Competing for Free-Riding: Strategic Nonbiddings in Ascending Package Auction*

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Abstract

This paper characterizes the perfect Bayesian equilibrium in an ascending price package auction. Bidders play history-dependent strategies in an ascending auction, and we show that it causes serious underbidding behavior. We suppose that there are 2 objects and 3 bidders: 2 local and 1 global bidders. Local bidders want only one unit of the objects, while global bidders want both. We show that either of the local bidders stops bidding at the beginning. Although local bidders generally have the threshold problem and incentives to underbid, once a bidder becomes a unique remaining local bidder, he/she bids truthfully after that subgame. This implies that stopping early makes others bid aggressively and truthfully. Hence, local bidders want to stop bidding earlier than each other: a race for a "free-riding seat" arises. The equilibrium outcome is unique under some conditions.

JEL classification: D44, D82

Keywords: auctions, package auction, free-rider problem, threshold problem, perfect Bayesian equilibrium, market design, combinatorial auction

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