



Euro Area Business Cycle Network Training School

Bayesian Inference in Macroeconomic Models

**Banque National de Belgique
Brussels**

15-17 December 2010

Deadline 15 October 2010

General Description

We are pleased to announce details of the latest EABCN Training School; a three-day course entitled "Bayesian Inference in Macroeconomic Models".

Professor Giorgio Primiceri 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 Detail

The course aims to introduce students to the Bayesian estimation of three popular classes of macroeconomic models: (i) vector autoregressions (VAR and BVARs), (ii) models with time varying coefficients and stochastic volatility, and (iii) dynamic stochastic general equilibrium (DSGE) models.

VARs are very popular and flexible tools used for forecasting and the identification of economic shocks (SVARs). As such, they constitute a bridge between reduced-form and structural models. However, their flexibility comes at the cost of being over-parameterized. Therefore, Bayesian inference becomes crucial to handle the proliferation of the number of parameters and to improve dramatically both their forecasting performance and the accuracy of estimation of more structural objects (e.g. impulse responses.)

Models with drifting coefficients and stochastic volatility have been extensively used to analyze the monetary history of the U.S. and other developed countries, trying to identify the causes of important events such as the Great Inflation or the Great Moderation. Moreover, these models seem very well suited to study the causes and consequences of the current financial crisis, which is characterized by abnormally high shock volatility and strong nonlinearities.

Finally, in recent years DSGE models have become the most popular tool for policy analysis in Central Banks. It is therefore important to understand how to take these models to the data, evaluate their fit and, among other things, use DSGE models to extract counterfactual objects that are fundamental for the conduct of monetary policy, e.g. potential output and the natural rate of interest.

Each day, the course includes two more theoretical lectures (about 2 hours each) and a more practical session (1 or 2 hours) in which we will go over some examples of codes and real

applications of the methodologies studied in class. The following program outlines the structure of the course:

Wednesday, December 15

- Introduction to Bayesian inference and VARs
- Bayesian VARs
- Practical session with examples of codes and applications
 - Forecasting with BVARs

Thursday, December 16

- State space models and time varying parameters
- Models with stochastic volatility
- Practical session with examples of codes and applications
 - VARs with drifting coefficients and stochastic volatility

Friday, December 17

- Bayesian inference in DSGE models
- Model comparison and model choice
- Practical session with examples of codes and applications
 - Using DSGE models to estimate potential output and the natural rate of interest

Administrative Information

The course will take place in Brussels at Banque Nationale de Belgique and participants will be invited to make their own arrangements regarding their accommodation and meals. Further information will be available to applicants. Candidates should fill in the enclosed form and return it to CEPR's Meetings Manager, Nadine Clarke (nclarke@cepr.org) by **October 15st, 2010**. **We ask that you send a current version of your CV with your application.** EABCN gratefully acknowledges the generous assistance from the Banque Nationale de Belgique for this course.

About the Instructor

Professor Giorgio Primiceri holds a PhD from Princeton University. He is now an Assistant Professor at Northwestern University. He is a Research Fellow of NBER and a Research Affiliate of CEPR. He is an associate editor of the Journal of the European Economic Association, of the Review of Economic Dynamics and of the Journal of Monetary Economics.