INSIGHTS

DETERMINING THE MODE OF COMPETITION IN PUBLIC TENDER

by Giulia Di Pierro

Public procurement is an increasingly critical function for government worldwide. It represents a significant share of a country's GDP and, considering its magnitude, any related decision can influence the level and structure of competition in a market. Being a founding principle in government procurement, competition should always be guaranteed. When designing a public tender, there are a variety of factors that have an impact on the intensity competition, such as choice of the procedure, selection criteria, number and size of lots, modality of advertisement of procurement notices, deadlines for submission of bids, and/or award criteria. These factors not only determine how fiercely bidders will compete but also on which dimension they will do so.

With regard to the award criteria, public buyers can choose between the lowest price or the most economically advantageous tender (MEAT) criterion. A contracting authority that solicits two-dimensional bids (i.e. MEAT criterion) reveals that it considers both qualitative and economic aspects to be important and that it expects bidders to compete on both. But does it have a way to state which of the two dimension is more important, or to what extent, so that bidder's choices will reflect its preferences? The answer is: yes. The available means to do so is the scoring rule.

In multidimensional procurement processes, a scoring rule (or mechanism) maps each tender's financial and non-financial attributes onto one-dimensional score. Buyer's preferences are, therefore, summarized by the scoring rule that allows the ranking of bids and selection of the winner, by translating the price and non-price features of each bid in a score.

The adopted scoring rule affects the way bidders will compete. However, contrary to what one may think, the mode and intensity of competition is not (only or predominantly) determined by the allocation of the weights in the MEAT criterion (e.g. 70% to quality and 30% to the price), but rather by the allocation of points within each dimension. For the qualitative dimension, this allocation of points depends on the procurement subject matters (i.e. goods, services, or works), while for the economic dimension it is influenced by the type of formula that is adopted in the scoring rule. In particular, there are two types of formula for the computation of the economic score: (1) *independent formula*, where the economic score obtained by a firm's bid does not depend on other firms' bids; or (2) *interdependent formula*, where the economic score obtained by a firm's bid does depend on other firms' bids. The choice of one formula over the other depends on the context of the specific tender. The independent linear formula is appropriate in competition for procurement as, once set the reserve price and the maximum points available, the buyer can use the price threshold to fine-tune the intensity of competition (linear scoring). If bidders are expected to bid too aggressively on price, it is advisable to adopt independent parabolic scoring, which is similar to a linear one, but the score increases at a decreasing rate with further price reductions. On the other hand, if the buyer has poor information on the true cost of the supply or services and is unable to set a reserve price, it is advisable to adopt an interdependent formula, since the score is determined by comparing each bid with the others.

Scoring mechanisms are powerful tools to shape bidders' incentives. However, they have to be carefully designed as "copy and paste" approaches may generate unintended and harmful consequences.

Below, we show, with a (almost) fictious example, how the scoring rule may produce paradoxical results.

Background

- *Subject matter*: health products
- *Number of bidders*: 4 (A,B,C and D)
- *Award criterion*: MEAT (80% to the quality and 20% to the price dimension)
- *Qualitative score:* known by bidders a priori
  - A and C can get the maximum score
  - D can get an average score
  - B can get a very low score
- *Economic score*: Interdependent scoring rule

Scenario 1

Each firm participates in the tender individually. Since firm B can get a low score for the technical part, the only chance of winning the tender is by bidding aggressively on price in order to get the highest economic score. Suppose that the lowest price it can afford is ... On the other hand, firm A and C are not interested in lowering much their price, as any price reduction will not guarantee them a

significant increase in the economic score and they have such a superior quality that they can get a higher score than B even if the latter offers the lowest feasible price. Bids received are as follows: 98€ (A); 30€ (B); 100€ (C); and 90€ (D). The contract is awarded to A and the award price is, therefore, 98€.

Scenario 2

Suppose that B does not participate (either because it does not meet the participation criteria or because it forms a joint venture submit another bidder). In this scenario Firm D is the firm with the worst quality and the one that has to bid more aggressively on price to offset its qualitative score. Hence, it submits the lowest bid. In this case however, since D's offered price is not as low as the one that B would have offered, the other firms have higher incentives to offer price reductions as it would grant them more points for the economic score, due to the use of the interdependent formula. Given this stronger incentive to compete on price, the three bids received are: 80€ (A); 95€ (C) and 50€ (D). The contract is awarded to A and the award price is 80€.

Considerations

Since the buyer had information on the cost of the supply and on the qualitative dimension, the more appropriate type of formula for the scoring rule would have been the independent one. By choosing an interdependent scoring rule and incorrectly allocating points within the economic dimension, the resulting "paradox" is that the intensity of competition is higher, and the award price lower, when there are less participants competing (i.e. second scenario).

The type of scoring rule's formula, therefore, determines the mode of competition and should be carefully designed. In case of an independent formula, if the threshold is not properly set, all suppliers may bid exactly the threshold price and the scoring rule cannot discriminated the offers since all suppliers would get the same economic score. On the other hand, interdependent formulas are riskier to adopt if there is a low number of expected participants, due to the risk of bid manipulation and collusion among potential bidders.

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