Bid Uncertainty under Collusive Behavior in Public Procurement Auctions

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Abstract

This paper studies procurement auctions in which the bidder who submits the best (intended) offer may not win the auction due to bid uncertainty. Such uncertainty can arise when a bidder may make an error in bidding or when the competitive bidding takes the form of a scoring auction with subjective quality evaluation by the auctioneer. We find that, in an 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 justification for the phenomenon known as "missing bids." We also show that an increase in bid uncertainty leads to a greater bid difference. These results are supported by empirical evidence suggesting that, in collusive public procurement auctions in Japan, bid differences are greater in scoring auctions than in price-only auctions.