Data Driven Regulation:

Theory and Application to Missing Bids

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Abstract

We document a novel bidding pattern observed in procurement auctions from Japan: winning bids tend to be isolated. This bidding pattern is suspicious in the following sense: it is inconsistent with competitive behavior under arbitrary information structures. Building on this observation, we develop a theory of data-driven regulation based on "safe tests," i.e. tests that are passed with probability one by competitive bidders, but need not be passed by non-competitive ones. We provide a general class of safe tests exploiting weak equilibrium conditions, and show that such tests reduce the set of equilibrium strategies that cartels can use to sustain collusion. We provide an empirical exploration of various safe tests in our data, as well as discuss collusive rationales for missing bids.

KEYWORDS: missing bids, collusion, regulation, procurement.

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