

## INFORMATION TRANSPARENCY IN PUBLIC PROCUREMENT: HOW IT WORKS IN RUSSIAN REGIONS<sup>1</sup>

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**ABSTRACT.** It is an open question whether more transparent public procurement leads to more efficient outcomes. In the paper we show how transparency of the public procurement in Russian regions is correlated with key factors that influence outcomes of procurement procedures – competition, corruption, and control. Using the open information we evaluate availability and usability of different types of information presented on regional procurement websites by constructing a number of indices. Our empirical study shows that the transparency of information is significantly and negatively correlated with the level of corruption in the region and increases the utilization of control mechanisms. We also show that more transparent systems are associated with higher levels of competition.

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## INTRODUCTION

There is a common belief that transparency of information, especially when it concerns the performance of the public sector, is a panacea for the evils of bureaucracy. It is also considered an important method of preventing procurers and suppliers from opportunistic behavior in public procurement procedures. In Russia, the first attempts to increase the information transparency of public procurement were introduced in 2005 with the Federal Law on Public Procurement (94 FL). In addition to harmonizing the federal legislation on public procurement, the reform was supposed to fight corruption and to optimize government spending. Increased information transparency and strengthened procedural regulations were considered the main tools for achieving these goals. According to the new law, public procurers were obliged to publish calls for bids and the protocols results of the procurement process (protocols) on designated federal, regional, and in some cases municipal websites<sup>1</sup>.

The electronic presentation of this information, together with the possibility of placing bids (for the sealed-bid auctions) and notifications of interest for the tender (for open-bid auctions) online, was supposed to open up the regional markets and help to create a unified Russian market for some of the goods, works, and services procured by the government. The increased competition in these new unified markets was supposed to attract more bidders per procedure and help to reduce government spending on public procurement. The electronic presentation of information could also reduce the asymmetry of information in public procurement procedures and induce a more comprehensive strategic behavior of the suppliers.

But the measures introduced by 94 FL, including those targeting information transparency, seem to have had little effect on the public procurement system in Russia. A pilot survey conducted at the Public Procurement: Achievements, Technology, and Perspectives International Forum in 2009 shows that suppliers and procurers believe that the lack of information transparency hinders competition in public procurement in Russia. (Podkolzina and Balsevich (2009)). The link between competition and the lack of information on current procurements was mentioned by 21,4 % of respondents mention and on the rules of the procedure itself by 23,2% of respondents. The low

level of perceived information transparency may be explained by the lack of standardized rules for the presentation of information on the regional procurement websites and the resulting lack of uniformity in the presented documentation. For example, the structure of the website and functions available for users such as search options, standard document forms, and the amount of the retrospective information presented are not regulated by the federal law and are instead decided at the regional level. The law specifies only the names of documents (call for bids, auction protocols, etc.) that must be uploaded to the website, and the basic information they must contain (starting price of the auction, date of the procedure etc.). However, it is sometimes difficult to find information about a given procurement procedure in the database or to access relevant information that is published in documents of various formats. In addition, some of the regional and municipal websites do not contain all of the relevant retrospective information required by law. As a result, regional procurement websites differ widely in appearance, structure, and, consequently, information transparency.

The goal of this paper is to measure transparency of information for regional procurement websites in Russia and explore how transparency is correlated with the key factors that influence outcomes of public procurement procedures – competition, corruption, and control.

It is said that as “transparency has been sent on so many different world-improvement missions, the term has been stretched to the point of making its unqualified use almost meaningless” (von Furstenberg (2001), p. 107). In order to make the following discussion more precise, it is necessary to define transparency and efficiency in public procurement. In this paper, transparency<sup>ii</sup> refers to the visibility and accessibility of information on the rules of the public procurement (timing, start price, etc. for a certain procurement, and judicial issues, controlling bodies, etc. for all the procurements), on the characteristics of the goods and services that are procured, and on the results of the procurements (bids, prices, contracts, etc). Efficiency refers to the ability of procurers to procure the goods of desired quality at the lowest price at which suppliers are willing to deliver them. Two problems that may influence the efficiency of the public procurement are corruption and collusion. Corruption refers to vertical relations where, for example, a procurer takes a

bribe from the supplier to let him win the contract, to write the specification of the goods so that only this supplier may deliver them, or to ignore the low quality of the supplied goods. Collusion, i.e. horizontal relations, comprises any type of agreement between suppliers, for example, not to compete with each other during the public procurement procedure. Moreover, collusion and corruption are often interrelated and might reinforce each other. As it is difficult to measure the efficiency of public procurement systems, we instead focus on assessing the influence of information transparency on the intermediate characteristics of the system that could affect efficiency: competition, corruption, collusion, and control.

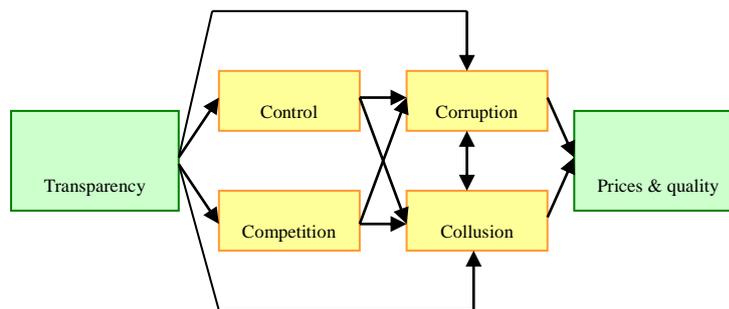
The structure of the rest of the paper is as follows. In the next section we discuss possible channels of interrelationship between transparency and the results of procurement. We then describe the methodology of an index for estimating information transparency. After presenting the results of the index, we show how the level of transparency is important for the key factors that may influence the outcome of procurement procedures.

#### **TRANSPARENCY OF PUBLIC PROCUREMENT AND EFFICIENCY: LITERATURE REVIEW**

How may transparency influence the probability of corruption and collusion? First, transparency makes it easier for other firms in the market, citizens, and government agencies to control the public procurement procedures and the results of these procedures. Thus, greater transparency leads to better control and less corruption or collusion. Second, the level of transparency is connected with the level of competition for the public contracts. Finally, transparency may influence the behavior of the suppliers and, consequently, the probability of collusive behavior. However, as we will discuss below, competition, corruption, and collusion are also interrelated.

The summary of the possible channels of interrelationship between transparency and the results of procurement is presented in Figure 1.

**Figure 1. Transparency and the results of public procurement**



Even in a setting without corruption and collusion, distribution of information among participants and the way it is disclosed may influence the outcome of a procurement process by changing the bidding behavior of the suppliers. Arora et al. (2007) show that in a complete market structure with more transparency, the procurer's expected surplus will be higher than that in the incomplete market structure. If informational costs raise the marginal costs of firms, then improved transparency reduces costs, which in turn, lowers prices and enhances national welfare. (Evenett, Hoekman, 2005, p.178)

In addition to the direct effect of information on the outcomes of procurement procedures, there are a number of mediating channels between transparency and efficiency – competition, control, collusion and corruption. Transparency may have conflicting effects on these channels. In the following section we will describe these channels in more detail.

### ***Transparency and Corruption***

In some cases, an increase in the level of transparency could increase corruption, while in others it could decrease the corruption level (Kolstad and Wiig, 2009; Bac, 2001; Copier and Piga, 2006). If we treat corruption as the existence of potential connections to those we can pay a bribe, then we face two effects of increased transparency (Bac, 2001). On the one hand, increased transparency means more information about officials who are responsible for procurement decisions and who can

potentially influence the result of the procedure. If we follow this logic, increased transparency could result in increased corruption. On the other hand, a highly transparent system simplifies the usage of different control mechanisms and increases the probability of getting caught, therefore resulting in low levels of corruption. The improvement in transparency should be large enough to overcome the first effect and to decrease corruption.

Bergot, Jaeger and Grimes (2010) present several examples of eliminating corruption through increased level of transparency in public procurement. Notable cases include the Philippines, where an e-procurement system of government agencies was established to allow public bidding on government contract, and Chile, where “the ChileCompra e-procurement system has been used to allow government officials and citizens to compare the costs of bids to and services purchased by the government” (Bergot, Jaeger and Grimes, 2010, p. 265).

### ***Transparency and Collusion***

The relationship between transparency and collusive behavior is apparent. In public procurement procedures, colluding firms agree on the bids they are going to make. For collusion to be sustainable there should exist a credible threat of punishment for the firms deviating from the agreement. If the information on all previous bids is available to the firms, it may decrease the costs of collusion, because the deviating behavior becomes visible and it is easy to punish the deviators (Amaral, Saussier, Yvrande-Billon, 2009, p. 167; Boehm, Olaya, 2006, p. 442). On the contrary, if bidders do not have access to information, collusion will be difficult to sustain (Amaral, Saussier, Yvrande-Billon, 2009, p. 167).

### ***Transparency and Control***

Information transparency decreases monitoring costs (Boehm, Olaya, 2006, Kolstad and Wiig, 2009) and makes it possible for different parties who are interested in the results of public procurement to control the performance of public procurers and suppliers. These parties include citizens or civil society organizations that may control procurers through administrative channels (complaints to regulators), firms who may find evidence of corruptive or collusive behavior, and government agencies. E-

government initiatives promptly provide information to citizens and thus “increase the transparency of government and empower citizens to monitor government performance more closely” (Kim, Kim, Lee, 2009, p. 43).

Transparency alone is not enough to increase the efficiency of public procurement. It is said that “as information and transparency are not simply synonymous, transparency and accountability are not synonyms either” (Von Furstenberg, 2001, p. 113). So to make information transparent is in some sense a necessary condition, but the sufficient condition is that “there must be another party that is interested in perceiving that which is transparent and making some use of it” (Von Furstenberg, 2001, p. 107). In other words, transparency decreases the costs of monitoring, but it is useless if the monitoring system (by government agencies or civil society) is not established or not credible.

#### ***Transparency and Competition***

Although competition in the market (the number of firms) is determined by the market forces and may be considered as given, transparency may influence the level of competition for the market (the number of bidders). Transparency may influence a firm’s entry decision in a number of ways. First, if information on procedure is difficult to find and is distributed among firms who have some agreements with the procurer, then it is likely that the “honest” firms will not be able to apply on time and will not participate. On the contrary, if information is transparent, it will increase the participation of “honest” firms (Boehm, Olaya, 2006, p. 438). Second, if information is not transparent, firms may be afraid of unfair treatment, favoritism and uncertainty, and decide not to participate (Amaral, Saussier, Yvrande-Billon, 2009, p. 167). “Transparency is further likely to have positive effects on entry by signaling trust in the process” (Boehm, Olaya, 2006, p. 440). Empirical studies using data on Japanese public procurement show that a policy shift to greater transparency led to an increase in the average number of bidders (from 8.2 bidders under discretionary practices to 13.7 bidders under transparency) (Ohashi, 2009, p. 272).

But it is not always true that transparent market attracts more suppliers. High transparency could mean more information about the firms’ costs. If firms are characterized by

heterogeneous costs, then transparency would be profitable only for low-cost firms (Zhu, 2004). Firms with higher costs may choose not to enter the market. This choice could be crucial for public markets if they tend to be more transparent than private markets, which could result in a lower level of competition in the public market.

### ***Control and Corruption/Collusion***

The costs of corruptive and collusive behavior include the costs of hiding true information on the quality of bidders or existing agreements, and depend on the probability of detection of such activities. Transparent public procurement allows for the participation of different parties in monitoring, and hence raises the probability of detection. As greater transparency reduces monitoring costs and raises the probability of control, effective control therefore leads to a decrease in corruptive and collusive behavior because the costs of such behavior would increase (Boehm, Olaya, 2006, p. 440). Transparency also leads to greater accountability of procurers, firms, and controlling agencies, because so that it becomes easier to find the “weak link”.

The important point here is that transparency, as was discussed before, may help to sustain collusion. But at the same time, transparency makes it possible to monitor the behavior of the firms. The increased control, on the contrary, weakens collusive agreements. Thus more transparency enables effective control that might outweigh the higher risk of collusion (Boehm, Olaya, 2006, p. 442).

Arrowsmith (1998) points out that “provision for proper monitoring and verification is a crucial aspect of transparency” (p. 816), and argues for simplicity in information requests: if firms and procurers need to specify too much in order to follow the transparency guidelines, it could increase the cost to maintain the whole system. Kostland and Wiig (2009) argue that it is worth having an “ability to process the information, and the ability and incentives to act on the processed information” (p. 524). Dixit et al. (2001) stress attention to the lack of public control over the state sector and point out that transparency is not the only issue that contributes to the overall efficiency of public activity.

***Competition and Corruption/Collusion***

The degree of competition is strongly correlated with the levels of corruption and collusion. It is clear that if more firms participate or may potentially participate in a procedure, the costs of collusive behavior increase, due to the higher costs of coordination and cooperation (Amaral, Saussier, Yvrande-Billon, 2009, p. 167). Moreover, higher competition means tighter control, which in turn increases the costs of sustaining illegal agreements. In any case, colluding firms are forced to make lower bids in the presence of competition and monitoring (Ohashi, 2009, p. 269).

The influence of competition on corruption is not univocal. On one hand, as in the case of collusion, higher participation raises accountability of the procurer, and thus might lead to lower corruption. Higher competition also means lower rents and lower bribes, hence the procurers may not have incentives to engage in corruptive behavior (Amaral, Saussier, Yvrande-Billon, 2009, p. 168). On the other hand, monitoring agencies may take high activity of the bidders as a signal of honest competition, leading to less control and more discretion of the parties and, consequently, to an increase in corruption and collusion. Less competition, on the contrary, is more likely to attract regulator's attention. When the competition is low, the rents are high, so in that case controlling agencies also have more incentives to control procurement procedures (Amaral, Saussier, Yvrande-Billon, 2009, p. 168). The high pressure of a competitive market may also provoke firms to give bribes to survive in the severe competition (Boehm, Olaya, 2006, p. 437)

***Corruption and Collusion***

The influence of transparency on corruption and collusion together is not univocal, because corruption and collusion reinforce each other. Measures implemented to prevent corruption may make it easier to collude (Amaral, Saussier, Yvrande-Billon, 2009, p. 167). A corrupted procurer may benefit from collusive firms, because in that case he or she may ask for higher bribes (Boehm, Olaya, 2006, p. 439). In this case it might be reasonable of the procurer to help the firms to sustain collusion (Lambert, Sonin, 2003, in Boehm, Olaya, 2006, p. 438). For example, "officials, on behalf of the bidding ring, [may] punish deviators by not qualifying them" (Boehm, Olaya, 2006, p. 268). If

“honest” firms suspect the high level of corruption, they may not enter the procurement procedure if they estimate the probability to win as very low. It might also be reasonable for the corrupted procurer to hinder the competition in the market, and hence to make collusion easier to sustain (Ohashi, 2009, p. 439).

In summary, an increase in the level of information transparency in the public procurement may have different effects on the characteristics of the system. It may increase the possibility of corruption by providing the information necessary to create a link to a procurer, or decrease the possibility of corruption by increasing the possibilities of control mechanisms. The same is true for collusion: transparency may increase the possibility of collusion by providing the relevant instruments of “punishment” of the deviators, yet may decrease the possibility of collusion by facilitating entry and increase in competition.

#### DATA AND METHODOLOGY

As the information transparency of public procurement is considered an important goal, several attempts to estimate the level of transparency and to compare it between regions have been made. The most prominent is the transparency rating of public procurement websites by the Expert Rating Agency<sup>iii</sup>. This rating refers to the estimation of the first year results of the 94 FL implementation made in 2007. It represents the weighted sum of the objective measures (number of visitors, the transfer speed etc.), the results of experts’ survey, and the survey of the website’s users. In 2010, the Center for Development of Freedom of Information calculated the rating of public procurement websites transparency based on expert web-content analysis<sup>iv</sup>. They used 192 parameters, most of which characterize not the procurement information system itself, but information on the related federal agencies, their structure, and their activities. The information on procurement is represented only by one out of ten groups of the estimated parameters. Both indexes, as well as others reviewed by the authors, are mostly based on the experts’ opinion rather than on objective information. The step towards estimating an objective information transparency rating was made by McHenry and Pryamonosov (2010). They estimated the results of the first year of 94 FL implementation by looking at the content of the designated regional public procurement websites. They focused their research on the implementation of the steps towards electronic procurement, though public procurement in

Russia in 2007 as well as today was far from following the standards of e-procurement. McHenry and Pryamonosov use the list of indicators of a well-functioning e-procurement system together with a set of indicators accounting for some regulative measures specific to the Russian environment, such as the reference to background information, procurement opportunity information, interface capabilities, and elements of e-purchasing system, checking whether the regional site provided each of the features or not.

The methodology used in this paper is similar to that of McHenry and Pryamonosov, though we propose a different set of indicators. Here, the focus is shifted from e-procurement quality to the comparative advantages of providing information on different stages of the procurement process. To measure the transparency of regional procurement websites, we collect the data on the structure of each of 83 regional public procurement websites, as well as the information and functions that were available before and after the implementation of the procurement procedure. To measure the transparency of information, we examined the information available to the general public without registration or logging in to the system. We create the list of retrospective and perspective information and the website features crucial for a well-functioning public procurement system.

Although some of the regional public procurement websites publish information on municipal public procurement and information on the procurement procedures not addressed by 94 FL, we focus our attention only on regional procurement procedures that fall under 94 FL. When estimating the availability of information, we examine a number of procedures (from 10 to 15) representing open bid auctions, sealed bid auctions (call for quotations) and open tenders, thus reducing the probability of bias in our estimates.

Our checklist includes four groups of parameters that are important from the information transparency perspective: (1) current procurements, (2) completed procurements, (3) search functions, and (4) additional features. Four indicators summarize the availability of information and functions for each group of parameters.

***Current Procurements***

The first group of parameters considers the availability of information on the current procurements (calls for bids). Here, we have first checked whether this information is structured well, assigning 1 to the “structured” websites. For example, the information may be presented in a database or table format, with each line representing a perspective procurement procedure with all the documents, such as a call for bids, the draft of a contract, modifications to the call for bids, related documentation etc. linked to it. It is also important that the user is able to see all the relevant information immediately on the website, instead of it being buried under a series of clicks. We have accounted for that by estimating the availability of information on the type of procedure chosen by the procurer, organizational details (deadlines and requirements), the name and the contact information of the procurer, starting price and specifications of the good, work, or service demanded etc. on the scale from 0 to 3. To each of the parameters in this group we have assigned 0 when the information was not available at all; 1 when it was available only in attached documents; 2 when it was available in the short summary of the planned procurement procedure; or 3 when it was available in the summary table.

***Completed Procurements***

The second group of parameters considers the availability of retrospective information on completed procurements. Similar to the first group of parameters, we have assigned scores on the scale from 0 to 1 to the structure of the representation of the information, and scores from 0 to 3 to the number of parameters describing the details of the procedure. In addition to the parameters of the first group, we have looked for the information on the bidders (names, contact information etc.), bids and winning bids, characteristics of the contract, and the date of the oldest retrospective information available.

***Search Functions***

The search engine is one of the most important features of the public procurement website. We have included four search criteria in this group of indicators: keyword search, good/work/service category search, search by the identification number of procedure, and search by the identification number of the government contract (or the availability of direct links between

the data on procurement and data on awarded contracts). For each of these four indicators we have assigned the score on the scale from 0 to 2: 0 if the website integrated search engine does not allow for this type of search; 1 if this type of search is present, but does not work properly; or 2 if it is present and produces relevant results.

#### ***Additional Features***

We also looked for additional features and information that the regional site could provide. The parameters in this group are the following:

- summarized statistics on public procurement in the region;
- government contracts registry (with the information on contracts, suppliers, dates, etc);
- the laws that regulate the public procurement (including the regional laws);
- the web forums or the possibility to ask the question and receive feedback from to the regional authorities, procurers and other suppliers;
- the links to controlling agencies and possibilities to post and follow a claim; and
- the availability of standardized templates for documentation, both for the regional suppliers and procurers.

The resulting index of the information transparency is a weighted sum of the four main indicators described above. Each of the first two indicators (current procurements and completed procurements) give 35% of the resulting index, the indicator of search functions gives 25%, and additional features give 5%. The weights assigned to each indicator reflect our estimation of the importance of information of a certain type for the functioning of the public procurement system. The low weight assigned to the additional features indicator also reflects the fact that the variation in this indicator is rather low, as discussed below. The maximum possible value of resulting index is 100. We have also determined the “sufficient” value of the transparency index. This value indicates the following idea: some information (for example the relevant deadlines) should be visible to all users immediately;

some of the information (for example the quantity of the good, work or service required) may be listed in the web summary of the call for bid; while other information (for example the bidders' contact information) may be represented in the documents only. Similarly, we have determined the "formal" value of the index, which indicates the level of transparency that meets the requirements of 94 FL.

To address the question of usability of the information available for the formation of strategic behavior of the potential bidders in the region, we have also constructed an alternative index of information transparency that accounts for the relative quality of search related to the amount of information available. The second index is represented by the sum of the first two indicators multiplied by the relative measure of search quality.

#### REGIONAL SITES AT FIRST GLANCE

On the basis of the described methodology, the data on 83 regional public procurement sites were collected. Descriptive statistics on all the four indicators and the resulting indices of the information transparency are summarized in Table 1. The values of "sufficient" and "formal" indices are also included in the table. The brief description of the results is presented below.

**Table 1. Summary statistics**

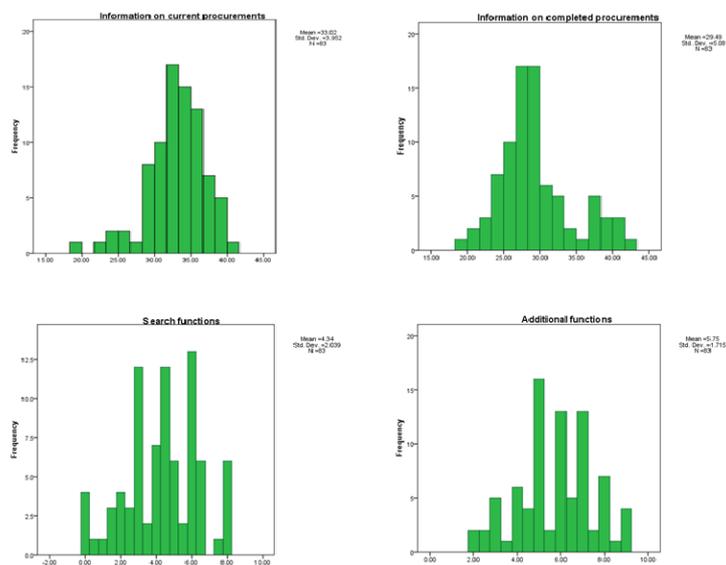
	N	Min	Max	Mean	Std. Deviation	Sufficient	Formal
Current	83	18.5	40.5	33	3.95	37	17
Completed	83	19.5	42.5	29.5	5.08	41	18.5
Search	83	0	8	4.3	2.04	8	0
Additional	83	2	9	5.8	1.72	9	2
Index1	83	33.3	83.1	58.4	10.73	82	25
Index2	83	0	81.5	35	18.95	78	0

#### **Current Procurements**

The potential maximum value of this indicator is 49. The maximum value in our sample is 40.5 (Table 1). The mean value is biased towards the maximum and the variance is not very high, which means that most regional governments try to keep the information on current procurements structured and updated. Most of the regional public procurement websites meet the formal

requirements of the law (the minimum estimated value of the index is higher than the formal one), and the “sufficient” value of the index is quite close to the mean value. Nevertheless, there are some regions that fail to make the representation of this information user-friendly and transparent. The distribution of the indicator values is presented in Figure 2 (upper left).

**Figure 2. Distribution of separate indicators**



**Completed Procurements**

The distribution of the indicator values is presented in Figure 2 (upper right). Interestingly enough, the results for the second indicator are much worse than for the first one. From the maximum of 57 points the highest rank value obtained is 42.5, with the mean of 29.5 (Table 1). The retrospective information on public procurement in many cases appears to be less structured and complete. The “sufficient” value of the index is much higher than the mean in our sample. Some of the relevant information is missing on the most of the regional websites. For example, only 12 regions out of 83 provide the identification number of the public contract that was signed with the winning supplier, and only 5 out of 83 provide information on the contract details (such as

the duration of contract, degree of implementation, source of financing etc.).

**Search Functions**

The potential maximum value of this indicator is 8, and some of the regions in our sample have reached it. Yet there are a substantial number of websites with no integrated search engines at all. The number of declared but not working features in the sample is surprising. Even if the number of procurements per year in these regions is not very high in comparison with other regions, it may be rather difficult to find essential information. The distribution of the indicator values is presented in Figure 2 (bottom left).

**Additional Features**

The potential maximum value of this indicator is 9, and some of the regions in our sample have reached it. This indicator should be studied in greater detail in the future, since the simple 0 to 1 scale cannot capture the variation in the quality of additional features presented on the websites. The distribution of the indicator values is presented in Figure 2 (bottom right).

**Figure 3. Distribution of information transparency indices**

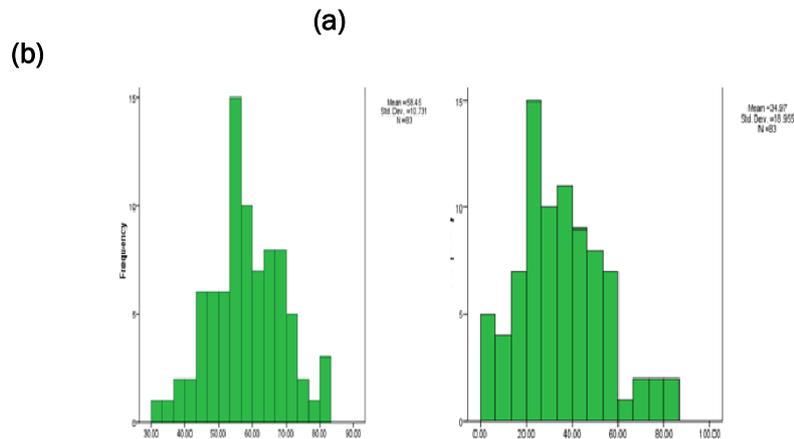


Figure 3 describes the distribution of two aggregate indices. As mentioned above, index 1 shows a general estimation of information transparency, and index 2 shows the transparency of the information used in strategic decision making by firms. The

distribution of first index of the information transparency is presented in Figure 3 (a). The mean of the index is biased towards the higher values of the index. However, only 6% of the regions obtain the rank of 75 or higher. Figure 3 (b) shows the distribution of the second index. This distribution is skewed to the left in comparison with Figure 3 (a). When we try to estimate the information that is possible to browse and to find, the performance of the regions is rather poor. Only 4% of the regions obtain the rank of 75 or higher. Participants of public procurement system lack information about the public market structure. As we discussed in the literature review, information shortage could prevent collusion, but may also lead to lower completion and control. In the next section we estimate the direction of the effect of information transparency on competition, control, and possibilities of creating “unfair” collusive competition.

### **HYPOTHESES AND EMPIRICAL RESULTS**

In the following section we study the relationships between various indicators of information transparency of Russian public procurement and the indicators of corruption, competition, and control in the system.

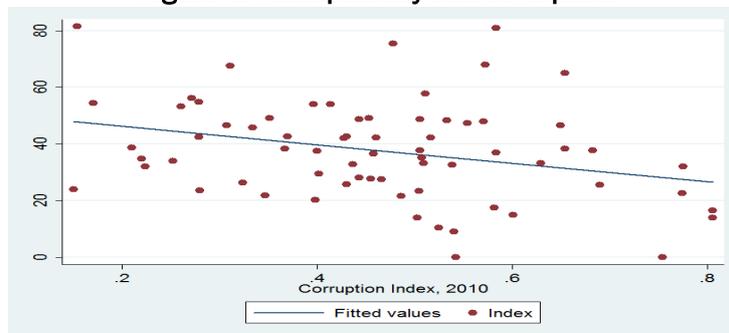
Since the information provided by most Russian regional public procurement websites is not sufficient to establish a “corrupt” link between the procurer and a prospective supplier, more transparency should be associated with less corruption in the system. Higher levels of transparency should also be associated with higher competition, although since the average number of bidders per public procurement procedure is rather small for all regions, this effect may be weak. Finally, higher levels of information transparency should increase control over the system.

#### ***Transparency and Corruption***

To address the issue of the possible link between transparency of the public procurement system and corruption, we look at the relationship between transparency indices and the regional index of corruption in 2010<sup>v</sup>. The estimated levels of corruption (higher values of the index are associated with higher corruption) and both of the transparency indices are negatively correlated. Yet there are rather large variations in transparency

for any given level of corruption, especially for the “middle corruption” regions. Hence, we should treat the degree of this relationship with caution. Nevertheless, as the behavior of suppliers and controlling government bodies in the region may depend on the perceived level of regional corruption, we should control for the level of corruption when assessing the links between transparency, competition, and various types of control. Figure 4 shows the relationship of the main transparency index (Index 1) and the estimated level of corruption in the region.

**Figure 4. Transparency and corruption**



### ***Transparency and Competition***

As a measure of competition in the system, we use the average number of bidders per public procurement procedure in 2010 provided by the Russian Bureau of Statistics for each region. To assess the impact of information transparency on the level of competition, we run a set of OLS regressions controlling for the level of corruption as discussed before. As the level of competition may depend not only on the characteristics of the public procurement system itself, but also on the overall market conditions, we also control for differences in gross regional product. Brief results of the estimation are presented in Table 2 (with full results available in Table 1 of the Appendix).

The availability of the information itself captured by the first index has a weak impact on the level of competition in the regional public procurement system, but the quality of search functions seems to be more important for competition. The importance of search functions for attracting additional bidders is supported by the set of results for the second index and the fact that the excessive amount of information not supported by

appropriate search functions (Index 1 – Index 2) has a negative effect on competition. Yet as the average number of bidders for all regions is rather small and is heavily correlated not only with the availability of ex ante information, but also with the availability of ex post information, it might also reflect the existence of stable cartels creating “spurious competition”.

**Table 2. Transparency and competition**

	Correlation	Level of significance
Index 1	+	*
Search	+	**
Index 2	+	**
Ex ante information*search	+	**
Ex post information*search	+	**
Index1-Index2	-	**

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

### ***Transparency and Control***

The Federal Antimonopoly Service (FAS) is the main controlling body for the public procurement system. Citizens or prospective suppliers may register complaints to the regional antimonopoly authorities in order to document unprofessional behavior by the participants of the procurement procedure (including the procurer or tendering commission). The system of complaints is useful if the firms and citizens have access to the information about the procedure in question and similar procurement procedures in the region. If the interested parties have no access to the relevant information, they have no grounds to file a complaint: hence, the degree of utilization of the complaint system should depend on the availability of information. To measure the degree to which this method of

control is utilized, we use the share of complaints to the regional antimonopoly authorities in procurement procedures in the region in a given year (information provided by FAS, <http://www.fas.gov.ru>). As the system of complaints to the FAS is partially supported by the courts system, we include the measure of regional courts quality (the rate of appeals returned to the court by inter-regional authorities<sup>vi</sup>) as one of controls. The brief results of the OLS estimation considering the dependence of complaint rate on the information transparency are presented in Table 3 (full results are available in Table 2 of the Appendix). Information transparency seems to have a positive effect on the utilization of complaints as a mechanism of control. Yet the excessive amount of unstructured information, as well as the link between transparency and competition, has a negative effect on the utilization of control.

**Table 3. Transparency and complaint rate**

	Correlation	Level of significance
Index 1	+	*
Court appeals rate	no	
Search	+	**
Court appeals rate	no	
Index 2	+	**
Court appeals rate	no	
Index1-Index2	-	**
Court appeals rate	no	

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

The availability of information on any given public procurement procedure might also help the controlling body to run the investigation on the complaint. If the system of control has no additional source of information, we should see a shift towards rightfully filed complaints in the more transparent regions. Yet it is plausible that the controlling body has access to additional information and sees the system from a broader perspective. To see if the behavior of the controlling body depends on the degree of information transparency in the region, we check if the percentage of complaints that were recognized as rightful and satisfied depends on the information transparency indices. The brief results of the corresponding OLS regressions are presented in Table 4 below (full results are available in Table 3 of the Appendix). The amount of information available seems to have no impact on this measure. The court appeals rate refers to the percentage of cases returned to the local arbitral court by the court of higher rank and indicates the quality of control in the regional court system. It has a significant negative impact on the percentage of claims satisfied by the local court, implying that the decisions of the court might be linked to the level of control in the court system, but not in the public procurement system itself.

**Table 4. Transparency and percentage of satisfied complaints**

	Correlation	Level of significance
Index 1	no	
Court appeals rate	-	**
Index 2	no	
Court appeals rate	-	**
Index1-Index2	no	
Court appeals rate	-	**

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

A procurer might also appeal to the transparent information on his or her procurement procedures while bringing a case of a breached contract to court. The level of information transparency might affect the number of cases brought to court by the procurer in two ways. A procurer who runs a nontransparent system might be more corrupt and hence have “better knowledge” of his or her suppliers and fewer incentives to bring a case to court. A more transparent system might also attract more opportunistic suppliers to a given procedure, increasing the chance of breach. On the other hand, a transparent system combined with a well functioning court system might create the incentives to fulfill the contract obligations and keep a good reputation for the suppliers. The brief results of the OLS regressions considering the effect of information transparency on the percentage of contracts performed by the “black-listed” suppliers (and hence confirmed to be “fundamentally breached” by court) in a given year (information provided by FAS, <http://www.fas.gov.ru>) are presented in Table 5 (full results are available in Table 4 of the Appendix). The availability of well-structured information on the calls for bids has a significant positive impact on this measure, implying that “excessive” transparency might attract opportunistic bidders to the public procurement procedures. The availability of unstructured information, on the other hand, has a negative impact on the percentage of breached contracts.

**Table 5. Transparency and percentage of contracts canceled by court**

	Correlation	Level of significance
Index 1	no	
Search	+	**
LogGRP	-	**
Corruption	+	*/**

Index 2	+	*
Ex ante*search	+	**
Ex post*search	no	
LogGRP	-	**/**
Corruption	+	**/**
Index1-Index2	-	**
LogGRP	-	***
Corruption	+	**

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

### CONCLUSION AND DISCUSSION

To measure the variation in the level of transparency in regional public procurement systems in Russia, we construct several indicators representing the availability and usability of information on current and past procedures, quality of search options, and availability of additional features on the regional public procurement websites. On the basis of these indicators we compose two indices of information transparency: the first estimates the representation and structure of information, and the second measures the usability of this information. Evaluation of these indices shows a significant variation in information transparency of public procurement in Russian regions. The existence of this variation allows to estimate the influence of information transparency on the efficiency of public procurement system through assessment of the effect that information transparency has on corruption, competition and control.

First, we confirm that the transparency of information is significantly and negatively correlated with the level of corruption in the region, although the direction of this link is not evident. Second, we demonstrate that more transparency is associated with higher competition, and that the usability of information is more important than mere availability. In fact, the presence of excessive amount of unstructured information seems to hinder competition instead of promoting it. Yet we should keep in mind

that the effect of transparency on competition is rather small. As the usability of ex post information that is usually associated with facilitating collusion has the same effect on competition as the usability of ex ante information, we should also consider the possibility of presence of “unfair” and spurious competition in Russian public procurement.

Third, we show that transparency of information increases the utilization of control mechanisms in Russian public procurement, though the behavior of regulator does not depend on the level of transparency. Finally, we demonstrate that the increase in transparency level leads to a higher percentage of breached and canceled contracts. The link is especially evident for the usability of ex ante information, implying that a higher level of transparency may attract more opportunistic suppliers from the market. The usability of information is also more important here, than the mere availability.

Our analysis confirms the links between transparency and opportunistic behavior of both procurers and suppliers in public contracts. In Russian public procurement, transparency is an important channel of influence on the outcomes of procedures. But it should be noted that although the law regulates only the content of the information provided, its usability and structure of presentation is much more important for increasing competition and providing incentives and instruments for control. Even the best level of information transparency would not increase efficiency unless regulators monitored this information and provided sufficient instruments for control over the system.

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## APPENDIX

Table 1. Transparency and competition

VARIABLES	(1) Competitio n	(2) Competitio n	(3) Competitio n	(4) Competitio n	(5) Competitio n	(6) Competitio n
LGRP	0.105 (0.0846)	0.0979 (0.0840)	0.0950 (0.0838)	0.0975 (0.0843)	0.0960 (0.0833)	0.0951 (0.0828)
Corruption 2010	0.175 (0.530)	0.237 (0.527)	0.250 (0.525)	0.250 (0.531)	0.221 (0.518)	0.241 (0.516)
Index1	0.0158* (0.00882)					
Search		0.0982** (0.0466)				
Index2			0.0109** (0.00491)			
ExAnte information * Search				0.0205** (0.00994)		
ExPost information * Search					0.0215** (0.00941)	
Index1 - Index2						-0.0237** (0.00982)
Constant	0.683 (1.088)	1.240 (1.023)	1.317 (1.019)	1.291 (1.024)	1.343 (1.017)	2.261** (1.088)
Observatio ns	69	69	69	69	69	69
R-squared	0.088	0.104	0.111	0.102	0.115	0.122

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

**Table 2. Transparency and complaint rate**

VARIABLES	(1) Complaint rate	(2) Complaint rate	(3) Complaint rate	(4) Complaint rate	(5) Complaint rate	(6) Complaint rate
LGRP	0.00212 (0.00837)	0.00146 (0.00828)	0.00102 (0.00829)	0.00153 (0.00829)	0.000819 (0.00830)	0.000857 (0.00821)
Corruption 2010	0.0160 (0.0477)	0.0230 (0.0476)	0.0229 (0.0473)	0.0242 (0.0479)	0.0192 (0.0466)	0.0226 (0.0465)
Court appeals rate	0.00711 (0.00616)	0.00747 (0.00610)	0.00779 (0.00610)	0.00722 (0.00610)	0.00826 (0.00612)	0.00830 (0.00608)
Index1	0.00135* (0.00076 5)					
Search		0.00858* * (0.00407)				
Index2			0.000939* * (0.000429)			
ExAnte information * Search				0.00179* * (0.00086 4)		
ExPost information * Search					0.00184* * (0.00082 5)	
Index1 - Index2						- 0.00207* * (0.00086 3)
Constant	-0.0696 (0.104)	-0.0248 (0.0985)	-0.0155 (0.0982)	-0.0210 (0.0986)	-0.0101 (0.0981)	0.0670 (0.104)

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Observations	67	67	67	67	67	67
R-squared	0.084	0.102	0.107	0.100	0.109	0.120

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Standard errors in parentheses

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

**Table 3. Transparency and percentage of satisfied complaints**

VARIABLES	(1) Satisfied complaint s	(2) Satisfied complaint s	(3) Satisfied complaints	(4) Satisfied complaint s	(5) Satisfied complaint s	(6) Satisfied complaint s
LGRP	-0.00847 (0.0149)	-0.00931 (0.0148)	-0.00930 (0.0149)	-0.00852 (0.0149)	-0.00976 (0.0149)	-0.00905 (0.0148)
Corruption 2010	0.122 (0.0849)	0.130 (0.0850)	0.126 (0.0849)	0.126 (0.0860)	0.124 (0.0837)	0.123 (0.0842)
Court appeals rate	- 0.0286** (0.0109)	- 0.0281** (0.0109)	-0.0279** (0.0110)	- 0.0286** (0.0109)	- 0.0273** (0.0110)	- 0.0276** (0.0110)
Index1	0.00162 (0.00136)					
Search		0.0104 (0.00727)				
Index2			0.00103 (0.000770 )			
ExAnte information * Search				0.00187 (0.00155)		
ExPost information * Search					0.00211 (0.00148)	
Index1 - Index2						-0.00209 (0.00156)
Constant	0.370** (0.184)	0.424** (0.176)	0.435** (0.176)	0.430** (0.177)	0.442** (0.176)	0.518*** (0.187)
Observation s	67	67	67	67	67	67
R-squared	0.160	0.169	0.165	0.161	0.168	0.165

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

**Table 4. Transparency and percentage of contracts canceled by court**

VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)
	Canceled contracts	Canceled contracts	Canceled contracts	Canceled contracts	Canceled contracts	Canceled contracts
LGRP	- 0.00352 **	- 0.00389 ***	- 0.00380 ***	- 0.00391 ***	- 0.00363 **	- 0.00393 ***
	(0.00141)	(0.00139)	(0.00140)	(0.00139)	(0.00141)	(0.00138)
Corruption 2010	0.0152*	0.0174*	0.0167*	0.0180*	0.0152*	0.0170*
	(0.00828)	(0.00813)	(0.00820)	(0.00819)	(0.00818)	(0.00803)
Court appeals rate	- 0.00130	-0.00116	-0.00118	-0.00121	- 0.00119	-0.00106
	(0.00102)	(0.00100)	(0.00101)	(0.00099)	(0.00103)	(0.00101)
Index1	0.000178 (0.000136)					
Search		0.00151 ** (0.000711)				
Index2			0.000139* (7.61e-05)			
ExAnte information * Search				0.000326**		

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				(0.00015 1)		
ExPost informati on *					0.00021 4	
Search					(0.0001 48)	
Index1 - Index2					- 0.00033 3**	
					(0.00015 2)	
Constant	0.0377* *	0.0445* **	0.0456* **	0.0453* **	0.0456* **	0.0595* **
	(0.0169)	(0.0159)	(0.0161)	(0.0159)	(0.0163)	(0.0174)
Observati ons	67	67	67	67	67	67
R- squared	0.164	0.198	0.184	0.200	0.168	0.202

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Standard errors in parentheses

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

## NOTES

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<sup>i</sup> One of the numerous recent amendments to 94 FL adapted on January 1 2011 obliges regional procurers to post all the relevant information on the regional-level procurement procedures to the unified federal website. In this paper we discuss the regional differences that were present in the system prior to this change. We should also note that although the new federal informational system introduced some unification, most of the cross-regional differences in the transparency of the information presented persist.

<sup>ii</sup> Here we combine different definitions of transparency in application to public procurement (Amaral, Saussier, Yvrande-Billon (2009); Gal-Or, Gal-Or, Dukes (2007); Zhu (2004))

<sup>iii</sup> <http://www.raexpert.ru/ratings/internet/g2b/>

<sup>iv</sup> <http://www.svobodainfo.org/ru/node/567>

<sup>v</sup>The report of the Ministry for Economic Development of Russian Federation "Situation with everyday corruption in the Russian Federation"

[http://www.economy.gov.ru/minec/activity/sections/anticorruptpolicy/doc20110614\\_027](http://www.economy.gov.ru/minec/activity/sections/anticorruptpolicy/doc20110614_027)

<sup>vi</sup> The index is constructed by the portal Pravo.ru. This index measures efficiency of arbitrage court of the region. High index means law position of the court in the rating. This estimations were built for 81 regional courts.