

## Call for Special Session EAEPE 2019 - Varsavia

### Session title:

Agent-based modelling in macroeconomics and finance: issues, problems and possible futures

### Session organizers:

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### EAEPE research area:

RA[S] Evolutionary Economic Simulation

### Keynote Speakers to be confirmed.

## Topic description

The use of agent-based models (ABMs) is pervasive in evolutionary macroeconomics and finance (Bonabeau 2002; Tesfatsion and Judd 2006; Farmer and Foley 2009; Fagiolo and Roventini 2017; Dosi and Roventini, 2019) and, in the aftermath of the 2008 financial crisis, many scholars and policy makers openly argued in favor of such modeling approaches as well as their theoretical foundations (e.g. Trichet 2009, Kirman 2012, Fagiolo and Roventini 2012). Ten years after, it seems that ABMs still lack behind in terms of ability to emerge as commonly accepted tools for policy analysis. Despite the reasons behind such evidence are complex and multifaceted – possibly touching the political economy of the whole economic profession – it is worth to critically investigate (i) the current issues and problems of macro and financial ABMs, which possibly weaken the reliability of their analysis and, further, (ii) the best practices and futures lines of research.

The special session we are proposing deals exactly with an in-depth analysis of the strength and weakness of agent-based modeling in economics and finance and would like to attract both methodological contributions and examples of coherent and empirically-sound analyses conducted through ABMs.

The session has therefore two main aims:

1. to shed light on the current issues and problems in macroeconomic and financial agent-based modelling, including the relationship with the empirical data (validation and calibration), the simulation setups (how many agents, how many runs,...), the policy analysis (when is a model ready for policy testing? What kind of policies can we test, and what we cannot?), the replicability of results.
2. to identify best practices and future areas of research for the agent-based modeling community, both in terms of novel avenues of scientific analysis (e.g. modeling of inequality or climate change risks) and methodological aspects (what scenarios to target; when a stylized fact is replicated, how to modularly develop macro ABMs).

Questions of particular importance in this area of research that we would like to see addressed in this special session, might involve (but are not limited to) the following ones:

- What is a stylized fact and how it can be replicated via simulation?
- Are there examples of macro/financial agent-based models that are validated against real data?
- How can we exploit big data in agent-based models?
- Can agent-based models go beyond thought-experiments? How?
- What are the current limits of agent-based modeling?
- What are the next issues that agent-based modeling can help analyze?

The session will be organized through a series of research talks collecting presentations on the themes described above. In addition, we propose a round-table session where invited speakers, together with a member of the organizers and one of the coordinators of the research area S will discuss and provide their critical view on the status and future of agent-based modeling in macroeconomics and finance.