Bid Uncertainty under Collusive Behavior in Public Procurement Auctions*

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Abstract

This paper studies procurement auctions in which the bidder with the best (intended) offer may not win because of bid uncertainty. Such uncertainty can arise when bidders may make errors in bidding, or when the competitive bidding takes the form of a scoring auction with subjective quality evaluation by the auctioneer. We show that, in a collusive equilibrium of a repeated procurement auction model with bid uncertainty, the winning bid is well separated from the losing bids. This result provides a theoretical explanation for the phenomenon known as "isolated winning bids" or "missing bids." We also show that greater bid uncertainty widens the gap between the winning and losing bids. Since scoring auctions involve more bid uncertainty than price-only auctions, this result implies that the bid difference is larger in scoring auctions, which leads to lower winning bids and smaller collusion profits. These predictions are consistent with empirical evidence from collusive public procurement auctions in Japan.

*Very preliminary and incomplete. Please do not circulate.

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