

THE IMPACT OF THE CHOICE OF EVALUATION CRITERIA AND THE TYPE OF TENDER ON THE AWARDING PUBLIC CONTRACTS (IN THE CASE OF CONSTRUCTION CONTRACTS AT THE LOCAL LEVEL IN THE CZECH REPUBLIC)

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Abstract

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Public procurement may be examined from different perspectives. Using the Czech Republic as an example, this study is devoted to examining the impact of decisions made by the contracting authority regarding a public tender on the tender process itself and on the outcomes of the tender. The contracting authority addresses a number of decision-making issues regarding public procurements. For example, it needs to decide between two types of criteria (choosing between a single-criterion evaluation or rather opting for several evaluation criteria). At the same time, the authority is free to choose among different types of award procedures while adhering to certain restrictions imposed by the Act on Public Contracts. Using a sample of 1,027 construction work contracts awarded in the Czech Republic, the study examines, in more detail, the impacts of individual choices made by the contracting authority (namely the type of evaluation criteria chosen and the type of procedure for awarding contracts) on the estimated and final price of public contracts. Recommendations on how to streamline the process of public procurement can be drawn from conclusions from the empirical analysis.

Keywords: contracting authority as a rational partaker, selection of an evaluation criterion, estimated value of a public contract, final price of a public contract, public procurement in the Czech Republic

INTRODUCTION

A large portion of GDP is reallocated via the institution of public procurement. In the Czech Republic, according to the Ministry for Regional Development, about 11–13% of GDP is allocated through the institution of public procurement. In the “Annual Report on Public Procurement in the Czech Republic in 2013” (p. 10) it is stated that the volume of the public procurement market is about 500 billion CZK. This is a considerable amount of public resources. It is therefore important to look for ways to increase the efficiency of public

procurement. Assuming that the public sector could manage greater efficiency in the awarding procedures as to generate a savings of one percent, it would be possible for the public sector save an additional 5 billion CZK. This is an undoubtedly large amount of public resources that would be eligible for use in other public programs.

Additional savings can be generated by different factors. These two factors relate to both formal (legal) public procurement procedures (see, e.g. Jurčík, 2007, 2012, 2014), as well as economic aspects of public competition (Strand, Ramada, Canton *et al.*, 2011). In this paper, we focus on examining some

of the factors that are related to the demand side of public procurement (activities of the contracting authority). The aim of this study is based on an empirical analysis of a sample of 1,027 public construction contracts (at the local level in the Czech Republic) to examine what role the selection evaluation criteria and the selection of the award procedure has on the final cost of procurement as well as recommendations for practice drawn from a theoretical exploration of generalized conclusions. Likewise, other factors which may influence the final price are the distribution of the market (Kuhlman and Johnson, 1983), collusion (Gupta, 2002), corruption (Miller, 2006), and factors determining the success of contacting (Měříčková Mikušová and Nemec, 2013; Horňáková, Špaček, 2013). The influence of these factors on the awarding of public contracts are not reviewed here. We have focused on analysing the impact of the choice of the evaluation criteria and the type of tender on the awarding of public contracts. The question is raised whether the choice of the evaluation criteria and the type of procurement procedure affect the final cost of the public contract.

The final (or “tendered”) price of the public contract is the price at which the contract was executed. The estimated price of the tender is the estimated value which the authorities stated in the tender documents. It is worth mentioning that there may exist other factors regarding the final price other than the ones we have examined here, (e.g. effects of economic crisis on the construction sector and the related changes in demand, etc.). These factors have not been included in this study.

International research performed on comparisons of public contracts (see e.g. OECD, 2002; Strand *et al.*, 2011; Iimi, 2006) is primarily focused on examining the transparency of public procurement and its impact on price. It is worth examining the impact which the evaluation criteria has on the awarding of public contracts in comparison to this previously presented idea.

One of the notable exceptions includes the work of Nemec, Měříčková Mikušová and Grega (2014). The authors, regarding the case of eight post-communist Central European countries and three Western European countries (Great Britain, France and Germany), explore the role the lowest price as the award criteria has in public procurement. They conclude that the Czech Republic, along with Slovakia and Poland prefer a mono-criterial evaluation of public procurement, while Britain, France and Germany prefer a multi-dimensional assessment of public contracts. In our study, this analysis is supplemented by an analysis examining the impact of the choice of criteria on the final price of public contracts.

Basis of Research

Contemporary theory examines public procurement from various aspects. It analyses e.g. public procurement as a procedure regulated by

the relevant legal regulation or as a contract under which a business transaction takes place (Bolton, Dewatripont, 2005). The contracting authority performs as the entity that in a public tender is seeking certain goods or services. The tenderer offers to fulfil the demand for goods or services to the contracting authority. At first glance it might seem that the awarding of public tenders and private purchases is not fundamentally different. In fact, it is not (see OECD, 2002). The private consumer decides for himself, while the contracting authority represents the public. It makes decisions for the public on numerous issues, such as these: What goods (in quantity and quality) are to be secured, in what form will they be secured and who will provide them? If the authorities within the public administration decide that the provision of goods (services) will be outsourced, it solves the problem of how the most appropriate tendering procedure will be chosen so that the tendering procedure is transparent and economically efficient.

The answer to the question of what goods are to be secured by the authorities of public administration, has a normative nature and is governed by the applicable legislation. The authorities of the public administration have selectively specified in legal regulations which goods and services they must secure. They are legally obliged to produce some goods and services directly. Others may be provided using alternative means (through outsourcing).

The question of in what form will the goods/services be secured goods lays within the realm of political decision-making (Prager, 1994) and takes the form of an institutional dilemma: what institutional form of securing the necessary goods and services should be chosen?

The authorities in public administration have an option of either producing the given goods themselves through in-house production, or to have them provided externally (through outsourcing). When the decision takes the form of in-house production, the relevant authority in public administration acts as a direct producer of the given product/service. In case the authority in public administration decides, in line with the relevant legal regulation, to outsource the given product and service, then it acts as the provider of the given product/service with a decisive criterion of quality and efficiency of the produced goods/services (Nemec *et al.*, 2008), or possibly other factors (see e.g. Levin, Tadelis, 2005).

In case the relevant authority in public administration rationally decides to provide the necessary goods or services using an external form, it becomes a public contracting entity. The conditions for using outsourcing are demonstrated, for example, by Nemec *et al.* (2014). For the delivery of public goods and services, a public tender is announced. The external provision of public goods and services is formally governed by the relevant legislation. In the Czech Republic it is Act No. 137/2006 Coll., On Public Contracts, as amended.

Under this act a public contract is specified as a contract performed under a written agreement between the contracting entity (purchaser) and the supplier(s). The contracting authority should not only monitor whether the public procurement is in compliance with all the formal (legal) procedures, but should also take into account the aspects of the rational allocation of public resources and the role of the factors that create a competitive and transparent environment. The creation of a competitive environment is related to the competitive effect and the effect of transparency. We presume that the more the public tender resembles the open market, the lower the price of public contracts will be. Thus, the more goods/services which are brought into public procurement tenders, the greater the chance that the final price will be lower compared with the expected value. The effect of transparency is related to the openness of the procurement procedure. We proceed from the assumption that the more open the tender process, the greater the chance that the final price of the procurement will be lower.

Verification of this proposition is currently being addressed by various authors. From European authors, we could mention the study by Strand, Ramada and Canton (2011) and GHK (2010) in this regard, where the authors demonstrate the impacts of openness in public tender processes on the efficiency of public procurement from the example of the E.U. The issue is also being studied in non-European countries. In this regard, the work of Iimi (2006) could be mentioned. He analyses public procurement in Japan and concludes that a one percent increase in the number of public tender applicants reduces the final cost of a public contract by 0.2%. Within the Central European region, this issue is dealt with by e.g. Pavel and Kubík (2011), Nikolovová *et al.* (2012), Kameník *et al.* (2011). From their research it may be concluded that the more open the type of award procedure is, the more it may be assumed that the final price of a public contract will be lower. Within our research we build on the results of these studies and by using a sample of public contracts, we attempt to examine how the choice of the tender procedure type affects the final price of the public procurement.

Further issue is the role of a choice of assessment criteria with respect to efficiency of public contracts. The Act on Public Contracts requires that contracting authorities specify within tender documents the relevant assessment criteria while they are left with an option to choose between a single assessment criterion (the lowest bid price) or, alternatively, they may assess submitted bids according to several criteria (based on so-called economical favourableness of a bid). The contracting authority is not strictly limited in its choice of assessment criteria. However, provided the sponsor decides upon assessment based on a single criterion, it is desirable that within this single-criterion assessment of bids there is observed the principle of

economy. In practice this means that the lowest bid price of a particular offer is economically acceptable only when the economic *purpose* of a public contract is being met. By meeting the economic purpose of a public contract we understand such a situation when the given offer with the lowest bid price meets entirely (completely) the objective.

The contracting authority should therefore within bids' ex ante analysis (assessment) select such a bid with the lowest price which potentially results in a fulfilment of the expected objective. Towards this end should the sponsor set its tender procedures (e.g. as minimum required utility properties of bids) so that public contracts that do not meet the indicators of objectives' fulfilment were excluded from the public tender. This will prevent a situation when within assessment of bids, there is from the portfolio of offers selected such a public contract which, although having the lowest bid price, fails to reach the objective. However, praxis of awarding procedures in the Czech Republic shows that such an approach is not standardly adopted. There comes to tendering of public contracts with the lowest bid price while such a public contract proves within its implementation phase to be systemically dysfunctional in that it does not produce the desired (expected) utility effects. Proper use of assessment criteria is therefore important prerequisite for a selection of the best offer. It therefore makes sense to ask what role does the choice of assessment criteria assume within the public tender.

Authors of this study have in their practice (especially over the course of training contracting authorities of public contracts in 2005–2014) met with opinions of contracting authorities that the criterion of the lowest tender price is fully sufficient for their assessment of bids. Contracting authorities in question even argued that use of a single assessment criterion results in a lower tendered price when compared to multi-criteria assessment of bids. They come from a guess (assumption) that when applicants for a public contract submit their bids, they primarily decide on the basis of the estimated price of a public contract, its corresponding assessment criteria (and in the case of multi-criteria assessment of bids also weights of the component assessment criteria). Arguing contracting authorities reason that when the assessment criterion is represented only by the bid price, in such a case the public contract applicant supposedly takes this information as a key factor for forming of its bidding strategy; they rationally decide to "squeeze" their bid to such a minimum bid price so as to maximise their expected tender victory while still remaining profitable for the case they ultimately succeed and win the tender.

The above-mentioned group of contracting authorities has expressed the view that multi-criteria assessment of tender bids leads to a different bidding strategy on the part of applicants for

a public contract. They believe in the case of multi-criteria assessment the given candidate “calculates” with more assessment criteria. Thus an applicant may “speculate more” with its bid price e.g. by considering in which criteria its offer probably betters the competition. In opinion of some contracting authorities this may lead to the fact that an applicant is not so much compelled to minimise (“squeeze”) its bid price for a public contract when compared to single-criterion assessment. Logical conclusion of this reasoning is in turn a conclusion (assumption) that assessment of tenders bids based on a single assessment criterion results in a more efficient (lower) final price when compared to multi-criteria assessment of bids. At first glance, this reasoning appears to be logical. It is based on the assumption of a rationally behaving tender applicant for a public contract, who chooses its bidding strategy so as to gain an extra profit from its bid when tender bids are multi-criteria assessed. Therefore, as some contracting authorities believe, an applicant may in the case of multi-criteria assessment of bids submit a slightly higher bid price than it would have offered in the case of single-criterion assessment of bids. The underlying reasoning is based on the fact that within multi-criteria assessment, the candidate may offer a higher bid price (compared to the price that would be offered should the bids be appraised using single-criterion assessment) since the contestant has an option to offset this “slightly higher bid price” through above-average meeting of other assessment criteria (such as offering a higher quality, delivery terms, etc.) of which the applicant assumes that will put it at a relative advantage compared to other contestants for a public contract. Is it really so? Are correct those contracting authorities who believe that adoption of a single assessment criterion results in the lower final price of a public contract? Are correct those contracting authorities who claim that a single assessment criterion represents a more appropriate tool for appraisal of tender bids? Also within this question we seek an answer based on the empirical data analysis.

MATERIALS AND METHODS

In this section of the paper, we ask the following research questions in the context of the competitive effect of ideas and the ideas of transparency effect:

1. What impact do the selection criteria and evaluation have on the final price of procurement?
2. What kind of impact does the choice of the type of tenders have on the final price?

For this purpose, we make use of examining a data file consisting of 1,027 public contracts for construction works (2013). These are public contracts which were contracted by entities from the regional and local governments. Our research sample differs from all cited Czech authors in that it includes a period of time after which an amendment

to the Public Procurement Act by Act no. 55/2012) came into effect.

The reason for opting for the research sample of public contracts from the building industry is due to the fact that public contracts for construction works represent the most homogeneous set of public contracts, in contrast to heterogeneous contracts for services and supplies. Empirical data were obtained from the publicly available portals Bulletin of public contracts (www.vestnikverejnychzakazek.cz) and Contracts plus (www.zakazky-plus.cz), using a random selection. From the given set of public contracts small-scale public contracts (for which is not required public tender announcement) were excluded as well as public tenders which lacked some of the following selective information: date of publication of the public tender; registration number; name, type and main activity of the contracting authority; name and type of the construction contract; type of award procedure; evaluation criteria; date of award of the public contract; number of bids; originally estimated price; final price and additional information, whether it is a simplified below-the-threshold tender procedure. The purging of these omissions from the original data file resulted in a sample of 557 public contracts, of which 482 were single-criterion contracts and 75 were multi-criteria contracts. These are public contracts where the contracting authorities are the local governments (counties, municipalities and public corporations). To analyse the sample, standardized methods for calculating the difference in prices were used, as were also utilised, for example, by Nikolovová *et al.* (2012), as well as descriptive statistics and regression analysis.

RESULTS

Selection of the Type of Criteria and Price of a Public Contract

The difference between the final and expected price may be expressed either as a price differential (calculated as a difference between the final price and the expected price) or in the form of a normalised difference in prices, as specified by Nikolovová *et al.* (2012).

Hence:

$$NRC = (FP - EP)/EP, \quad (1)$$

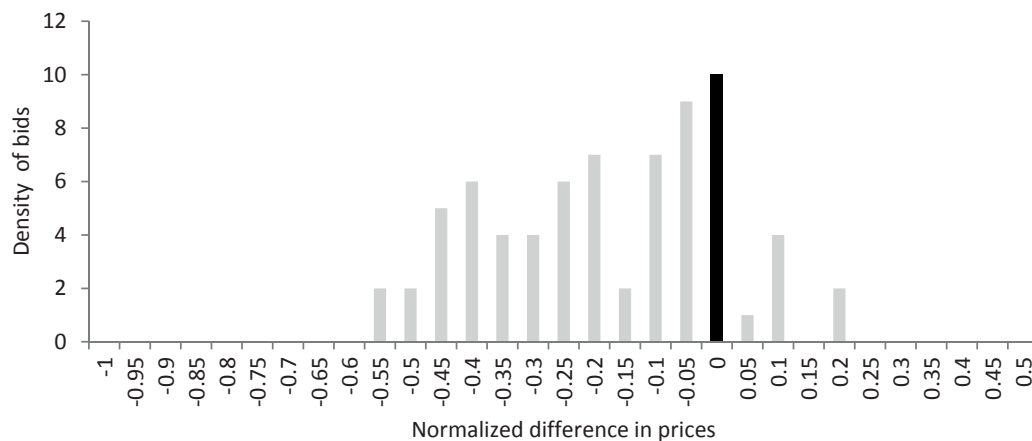
where

NRC ...is a normalised difference in prices,

FPis the final price of a public contract,

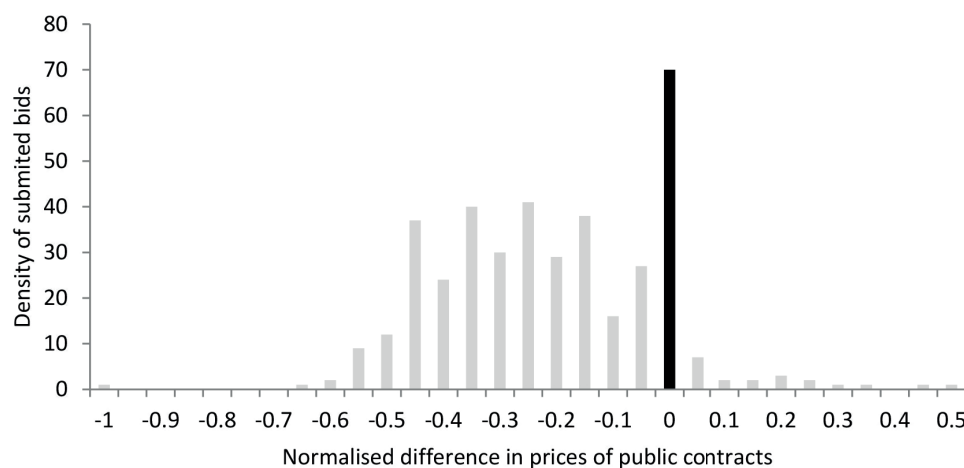
EPis the estimated price of a public contract.

The given formula states that provided the final and expected (estimated) prices are equal, the value of the difference is zero. If the price difference is negative, it means the final price is lower than the estimated price. If the final price is higher than the estimated price, then the price difference is positive. The higher the price difference from



1: *Normalised difference in prices of public contracts evaluated based on a single-criterion*

Source: Authors



2: *Normalised difference in prices (multi – criterially evaluated public contracts)*

Source: Authors

zero, the higher the difference between the final and estimated price is. In our examined case, when the contracting authority decided upon an evaluation of the public contracts based on a single-criterion, the distribution of normalised difference in prices was as follows (see Fig. 1 – Normalised difference in prices of public contracts evaluated based on a single-criterion).

As evident from Fig. 1, the normalised price differential ranges from -1 to $+0.5$. Most of the reviewed offers have a higher expected (estimated) price than their final price. In almost one fifth of reviewed public contracts (17.6%), both the estimated and final prices are identical. Regression analysis (OLS method) by single-criterion evaluated orders shows (Tab. III), that open types of award procedures demonstrate a relatively high degree in the competitive environment. There is an apparent negative correlation between open procedures and the price differential. This may be interpreted, for example, as revealing that when the number of bids increases, the final price drops.

If we follow the case where the contracting authority has decided upon an evaluation of public contracts based on multiple criteria, the results of the examined standardised differences in prices are as follows (see Fig. 2).

The normalised difference in prices of multi-criteria evaluated public contracts ranges from -0.55 to $+0.2$. Compared to single-criterion evaluated public tenders, the normalised difference in prices for multi-criteria evaluated public contracts demonstrates a narrower range. However, even in this case the majority of reviewed contracts are clustered on the left of zero. This means that the majority of surveyed public contracts have a higher estimated price compared to their final price. In the case of public contracts evaluated based on multiple criteria, it was rather complicated to construct an appropriate model. The number of bids for each type of procurement procedure (except for open procedures) was low. Therefore, it was necessary to exclude all other types of award procedures, including constants. The research results are shown in Tab. IV.

I: Representation of individual types of procurement procedures by the number of contracts (%)

Type of award procedure	Review of public contracts (%) of a given type	
	Single-criterion	Multi-criteria
Open	40	36
Restricted	3	13
Negotiated procedure with publication	9	9
Negotiated procedure without publication	10	
Simplified below-the-threshold procedure	37	42
Negotiated procedure without publication of tender notice/call for tender participation	1	

Source: Authors

II: Average normalised price by the type of award procedure

Type of award procedure	Average normalised price (single-criterion evaluation)	Average normalised price (multi-criteria evaluation)
Open procedure	-0.2894	-0.2589
Restricted procedure	-0.2698	-0.2369
Negotiated procedure with publication	-0.2149	-0.2728
Negotiated procedure without publication	-0.03619	-
Simplified below-the-threshold procedure	-0.236	-0.1444
Total	-0.2336	-0.2094

Source: Authors

Implications of the Choice of Type of Tender Procedure on the Final Price of Public Tenders

We shall now look at the effects of the type of award procedures on the final price of public tenders. Within the examined sample, all types of procurement procedures were adopted except for a tender dialogue. The various types of procurement procedures were represented as follows (see Tab. I).

In our analysis we assume that the most open tender procedure of all is the open procedure. It most closely approximates the conditions of the so-called completely competitive market. In this type of award procedure, an unlimited number of contracting entities participate whom cannot communicate with each other so as to influence, with certainty, the tender results. With regard to the competitive effect of an open tender procedure, it should hold true that vis-à-vis other types of procurement processes the open procedure will achieve the highest (negative) average normalised price difference. The results of the analysis are shown in Tab. II.

When interpreting the performed calculations, one should be reminded that the further away from zero the average price difference is, the greater the differences between the estimated price and the final price are. A negative difference means that the final (tendered) price is lower than the estimated (expected) price. As is evident from the calculations, the open procedures and restricted procedures had, in fact, the largest recorded difference (measured in absolute terms) and which was common in both single-criterion and multi-criteria evaluations of public contracts.

The average price differentials provided a certain “rough image” for assessing the influence of various kinds of procedures on price. A more precise answer can be given by a regression analysis. In our model, we assume the premise that the more open selection process is, the more space there is for the competitive behavior of bidders, which should lead to pressure resulting in a lower price. Our model of this hypothesis confirms this. The resulting equation is as follows:

$$\begin{aligned} \text{Normalized price} = \\ = -0.120583378615 - 0.0366775284093 \times \\ \times \text{type of tender procedure.} \end{aligned}$$

Open procedure and the restricted procedure have the biggest influence on the final price. For correctness it is also necessary to highlight the low explanatory power of the model. The adjusted coefficient of determination amounts to only 0.05617. However, we can say that this finding was confirmed by the studies of other authors (Paul, 2010; Pavel, Kubik, 2011). From the above analysis, we can deduce that the number of bidders will have a strong impact on the normalized price, i.e. true competition in the construction sector, since the greater the number of participants is, the harder it is for companies to be able to coordinate their behavior (Soukopová, Malý, 2013). The number of participants can also be influenced by the kind of tenders announced. A negative correlation was also found between this proceeding and the difference in prices for contracts evaluated based on multiple criteria.

III: *Dependence of a normalised price on the type of procedure (single-criterial contracts)*

Endogenous variable	Normalised price			
Exogenous variable	Individual types of procedures			
Number of observations	397			
	Coefficient	Std. error	t-statistics	Probability
Constant	-0.03866	0.027316	-1.415248	0.1578
Open procedure	-0.25076	0.031042	-8.078226	0.0000
Restricted procedure	-0.23116	0.057199	-4.041321	0.0001
Procedure with publication	-0.17623	0.040417	-4.360316	0.0000
Simplified procedure	-0.19738	0.031019	-6.363307	0.0000
Coefficient of determination	0.144483			
Adjusted coefficient of determination	0.135754			
F-test (probability)	0.000000			

Source: Examined sample. Own calculations

IV: *Dependence of a normalised price on the type of procedure (multiple-criterial contracts)*

Endogenous variable	Normalised price			
Exogenous variable	Individual types of procedures			
Number of observations	71			
	Coefficient	Std. error	t-statistics	Probability
Open procedure	-0.258930	0.046106	-5.616035	0.0000
Coefficient of determination	-0.548966			
Adjusted coefficient of determination	-0.548966			

Source: Examined sample. Own calculations

All of the considered variables are significant at the 1% level of significance

In a further analysis we focused on the effect of the expected value of the contract on the type of selection process. The resulting correlation coefficient 0.3581 is statistically significant at a significance level of 95%. There is an approximately moderately strong dependence, which can be interpreted so that open tenders were selected for contracts with a higher expected value and vice versa for contracts with a lower expected value utilizing closed tenders.

Similarly, we investigated the influence of the size of the estimated value of public contracts on the number of criteria, i.e. if the price has an effect on whether the contracting authority selects only one criterion, or, to the contrary, multiple criteria. Correlation analysis do not showed a statistically significant relationship between the expected value and the number of procurement criteria.

DISCUSSION

Overall it may be established that the competitive effect manifests itself at most with open types of tender procedures, for both single-criterion and multi-criteria evaluated contracts.

This can be explained by the fact that within an open procedure, the contracting entity invites bids from an unlimited number of tender participants. By this decision the contracting authority establishes framework conditions for the emergence of a competitive environment. Opting for a restricted

tender procedure also leads to a competitive effect. Within a restricted procedure, the contracting authority invites an unlimited number of candidates to apply to participation in the tender procedure and to demonstrate their qualifications. Next, the contracting authority invites selected candidates to submit their bids. These two types of award procedures thus demonstrate a high level of having a competitive environment. In the case of the negotiated procedure with publication, the corresponding process is similar to the restricted procedure. However, following the submission of tender bids, the contracting authority negotiates with the tender participants in order to achieve the most favorable conditions. Because the only evaluation criterion is the bid price, both the tender applicant and contracting authority act in the context of rational expectations and following a submission of bids the contracting entity negotiates with the relevant applicants so as to minimize the price. Because participants usually already have experiences from past public tenders where a bid price is the only evaluation criterion, they guess the bid prices of their competitors and accordingly submit their price quotation so as to maximize their expected winning chances while still offering a price that is on their part acceptable with regard to the expected profits. Since all rationally behaving tender applicants behave in the same way, the spontaneous result is a formation

of a competitive tender environment with an impact on the final price of a public contract. This may result in a low final bid price.

As is evident, a high difference between the final price and the expected price was recorded for the case of the negotiated procedure with publication, when contracts were evaluated based on multiple criteria. This is an interesting finding that may have been influenced by the relatively small number of data samples on multi-criteria evaluated contracts.

In contrast, the negotiated procedure without publication records a low degree of competitiveness. Within this procedure, the contracting authority invites specific tender applicants with whom the authority of public administration (contracting entity) first deals with on the conditions of fulfilling the public contract, and candidates

are, only thereafter, invited to submit their bids. This type of procedure proves a low degree of competitiveness. This may explain the fact that for negotiated procedures without publication under our examination, the difference in prices was hardly noticeable. It approaches zero. A low competitive environment has also manifested itself in the case under our examination in that this procurement procedure is where the public contract was most often awarded to a single supplier. The potential supplier therefore did not have to take into consideration any prospective competition in its price offer. The applicant acted rationally in a way that he expected his victory in the public tender with certainty and therefore brought his price offer closer to the estimated price. This demonstrated a minuscule difference between the estimated and final prices.

CONCLUSION

It is concluded that the empirical analysis is consistent with the findings of other studies investigating public contracts for construction. If there are differences in the findings between our research and studies mentioned, then it is probably due to the fact that the authors cited (Pavel and Kubík) are limited (unlike our research) to research on public procurement for extensive transport infrastructure (level of contracting authorities with the state administration). Another reason for the differences in findings may be that previous research is examining procurement for other award conditions set out by amendments to the Public Procurement Act. Our examined sample was entered under the new provisions, when (from 04. 01. 2012–12. 31. 2013) the financial limits changed for public contracts for supplies, services and construction. But we can assume that this change is reflected in the changes in the distribution of the number of contracts around funding limits.

Within examination of assessment criteria it was established that within the evaluated sample of public contracts there dominate (with an 86.5% share of the total number of assessed bids) single-criterion assessed bids. Although contracting authorities prefer single-criterion assessment of public contracts, there failed to get confirmed the “myth” of contracting authorities related to the considerable impact of single-criterion assessment on the final price of a public contract. Instead, some cases of public procurement rather raise a question whether single-criterion assessment of complex public contracts for constructions makes it possible to comprehensively encompass the utility value of a public contract.

This problem has not been the subject of research in our study. We intend to pursue it in detail, along with the search for answers to other questions unanswered in other future research resting on a representative dataset on public procurement. In a further evaluation, we have likewise deemed it useful to follow how previously tendered contracts evolve over time (i.e. at the post-contracting stage), for example in terms of additional costs and claims. In addition, the issue of whether changes in the cost in the post-contracting phase are directly related to the choice of the evaluation criteria still remains unexplored.

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