The Adaptive Rationality of Markets

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Abstract

We build a microeconomic systems simulation of agents may move from a decentralized market for a homogeneous good to a centralized market using a limit book. In our markets we assume that a major source of transaction cost are the computational costs of making and completing a transaction, and the computational costs of maintaining a network of trading partners. We explore the conditions which lead agents to minimize transaction costs by converging to focal point meeting locations and adapt their bargaining strategy to both look for, and compete for, the best offer at their location. We then explore the conditions under which a centralized limit book market will emerge, and we show how agents might co-adapt a budget constrained zero intelligence strategy to minimize computational costs. We finally explore conditions which lead back to decentralized markets using blockchain technologies, and we study the adaptive fitness of zero intelligence strategies in markets using one of the emerging types of blockchain markets using `smart` contracts.