Flow of Funds in an Evolutionary Finance Model

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Abstract

As a junior participant, this talk introduces my PhD research in the area of heterogeneous agent models in finance. The general goal of the research is to improve our understanding of the dynamics of financial markets through an combined approach of Evolutionary Finance, Agent-Based Modeling and Behavioral Finance. Our heterogeneous agent model of financial markets combines the performance-driven strategy-switching mechanism of Adaptive Belief Systems (Brock and Hommes, 1997) and an Evolutionary Finance model (Evstigneev, Hens and Schenk-Hoppé, 2011). This new model inherits the advantages of the Evolutionary Finance approach but draws on the strengths of strategy-switching mechanism in Adaptive Belief Systems. As an important feature, this new model characterizes the evolution of wealth distribution when investors switch between different investment strategies. Moreover, our modeling approach also makes a step towards bridging Behavioral Finance and Agent-Based Modeling. We provide mathematical representations of a number of behavioral biases of investors, and study their impact on the aggregate market dynamics using an Agent-Based Modeling approach. Focus is on exploring the link between investors' bounded rational behavior at the micro-level and the aggregate market dynamics at the macro-level. The findings are expected to contribute to new ideas and concepts on understanding the process of market selection of investment strategies, and on comprehending the causes of a variety of stylized facts of financial markets, such as excess volatility, high trading volume, and equity premium.

Keywords: heterogenous agent model; evolutionary finance; agent-based modeling; behavioral biases; stylized facts.