APPLIES TO ACADEMIC YEAR 2013/2014

DRE 7014 Bayesian Econometrics

Programme
Elective course

Responsible for the course
Hilde C Bjørnland, Genaro Sucarrat

Department
Department of Economics

Term
According to study plan

ECTS Credits
3

Language of instruction
English

Introduction

Learning outcome
Students should be able to read critically papers and to use Bayesian inference for their own research, in each case in relation to the material that has been covered.

Prerequisites
Knowledge of econometric models (regression models, qualitative and limited dependent variables, time series models). Ability at computer programming (e.g. in R, Matlab, GAUSS, Ox, C or any other language).

Admission to a PhD program is a general requirement for participation in PhD courses at BI Norwegian Business School.

External candidates are kindly asked to attach confirmation of admission to a PhD programme when signing up for a course with the doctoral administration if they want to take exams. However, candidates can be allowed to sit in on courses by approval of the course leader. Sitting in on courses does not permit registration for courses, handing in exams or gaining credits for the course. Course certificates or conformation letters will not be issued for sitting in on courses

Compulsory reading
Books:
Bauwens, Luc, Michel Lubrano and Jean-Francois Richard. 1999. Bayesian inference in dynamic econometric models. Oxford University Press
Geweke, John. 2005. Contemporary Bayesian econometrics and statistics. John Wiley
Koop, Gary. 2003. Bayesian econometrics. Wiley
Lancaster, Tony. 2004. An introduction to modern Bayesian econometrics. Blackwell
Zellner, Arnold. 1971. An Introduction to Bayesian Inference in Econometrics. Wiley

Other:
Additional material (e.g. handouts, articles, etc.) may be distributed or referred to during the course

Recommended reading

Course outline
1. Concepts for Bayesian Inference
- Bayesian inference
- Criteria for evaluating statistical procedures
- Probability: objective or subjective

2. Numerical Methods for Bayesian Inference
- Need for numerical integration

- Deterministic integration
- Monte Carlo integration

3. Bayesian Inference for Regression Analysis
- Regression with non-informative prior
- Regression with conjugate prior
- Partially linear model
- Regression with non-conjugate prior
- Heteroskedastic errors
- Autocorrelated errors
- IID student errors

4. Bayesian Inference for vector autoregressive models
- Unrestricted VAR and multivariate regression models
- Posterior with NIP
- Posterior with informative prior
- The Minnesota prior
- Restricted VAR and SURE models

5. Bayesian Inference for volatility models
- ARCH models
- Stochastic volatility models

Computer-based tools
It's learning/homepage, statistical programming language (e.g. R, Matlab, GAUSS, Ox, C, etc.)

Learning process and workload
A course of 3 ECTS credits corresponds to a workload of 80-90 hours.
Lectures: 15 h.

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
Course paper.
Graded pass/fail

Examination code(s)
DRE 70141 course paper counts for 100% of the final grade in the course. The grade scale is pass/fail

Examination support materials

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.

Additional information
Honor Code
Academic honesty and trust are important to all of us as individuals, and represent values that are encouraged and promoted by the honor code system. This is a most significant university tradition. Students are responsible for familiarizing themselves with the ideals of the honor code system, to which the faculty are also deeply committed.

Any violation of the honor code will be dealt with in accordance with BI's procedures for cheating. These issues are a serious matter to everyone associated with the programs at BI and are at the heart of the honor code and academic integrity. If you have any questions about your responsibilities under the honor code, please ask.