask. The learning platform itslearning is used in the teaching of all courses at BI. All students are expected to make use of itslearning.