Rational Expectations and the Aggregation of Diverse Information in Laboratory Security Markets

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The idea that markets might aggregate and disseminate information and also resolve conflicts is central to the literature on decentralization (Hurwicz, 1972) and rational expectations (Lucas, 1972). We report on three series of experiments all of which were predicted to have performed identically by the theory of rational expectations. In two of the three series (one in which participants trade a complete set of Arrow-Debreu securities and a second in which all participants have identical preferences), double auction trading leads to efficient aggregation of diverse information and rational expectations equilibrium. Failure of the third series to exhibit such convergence demonstrates the importance of market institutions and trading instruments in achievement of equilibrium.

In this paper we explore the information aggregation properties of market organization that recent mathematical theorizing suggests might exist. Economists have long recognized that markets, if properly structured, can be an efficient conflict resolution device for a given pattern of attitudes. In addition, the idea that market processes may involve value formation (the endogenous formation of limit prices and demand functions), thereby departing from an assumption of fixed attitudes, was introduced many years ago. However, the idea that value formation, to the extent it reflects expectations formation, may involve aspects of efficiency and that organizations might aggregate and disseminate information while also resolving conflicts is a product of the modern mathematical literature on decentralization (Hurwics, 1972) and on rational expectations (Lucas, 1972).