Sophisticated Bidders in Beauty-Contest Auctions

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**Abstract**

We study bidding behavior by firms in beauty-contest auctions, i.e. auctions in

which the winning bid is the one which gets closest to some function (average) of

all submitted bids. Using a dataset on public procurement beauty-contest auctions,

we show that firms' observed bidding behavior departs from equilibrium and can be

predicted by a sophistication index, which captures the firms' accumulated capacity

of bidding close to optimality in the past. We show that our empirical evidence is

consistent with a Cognitive Hierarchy model of bidders' behavior. We also investigate

whether and how firms learn to bid strategically through experience.

JEL classi\_cation: C70; D01; D44; D83; H57.

Keywords: cognitive hierarchy; auctions; beauty-contest; public procurement.