Optimal Reserve Prices in Sequential Auctions with Imperfect Commitment

Abstract
In a sequential auction of perfect substitutes, we analyze the consequences of the seller's incapacity to commit perfectly to a reserve-price schedule. When facing such a seller, the bidders have strong incentives not to reveal during the earlier rounds of the auction any information about their valuations. If the seller observes only the winning bid in each round, as in a sequence of Dutch auctions, there is a symmetric monotone equilibrium in which the seller lowers the reserve price over time. The anticipation of lower future reserve prices makes several bidder types abstain from the earlier rounds, even though their valuations exceed the requested price. In addition, because of the restriction in competition, the participating bidders shade their bids sharply. Thus, imperfect commitment results in revenue loss. The loss becomes more severe if the seller attempts to suppress some of the information revealed in the auction, for example, by learning only whether an item is sold. Finally, if the seller observes all bids, as in a sequence of sealed-bid auctions, a monotone equilibrium fails to exist, however small the imperfection of the seller's commitment is. Our results rationalize the adoption of costly commitment or privacy preserving measures, such as the use of a well-established auction house.