

AKSOE 8 Award Ceremony: Young Scientist Award for Socio- and Econophysics

Time: Tuesday 16:00–18:00

Room: HSZ 03

Invited Talk

AKSOE 8.1 Tue 16:00 HSZ 03

An empirical behavioral model for price formation — •DOYNE FARMER¹ and MIKE SZABOLCS^{1,2} — ¹Santa Fe Institute — ²Budapest University of Technology and Economics

Although behavioral economics has demonstrated that there are many situations where rational choice is a poor empirical model, it has so far failed to provide quantitative models of economic problems such as price formation. We make a step in this direction by developing empirical models that capture behavioral regularities in trading order placement and cancellation using data from the London Stock Exchange. For order placement we show that the probability of placing an order at a given price is well approximated by a Student distribution with less than two degrees of freedom, centered on the best quoted price. This result is surprising because it implies that trading order placement is symmetric, independent of the bid-ask spread, and the same for buying and selling. We also develop a crude but simple cancellation model that depends on the position of an order relative to the best price and the imbalance between buying and selling orders in the limit order book. These results are combined to construct a stochastic representative agent model, in which the orders and cancellations are described in terms of conditional probability distributions. This model is used to simulate price formation and the results are compared to real data from the London Stock Exchange. Without adjusting any parameters based on price data, the model produces good predictions for the magnitude and functional form of the distribution of returns and the bid-ask spread.

AKSOE 8.2 Tue 17:00 HSZ 03

Presentation of the Young Scientist Award for Socio- and Econophysics — • —

AKSOE 8.3 Tue 17:15 HSZ 03

Awardee's Talk — • —