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Too High or Too Low? The Pros and Cons of Regulating the Reserve Price in Public Procurement in Russia.

In theory, an optimally set reserve price leads to an optimal outcome in all standard auctions. In reality, however, it is difficult to identify the optimal reserve price. In public procurement auctions, a higher reserve price may lead to a higher competition for the contract, because more suppliers will find the contract profitable. Thereby a higher reserve price may lead to lower prices. But on the other hand, if competition in the market is already quite low or the risk of collusion is high, a higher reserve price will just lead to higher contract prices. The controlling bodies in Russia become suspicious when the reserve price in public procurement auctions is too low because they are afraid it is a sign of collusion between the procurer and the seller. Indeed it may be the case that the reserve price is set low to exclude other sellers from competing, thus acting against efficiency. Using data on public procurement of gasoline in 11 Russian regions in 2011-2013, we show that a higher reserve price did not lead to lower contract prices, and that low competition in the private market was a major obstacle to efficiency.



Why is the reserve price important?

The reserve price is widely discussed in the auction and procurement literature. Standard auction theory says that an optimally set public reserve price results in the optimal outcome in all standard forms of auctions with risk-neutral agents and independent private values (Myerson, 1981). But practice is far from pure theory. The procurer does not have all information to set the optimal price and this leads to losses in social welfare (Klemperer, 2004; Dimitri et al, 2006).

There are several concerns for a practitioner here. First, there is the question of whether the reserve price should be known to everybody in advance (Dimitri et al, 2006; Brisset et al, 2015; Eklof&Lunander, 2003). Second, the reserve price influences the entry decision and competition for the contract (Klemperer, 2004; Krishna, 2009; Wang, 2016). Generally, a higher reserve price may lead to higher competition for the contract, because more suppliers will find that contract profitable, which may in turn lead to lower prices. But on the other hand, if there is a high probability of collusion in the market, a higher reserve price will just lead to higher contract prices due to coordinated behavior of the potential sellers (Wang, 2016). The procurer could use lower reserve prices to decrease gains from collusion (Krishna, 2009), but in a corrupt environment a lower reserve price is treated as an instrument to restrict entry for the favor of preferred bidders in exchange for bribe (Guide to Combating Corruption & Fraud in Development Projects).

Hence, there are various arguments for and against setting the reserve price in public procurement auctions higher rather than lower. We are interested in showing which of them hold true in practice, or in other words, do higher reserve prices lead to lower contract prices in public procurement auctions?

In Russian public procurement, the reserve price in an auction is set by the procurer and is visible to

everybody. Moreover, before April 2011, procurers were free to set the reserve price, and they could easily set it unreasonably high, and then share the surplus with a seller. Starting from April 2011, procurers are obliged to prove that the reserve price is set at a reasonable level. In the explanations to the Law from Ministries of Economy and Finance, there are recommendations to set the reserve price higher rather than lower. Regulators are much more afraid of corruption than a high price of the contract.

Using data on public procurement of gasoline in 11 Russian regions in 2011-2013, we show that a higher reserve price did not lead to lower contract prices, and that low competition in the private market was a major obstacle to efficiency.

How does public procurement of gasoline work in Russia?

To make it clear how auctions in Russia are held, we will now present some details on Russian public procurement of gasoline.

First, the public procurement law is the same for all Russian regions. Second, the detailed information on public procurements – including calls for bids, chosen procedure, auction protocols, and supporting technical documentation – is published online at a unified website. If the reserve price is below 500000 rubles, public buyers of gasoline may choose between sealed-bid “paper” auctions and open-bid electronic auctions. If the reserve price is above 500000 rubles, they should use open electronic auctions.

To set the reserve price, a procurer may ask a few firms to provide estimates of an expected price of the contract at which they would agree to sign the contract. Alternatively, procurers may search for price information on the Internet or in other open sources on prices of goods and services (some gasoline stations publish its prices online, e.g.). The reserve price may then be calculated on the basis of these prices.



The procedures start when a procurer publishes the call for bids, stating basic characteristics of the contract and the reserve price. In sealed-bid auctions the bidders send their price quotations and the supporting documents. The bids are opened simultaneously, and the lowest bid (or the earliest bid in case where two or more equal prices are announced) wins. Open-bid auctions are conducted in two stages. By the first deadline all perspective bidders should provide a statement of interest, including the supporting documents and in some cases monetary deposits. Procurer may assess the statements of interest and exclude the firms that do not meet the basic requirements at the bidding stage. At the second stage, the preselected bidders show up at the auction and make descending open bids. The lowest bid wins the contract.

Data, empirical strategy, and results

To figure out whether higher reserve prices lead to lower contract prices in public procurement auctions, we used data on public procurement procedures available at a unified official public procurement website. In particular, we collected data on all public purchases of gasoline with octane number 92 at the regional level in 2011-2013 in 11 regions of Russia (1559 observations).

Among the characteristics of the procurement procedures, the most important are the *number of bidders*, the type of the procurement *procedure* (sealed-bid or open), and the characteristics of the contract (the *volume* and *duration*). We also take into account the *number of price quotations* the procurer uses to calculate the reserve price and some other characteristics of the purchase: the *number of procurers* in centralized purchase, the *number of purchases* of gasoline this procurer made in 2011-2013, and whether the procurer requested some special conditions from the seller (e.g., that the seller should have a *network* of gasoline stations).

The information allowed identifying:

- Procurements with only one bidder;
- Procurements with no or a very small price decrease as a result of the auction;
- Procurements with a reserve price higher than the market price;
- Procurements with a reserve price higher than the maximum of the price quotations.

Using these new variables, we test whether the probability that there is only one bidder (which is not what a regulating body would wish to see) correlates with auction characteristics and the fact that the reserve price is higher than the maximum of the price quotations (implying it is unreasonably and probably inefficiently high).

Table 1 Regression results

VARIABLES	Probability One bidder	Probability discount = 0
one bidder		1.074*** (0.115)
open auction	0.749*** (0.0973)	-0.191* (0.115)
volume	8.62e-06*** (2.51e-06)	-3.03e-06 (1.96e-06)
duration	0.000828* (0.000454)	0.00209*** (0.000610)
number of price quotations	-0.126*** (0.0436)	0.386*** (0.0539)
reserve price is higher than max of quotations	-0.469*** (0.108)	0.560*** (0.136)
Constant	-0.264** (0.126)	-0.694*** (0.160)
Observations	931	932

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

We also test whether the probability that there is no price decrease during the auction (discount equals zero) correlates with the auction characteristics and the fact that the reserve price was higher than the maximum of the price quotations or just higher than the market price.

Table 1 shows that a higher reserve price does not lead to a higher competition, but leads to higher probability of the situation that there will be no



price decrease at all. Hence, there is no evidence that setting the reserve price at a higher level will attract more bidders and result in lower contract prices.

Conclusion

Auctions are viewed as one of the best ways to achieve lower prices. But in reality there are many factors that make this questionable. In this policy brief, we focus on the regulation of the reserve prices in public procurement. Is it reasonable to recommend procurers to set high reserve prices? We look at a specific market with high entry barriers, and a relatively low number of suppliers active on the public procurement market. Such markets face high collusion risk. We show that high prices do not attract more bidders and auctions with reserve prices set higher than all quotations end up with no price decreases during the auction. A big share of auctions (46% in our data set) in Russia is inconsistent (only one bidder comes to bid), and in such an environment high reserve prices can only increase government spending. It is more reasonable to follow the ideas mentioned by Krishna (2009) and use low reserve prices to decrease contract prices and, thus, gains of suppliers from colluding behavior, even if it happens. Our study shows that general recommendations that do not take into account market specifics could not help procurers achieve efficient results.

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