

Euro Area Business Cycle Network Training School

Advances in Bayesian Analysis of DSGE Models

By

Frank Schorfheide
(University of Pennsylvania and CEPR)

European University Institute
Florence

1-3 June 2016

Deadline: 6pm (UK time), Friday 1 April 2016

General Description

We are pleased to announce details of the latest EABCN Training School; a three-day course entitled “Advances in Bayesian Analysis of DSGE Models”. Professor Frank Schorfheide will teach the course. It is primarily aimed at participants in the Euro Area Business Cycle Network but applications will also be considered from doctoral students, post-doctoral researchers and economists working in central banks and government institutions outside of the network, as well as commercial organisations (fees applicable for non-network organisations).

Course Contents

This course covers recent advances in the Bayesian analysis of dynamic stochastic general equilibrium (DSGE) models, covering both estimation methods and applications. The course consists of three parts.

Part 1: We begin with an introduction to DSGE modelling and Bayesian inference. We then discuss in detail two important classes of algorithms that can be used to generate draws from posterior distribution of DSGE model parameters: Metropolis-Hastings (MH) algorithms and Sequential Monte Carlo (SMC) algorithms. The course covers the theoretical underpinnings of these algorithms, basic convergence results, performance comparisons, and practical tips on how to tailor these algorithms to specific applications.

Part 2: While much of the first part of the course focuses on linearized DSGE models for which the likelihood function can be evaluated using the Kalman filter, the second part considers computational techniques for nonlinear DSGE models. In particular, we examine several versions of the particle filter and then embed a particle filter approximations of the likelihood function into an MH and an SMC algorithm.

Part 3: The last part of this course discusses methods to evaluate DSGE models as well as forecasting techniques.

The course comprises lectures as well as MATLAB-based practice sessions. A significant portion of the course is based on Herbst, Edward and Frank Schorfheide (2015): *Bayesian Estimation of DSGE Models*, Princeton University Press.

Administrative Information:

The course will take place in Florence at the European University Institute and participants will be invited to make their own arrangements regarding their accommodation and meals. Further information will be available to successful applicants.

To apply, candidates need to send a current version of their CV to Amanda Vincent-Rous in the CEPR Events team at avincentrous@cepr.org by no later than **6pm (UK time), Friday 1 April 2016**.

About the Instructor:

Frank Schorfheide (sites.sas.upenn.edu/schorf/) is a Professor of Economics at the University of Pennsylvania. He is also a Research Associate at the National Bureau of Economic Research (NBER) and a Research Fellow at the Centre for Economic Policy Research (CEPR). He has been a visiting scholar at several central banks and currently serves as the co-editor of the journal *Quantitative Economics*. Frank Schorfheide's research areas are econometrics and empirical macroeconomics. Much of his work can be classified as macroeconometrics and is related to the Bayesian analysis of DSGE models. His research provides a set of tools that are useful for empirical work with modern macroeconomic models, including forecasting and policy analysis. He has applied these methods to analyse the sources of business cycle fluctuations and to study the effects of monetary policy.

About the Teaching Assistant:

Jacob Warren is a Ph.D. student at the University of Pennsylvania with research interests in econometrics and its applications to macroeconomics and finance.