Endogenous Reference Prices

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Abstract

In finance,various items with heterogeneous characteristics are often auctioned simultaneously. This is the case when a financial institution attempts to raise a certain amount of liquidity by auctioning a large portfolio of securities with different characteristics. In a previous paper (Armantier, Holt, and Plott 2013) we proposed an auction design in which the bids submittedare normalized by “reference prices” reflecting the seller’s estimate of the value of each item. When the reference prices are accurate this design promotes competition and provides protection against adverse selection.When the reference prices are notaccurate estimations of the items’ values, however, the performance of the auction may be negatively impacted. In this paper, we conduct a series of experiments to explore how the seller can protect itself against inaccurate reference prices.

In particular, we study how the seller can “endogenize” reference prices by using information contained in the bids submitted to revise its initial value estimate for each item. Our experiments suggest that this approach is effective as it increases the seller’s profit.