

Overview

Bayesian Econometrics with R

This is a course in Bayesian econometrics with a focus on models used in both empirical macroeconomics (time-varying parameter models) and micro econometrics (classification). It begins with a brief introduction to Bayesian econometrics, describing the main concepts underlying Bayesian theory and seeing how Bayesian methods work in the familiar context of the regression model. Computational methods are of great importance in modern Bayesian econometrics and therefore the implementation of each model in the statistic software R is discussed in detail. We often have Big Data and work with models where the number of parameters to be estimated is large relative to the number of observations in the data set. A range of Bayesian methods have been derived for dealing with Big Data including stochastic search variable selection (SSVS), the least absolute shrinkage and selection operator (LASSO) and dynamic model averaging (DMA).

It is assumed that participants have some background knowledge of econometrics, a basic knowledge of probability theory, knowledge of basic matrix algebra and knowledge of R. Prior knowledge of Bayesian Econometrics is not necessary. Assessment for credit will be offered.

Course Content

- Bayesian Theory
- Linear Regression
- Linear Regression with t Errors
- Bayesian Lasso
- Stochastic Search Variable Selection
- Probit Model
- Ordered Probit Model
- Dynamic Model Averaging