Estimation of Antitrust Policy Efficiency by Diffusion Markers on The Example of The State Purchase System

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Abstract

A sustainable development of the sectoral markets should be viewed through the prism of market structure types and the factors of their management. The difference of market structure types requires different instruments of competition policy, which is a set of consistent measures implemented by state in order to ensure the conditions for the competitiveness of economic entities, the increase of Russian economy efficiency and competitiveness, the modernization of enterprises and the creation of conditions to ensure citizen needs in goods services by cost-effective way. The article analyzed the problems of violation determination in the course of public procurement. The aim of the work is to develop an approach to the monitoring of procurement procedure correctness. In the course of the study, the regulatory framework was analyzed in the field of public procurement, as well as the most frequent violations encountered in procurement activities. The result of the work is the development of an approach to monitor the procurement activities based on deviation markers, which can be used as the tool for the initial identification of suspicious transactions by state and municipal authorities. The article was prepared within the framework of the scientific project No. 16-06-00062 supported by Russian Foundation for Basic Research.

Keywords: Competition policy; Antitrust regulation; State procurement; Deviation markers; Violations.

1. Introduction

State procurement, which constitutes the bulk of public sector spending, is one of the main factors of the regional economy sustainable development. The increase of the volume and the scope of state orders serves as the factor of aggregate demand growth to support and stimulate domestic producers and regulate the sectoral structure of the regional economy, which is especially important during the periods of economic crises and sanctions. The volume of purchases by state-owned companies and state-owned corporations in RF increased by 23% during 2015 as compared with the previous year and reached 23.1 trillion rubles, which exceeds 30% of GDP. Bazyuk (2015). At the same time, about 90% of state contracts are concluded on the basis of noncompetitive procedure results Chulkov (2016). The share of failed trades is very high, both in terms of quantity and value. These facts indicate indirectly a low efficiency of procurement. This hypothesis is confirmed by official statistics. The investigating authorities opened 165 public procurement cases in 2013, 217 in 2014, and 203 in the first quarter of 2015. For the period of 2014-15 the prosecutor's office identified and eliminated more than 180 thousand offenses in this area, more than 42 thousand persons were prosecuted (Blaug, 2001; Safiullin M. R. and Safiullin, 2011).

2. Methods

In this research to develop a system of deviation indicators, we needed to do a document study to determine the indicators. In order to develop this system, the main regulatory legal acts governing public procurement activities, the main scenarios of fraudulent actions were reviewed, and they drew up the list of indicators indicating possible violations during procurement.

With a thorough study of Russian Federation 4 specialized federal laws(44-FL , 223-FL, 135-FL and 63-FL)that the regulation in the field of public procurement is carried out on the basis of them, In our opinion, it is possible to single out 11 the most frequently committed violations occurring during the procurement process (Arkov, 2016). They can be divided by stages as follows (Project "For fair purchases):

Stage 1. Purchase planning
• the purchase at an unreasonable price;
• the purchase of unnecessary goods (works, services) and luxury goods.
Stage 2. The preparation of documentation and publication
• technical task for a specific product;
• the bidding for "own" company;

• unrealistic terms of contract execution;

Stage 3. The accept of applications and bidding

• cartel auction;
• the contract was not signed with the participant who offered the minimum price;
• the contract value differs by less than 5% of the initial price;
• the victory of the same company with one customer;

Stage 4. Contract execution

• non-application of fines for violations;
• the acceptance of goods / works / services of inadequate quality;
• the change of contract price after bidding

These types of violations have a negative impact on the efficiency of procurement, but their identification is seriously hampered due to the large volume of purchases. Despite the variety of procurement procedures, in our opinion, it is possible to identify a number of deviation markers indicating these violations. The deviation marker is such a numerical parameter of a business process, which is being changed depending on the correctness of its implementation. According to our assumption, if during some procurement procedure a violation was committed, it will be reflected in the change of certain parameters, which will be the markers of deviation (Churiev, 2013).

3. Results and Discussion

Let's consider the possibility of deviation marker use on the example of the following violation types: "a technical task for a specific product" and "bidding for "own" company." To identify such violations during the study of the documentation on procurement, you can take the presence of specific trademarks and the names of manufacturers as a guide. If we consider these types of violations through the prism of their detection without a detailed study of the tender documentation, then the presence of a "specialized" technical task will serve first of all as the barrier for many potential suppliers to apply for the competition. It turns out that the indicator deviation marker, showing the possibility of violations "a technical task for a specific product" and "bidding for "own" company", is the number of companies participating in the competitive procedure. This marker can be used as a signal for a suspicious purchase, as well as an indicator characterizing the overall level of the procurement system development. For example, if 2 or less participants take part in a tender procedure, then, in our opinion, this is a reason to check the purity of the purchase. In the case when the decrease of the average number of bidders is observed in the total number of bidding procedures, this may serve as a reason for the audit of the entire procurement system in the organization (Safiullin A. R. and Mezentsev, 2017).

In our opinion, the definition of such markers has its advantages and disadvantages for various aspects of procurement procedures. The deviation of the marker values from the established standards cannot indicate the reason for such a deviation. The determination of the reasons will require a detailed study of the procurement documentation. Besides, the reason for rejection may not be associated with any violation. At the same time, the use of the approach based on the use of indicator deviation markers is well suited to analyze large amounts of information. Since the deviation indicator is calculated, it becomes quite easy to assess the nature of its changes. It is also assumed that the calculation of one deviation marker will require the use of one or two data groups (in the case of the average number of bidders, this is the total number of tenders and the total number of their participants), which will make it possible to automate the process of procurement efficiency monitoring and make it continuous (Baumol, 2001).

A variety of deviation markers may be more accurate than a single indication of possible violations. So for such a violation as "the purchase at an unreasonable price", you can set the marker "the comparison of 3 or less analogous products during the initial maximum contract price determination". At the same time, it is likely that the tender procedure with an overestimated initial maximum contract price will have an element of potential participant limitation, including also by the means of technical specifications. Thus, it turns out that the deviation by two indicators at once will indicate a specific type of fraud most likely.

Table 1 shows the author deviation markers for various violation monitoring and control committed during the procurement process (Safiullin M. R. *et al.,* 2016).

Table-1. The examples of variance markers in procurement

Indicator	Designation	Violation	Substantiation
Average number of bidders	K1	Specification for a specific product. Bidding for "own" company.	The number of participants in the competition will differ from the average indicators, because the conditions of the competition for most potential suppliers will be impossible a priori / the information on the competitive procedure will be inaccessible.
		The posting of documentation with errors.	
The comparison of 3 or less analogous products during the initial maximum contract price determination	K2	A purchase at an unreasonable price.	The price with this violation is most often justified on the basis of several "their" analogues comparison.

		The bidding for "own" company.	It is an indirect indicator for this violation, since overstatement, in our opinion, is often only a stage in a fraudulent scheme implementation.
The share of consulting services in the overall structure of procurement	K3	The purchase of unnecessary goods (works, services) and luxury goods.	The effectiveness of this group of purchases is difficult to assess, therefore, their increase can be regarded as the increase in the purchase of unnecessary goods and services.
The number of company names participating / winning in competitive procedures for one group of goods, works, services.	K4	The bidding for "own" company. / Cartel auction / The winning of the same company with the same customer.	These violations affect the indicator directly. The problem with its determination may be the selection of groups of goods.
The number of contracts with the value below the initial maximum contract price by 5% or less.	K5	The contract cost differs by less than 5% from the initial. / Cartel auction / The bidding for "own" company.	Price reduction is one of the key parameters of procurement competitiveness, which is limited at these violations.
The restart of bidding procedures for the same lot.	K6	The bidding for "own" company. / The winning of the same company with the same customer.	This indicator, within the framework of the presented violations, is aimed at a situation identification in which the other supplier still participates in the procurement procedure, whose offer is better than the proposals of "their companies".
The contract is not concluded with the winner of the tender procedure / not with the participant who offered the minimum price.	K7	The bidding for "own" company. / The contract is not signed with the participant who offered the minimum price. / The bidding for "own" company.	The indicator is used to identify unfair methods (for example, to identify the scheme "ram"). At the same time, the conclusion of a contract with a supplier who offered not a minimum price may be reasonable, but the approach to procurement efficiency, based only on the analysis of price parameters, is controversial in our opinion.
The number of applications for repairs, the claims for purchased goods, services, works.	K8	The acceptance of goods / works / services of inadequate quality.	In our opinion, the purchase of low-quality goods, works, services will manifest itself over time in the form of various defects. It is difficult and unprofitable to hide this fact for a functional customer, therefore the information on the indicator will be reliable with a high degree of probability. The disadvantage of the indicator is its retrospectiveness, with the help of it you can identify questionable purchases that took place much earlier.
The volume of additional agreements to the contract / the change of contract price after bidding.	K9	The change of contract price after bidding. / The purchase at an	In our opinion, the change in the actual contract price may occur also through the conclusion of additional

		unreasonable price.	agreements. Besides, the possibility of an additional agreement conclusion allows "their" suppliers to declare the price unacceptable in advance for bona fide participants of the procedure.
The number of open tenders in the general structure of tender procedures	K10	The bidding for "own" company.	The general indicator of tender procedure transparency.
Contract fulfillment term is less than 5 days	K11	Unreal contract terms.	Short terms of contract execution will indicate the fact of errors / irregularities in most cases and in the course of the procurement, however it is difficult to judge their specific form based on the indicator data.

Several factors were taken into account during the selection of deviation indicators, which can be used to analyze the procurement procedures. The first is the availability of information for analysis on whether the indicator complies with the barrier value. For example, the study did not use such an important indicator of the completed purchase quality as "The number of claims for purchased goods and services", the data for which are not presented on the resource selected for the collection of primary information. The second is the coverage of the most frequently committed violations with indicators in the field of procurement, cited in the second chapter of this work. The degree of indicator coverage was determined by experts, based on the analysis of violations. The third criterion is the possibility of an objective assessment of deviation fact existence. This criterion applies especially to the indicators that are not subject to direct numerical evaluation, such as: "purchase price overpricing", "the purchasing of unnecessary goods and services, luxury goods", "the entering into a contract with an intermediary", "too short terms of contract execution".

4. Conclusions

The distribution of variance markers by procurement stages and violation types shows the following. Most types of violations are characterized by the presence of 1-2 markers, which, as a rule, are developed specifically for these types of violations. This fact indicates that when the monitoring system based on deviation markers develops, there is a risk of an excessive increase of markers. Besides, the deviation by one marker, as was already mentioned, can not be guaranteed to indicate a deviation. The distribution of markers by the stages of procurement testifies that a small number of markers is established at the stages of "procurement planning" and "contract execution". If during "contract execution" stage, markers serve mainly to detect the violations committed earlier, then they are preventive in nature during procurement planning and their number increase at this stage can significantly improve the effectiveness of monitoring (Buccirossi *et al.,* 2013).

The methodology was tested on 50 competitive procurement procedures conducted from 2015 to 2016 inclusive by various state and municipal authorities, as well as large companies. As the part of the study, procurement was divided into 3 types:

- Type 1 - the purchases of essential goods, office equipment, consumables, performed on a regular basis with a unit price of less than 50 thousand rubles (24 purchases fell into this subgroup);

- Type 2 - the purchases of goods with the price of more than 50 thousand rubles per unit, unique equipment, real estate (13 purchases fell into this subgroup);

- 3rd type - the purchase of works and services (13 purchases fell into this subgroup).

The processing of the research results was carried out using the cluster analysis methods based on SPSS Statistics 19 software. Following the results of the result processing, the following main conclusions were generated:

- for the purchases of the 1st and the 2nd type, those risk indicators are the most important, which reflect the change in the number of participants, overpricing, insufficient competition among the participants and dumping;

- for the purchases of the 3rd type, minor deviations are characteristic for all indicators presented in the study;

- for the purchases of all types by a risk indicator, reflecting a significant reduction in the final price relative to the IMP, the barrier value should be increased to 40% of IMP, since the price reduction by 25% or more is normal for most competitive purchases;

- for the procurement of spare parts to equipment belonging to the 1st type, it is advisable to apply a more detailed monitoring procedure, since the observations presented in the sample showed the strongest deviations in terms of purchased product overpricing (Heide *et al.,* 1998).

5. Summary

Thus, it should be noted that the presented list of indicators is not exhaustive and requires a detailed study for various organizations. In particular, it is necessary to establish the numerical values of the indicators, which can be

considered the norm or the deviation from the norm. The use of deviation indicators, in our opinion, contributes not only to the identification of violations at different stages of procurement, but can also serve as the basis for management decisions in the cases where the deviation of indicators is not associated with specific violations. The development of a deviation indicator system is possible due to the addition of new indicators corresponding to new types of violations. Such an improvement of the system does not require additional actions in relation to the previously adopted indicators, which allows you to respond quickly to the changes in the external environment and reduces the effectiveness of fraudulent scheme use.

Acknowledgements

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