

Euro Area Business Cycle Network Online Training School

**Continuous-time Methods in Macroeconomics
(with applications to heterogeneous agent models)**

by

Jesús Fernández-Villaverde (University of Pennsylvania)

and

Galo Nuño (Bank of Spain)

30 September-2 October 2020

Deadline: 6pm (UK time), Friday 18 September 2020

General Description

We are pleased to announce that more spaces have become available for this EABCN Training School as it will be held online.

This will be a three-day course on “Continuous-time Methods in Macroeconomics (with applications to heterogeneous agent models)”, taught by Professor Jesús Fernández-Villaverde and Galo Nuño.

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 are applicable for non-network non-academic organisations).

Course outline

A recent literature has shown that heterogeneous agent (HA) models can be crucial for the understanding of the transmission mechanism of monetary and fiscal policies. So far, a significant barrier to the widespread use of HA models in academic and policy circles, including central banks, has been the complexity in the solution and estimation of this class of models. New analytical and numerical tools, however, have emerged in the last years that greatly simplify this task. Continuous-time methods, in particular, provide important advantages for the analysis of HA models.

This training course introduces the main tools, as well as some recent advances, in continuous-time methods in macroeconomics, with a focus on their application to HA models. This course will provide participants with the necessary background to apply these tools in practice as well as introduce some relevant applications in macro and monetary economics.

Administrative Information:

The course will take place online. Candidates who have a CEPR profile should apply by submitting their CV online at <https://portal.cepr.org/EABCN-TS-Oct-2020> by 6pm (UK Time +1 GMT), **Friday 18 September 2020**. If you do not currently have a CEPR profile, please create a new one [here](#) and then click on the registration link.

We ask that you send a current version of your CV. PhD students should also specify in which way the school will be useful for their current research (max 300 words).

Participants from non-academic institutions where the employer is not a member of the EABCN network are charged a reduced course fee of € 1000.

About the Instructors:

Jesús Fernández-Villaverde is currently Professor of Economics at the University of Pennsylvania, where he serves as Director of Graduate Studies in the Economics Department, Visiting Professor at University of Oxford, Visiting Scholar at the Federal Reserve Banks of Chicago, Cleveland, and Philadelphia and the Bank of Spain, Advisor to the Hoover Institution at Stanford University's Regulation and Rule of Law Initiative, and a member of the National Bureau of Economic Research and the Center for Economic Policy Research. In the past, he has held academic appointments, among others, at Harvard University, Princeton University, Yale University, Duke University, and New York University, he has been Visiting Scholar at the Federal Reserve Banks of St. Louis, Minneapolis, Cleveland, and Atlanta, Research Professor at FEDEA (Spain), National Fellow of the Hoover Institution at Stanford University, Visiting Scholar at the Becker-Friedman Institute of the University of Chicago, Visiting Scholar at INET at University of Cambridge, Distinguished Visiting Professor at University of Melbourne (Australia), and he was the director of the Penn Institute for Economic Research. He is editor of the *International Economic Review*. In the past, he has served in the editorial board of several other learned journals. He has published many peer-reviewed papers, including *American Economic Review*, *Econometrica*, and *Review of Economic Studies* and edited and co-authored several books. His research focuses on macroeconomics, econometrics, and economic history. Among other topics, he is interested in the role of monetary and fiscal policy, the sources of economic growth, the importance of the rule of law, and the foundations of market economies.

Galo Nuño is Head of the Monetary Policy and Macroeconomic Analysis Section at the Bank of Spain. His research focuses on monetary economics, macrofinance and computational methods. In particular, he has developed, with different coauthors, some new theoretical and numerical techniques for the study of continuous-time heterogeneous-agent models, including the analysis of optimal policies and the solution and estimation of nonlinear models with aggregate shocks. He has published in the *American Economic Journal: Macroeconomics*, *Journal of Monetary Economics*, *Journal of Economic Growth*, *Review of Economic Dynamics*, *Economic Journal* and many others.