Symposium: Macroeconomics and the challenge of complexity

Participants:

Katrin Assenmacher (European Central Bank, head of monetary policy strategy division): "Using DSGE models for monetary policy analysis"

Tobias Henschen (University of Cologne, PI, DFG-funded research project on the philosophy of complexity economics): "Complexity and policy analysis in macroeconomics"

Thomas Lux (University of Kiel, professor of monetary economics and international finance): "Identification and validation of agent-based macroeconomic models"

Alessio Moneta (Sant'Anna School of Advanced Studies, Pisa, professor of economics): "Macroeconomic simulation models and causal inference"

Summary:

Macroeconomics is the economic discipline, which models the macroeconomy for purposes of policy analysis, forecast, and statistical inference. Despite its social and political importance and a host of methodological intricacies, macroeconomics figures rarely in any of the methodological debates that are currently held. Our symposium aims to change that by highlighting some of the most significant problems that affect macroeconomic policy analysis. These problems relate essentially to the type of models, which macroeconomists design, and the way, in which they conduct causal inference and estimate structural parameters. The first paper of our symposium (Henschen) argues that the macroeconomy is a complex system (a system that is populated with myriads of heterogenous agents who behave adaptively and interact directly in dynamic non-equilibrium such that earlier interactions feed back into later ones and stylized facts emerge), and that agent-based models are likely to outperform the traditional dynamic-stochastic general-equilibrium (DSGE) models in terms of policy analysis at some point in the future. The second paper (Assenmacher) argues that central banks and other policymaking institutions should continue to use DSGE models as their main workhorse if progress can be made in research on heterogeneity and microfoundations, and that promising work is forthcoming in these areas. The third paper (Moneta) presents a new causal inference method involving the use of causal graphs for the purpose of calibrating and validating macroeconomic simulation models (of the DSGE or agent-based variety). The fourth paper (Lux) points out that in the absence of sufficiently many data points, strong priors are needed when Bayesian techniques are to be applied successfully to estimate the structural parameters of macroeconomic (DSGE or agent-based) models. Our symposium is meant to be ideologically balanced. We think that this ideological balance is an important condition for progress in macroeconomic policy analysis. Macroeconomists will make little progress if they entrench themselves and ignore each other or even exchange personal insults.