

AGENT-BASED FINANCIAL ECONOMICS

Luzius Meisser, luzius@meissereconomics.com, 2017-12-18

“What I cannot create, I do not understand.”

Richard Feynman

Abstract

I present the condensed contents of the interdisciplinary course Agent-Based Financial Economics (MOEC0498, course.meissereconomics.com). In this course, the students program increasingly sophisticated agents that compete online in an economic simulation. The simulation is updated live as the students upload their latest code. Consumers are ranked by utility and firms are ranked by dividends paid to consumers. There is no centralized decision taking and no exogenously enforced market clearing. Instead, the agents have to follow heuristics based on local observations. Will the invisible hand guide them towards the efficient outcome anyway?

To classic economists, this is a neat exercise in aggregation, but it can also be seen as a novel modelling methodology that can illustrate and generate insights. For example, I realized that nominal actions by the central bank can have real consequences even when everyone contracts on real prices (as long as barter trading is not allowed). Another insight I gained is that inequality increases as life-expectancy goes up. Or that profit maximization can be gamed when firms are allowed to own each other. Many more such nice, but not necessarily novel, observations will be discussed.

Rank	Firm	Dividends	Source	Version
1	team010-InvestmentFund	1751942842	source	Robin Stohler on 2017-12-09T08:47:29Z
2	team003-LandBuyingFarm	99786291	source	Sascha Künzle on 2017-12-08T14:38:36Z
3	team002-LandBuyingFarm	74713691	source	claude on 2017-12-09T16:01:19Z
4	course-DefaultFarm	57420459	source	Luzius Meisser on 2017-12-07T23:20:53Z
5	team001-InvestmentFund	9018565	source	Steven Battilana on 2017-12-08T16:28:19Z
6	course-MarketMaker	8754319	source	Luzius Meisser on 2017-12-07T23:20:53Z
7	team007-RealEstateAgent	1110652	source	Timothy Zemp on 2017-12-08T13:58:33Z
8	team005-RealEstateAgent	50891	source	dhivyaCSPPro on 2017-12-08T10:02:46Z

Figure: Current agent ranking from meissereconomics.com/vis/simulation?sim=ex9-competitive