



THE TENTH YOUNG ECONOMISTS' SEMINAR

TO THE TWENTY-FIRST DUBROVNIK ECONOMIC CONFERENCE

Organized by the Croatian National Bank

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Manipulation and Active Waste in Public Procurement: Evidence from the Introduction of Discretionary Thresholds

Hotel "Grand Villa Argentina"

Dubrovnik

June 7, 2015

Draft version

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CROATIAN NATIONAL BANK

Manipulation and Active Waste in Public Procurement: Evidence from the Introduction of Discretionary Thresholds

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Abstract:

We present evidence of how policies that create opportunities to avoid open transparent competition in procurement lead to manipulation with procurement values by public officials. In our identification strategy we exploit a policy reform in which public bodies gained autonomy to preselect potential contractors below newly defined thresholds. By comparing distributions of procurement values before and after the reform, we isolate the effect of thresholds from time constant characteristics of the value distributions. Manipulations are revealed through bunching of procurements just below the new thresholds and cause a threefold increase in the probability that an anonymous firm obtains procurement just below the threshold. This suggests the presence of wasteful sorting of procurements, as many anonymous firms are empty shells, often participate in corruption scandals, and win procurements with higher contractual prices than firms with transparent owners.

Keywords: procurement, manipulation, active waste, discretion, thresholds, bunching

JEL classification: D73, H72, K42

*We would like to thank Orley Ashenfelter, Michal Bauer, Libor Dušek, Randall Filer, Jan Hanousek, Štěpán Jurajda, Klára Kalíšková, Peter Katuščák, Jan Kmenta, Botond Kőszegi, Barbara Pertold-Gebicka, Gerald Roland, Giancarlo Spagnolo, seminar participants at SITE and all anonymous referees for their helpful comments and insightful suggestions. We would also like to thank Jakub Tomíšek and Mário Vozár for their excellent assistance in data collection. Support from Grant SVV-2012-265 801 and GAUK Grant No. 626712 is gratefully acknowledged. All the errors remaining in this text are the responsibility of the authors.

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I. Introduction

Corruption disrupts resource allocation all over the world. Growth and economic development are hampered by the propping up of inefficient firms and allocating resources away from their socially most productive uses (Murphy, Shleifer and Vishny 1991, 1993). Corruption can be detrimental to public service provision as contracts go to firms allied to public officials rather than to firms with best price-quality solutions. The extent of this waste can be substantial; in OECD countries alone 13 % of GDP are redistributed through public procurement systems (OECD 2013).

Many European countries and also the United States therefore use open auctions to increase transparency, boost competition and reduce waste in procurement (Bulow and Klemperer 1996, Europe Economics 2006). However, public procurements valued less than certain thresholds can be allocated using restricted auctions where only firms selected by procurement officials can submit their bids.¹ Restricted auctions give flexibility to officials to select contractors from among the favored firms (for example, with specific past performance) and at the same time save administrative and time costs (Banfield 1975, Kelman 1990, Calzolari and Spagnolo 2009).

We contribute to existing literature by showing how these policies, which create opportunities for avoiding open procurement competition, can also lead to behavioral distortions as agents seek to game the rules. In particular, we are the first to show how giving flexibility to procurement officials to preselect competitors in procurement auctions leads to manipulation with procurement values. We further provide evidence that the manipulations lead to the allocation of contracts to firms that intentionally hide their owners and thus can conceal the potential conflict of interest of agents who are procurement officials and at the same time stakeholders in anonymous companies (Sharman 2010, United Nations 1998).

In our empirical strategy we employ a policy change that introduced new discretionary thresholds into the system of public procurements. Before the change,

¹ The US Federal Acquisition Regulation (FAR), for example, has the “simplified acquisition threshold” set at contract value \$150,000. Several reporting requirements do not apply below this value; the Miller Act (requiring payment and performance bonds) does not apply, etc.

public procurements had to be run through transparent auctions with open access for any potential contractor. After the change, public bodies gained the autonomy to preselect potential contractors to procurement if the anticipated procurement value was below the threshold. By comparing the empirical distributions of procurement values before and after the reform, we can isolate the effect of the thresholds from the time constant characteristics of procurement value distributions. This approach has been rarely used in the economic literature which usually analyzes the effect of thresholds on sorting in a static environment (e.g. McCrary 2008, Urquiola and Verhoogen 2009, Saez 2010). In our paper, the estimates of sorting are smaller when we incorporate the pre-reform distribution into our empirical strategy compared to the static approach.

Using our strategy we identify substantial bunching of procurements below discretionary thresholds. This finding shows that public officials strategically manipulate with procurement values and sort procurements below the thresholds. We discuss different motivations for the manipulations and their implications for welfare. Regardless of the intentions of public officials, we argue that the manipulations affect the association between characteristics of auctions (e.g. their format, transparency, flexibility) and procurement outcomes (e.g. quality of winners, contractual price, renegotiation costs, etc.). This strategic behavior of public officials therefore causes serious difficulty in the causal inference in procurement, which has not been considered in the previous literature.

In line with the growing field of academic forensic economics, which uncovers undesirable behavior of agents using policy changes and detection of irregularities in large administrative datasets, we hypothesize that public officials deliberately set the value of procurements below the threshold to hide their active waste and rent seeking behavior. Specifically, we find that suppliers with anonymous untraceable owners gain preferential access to procurements placed just below the thresholds. We consider this finding as a threat to the optimality and fairness of procurement, because anonymous companies are anecdotally known from many corruption scandals worldwide. For example, Gordon (2009) analyzes 21 cases of money laundering, in which anonymous

companies are often involved. Sharman (2010) summarizes many policy reports that identify the involvement of anonymous companies in organized crime, money laundering, tax evasion and corruption. Similarly we provide a list of corruption scandals from the Czech Republic in Appendix A.2. In our data we identify many of them just as empty shells. They tend to be younger and, on average, smaller than transparent companies. Our results therefore imply that the important motivation for manipulation of procurement values is to hide active waste and corruption.

In our analysis we use data that are unique in many aspects – namely, they contain information about more than 45,000 procurements worth more than USD 52 billion and include details about procurement contracts, winning contractors, and traceability of their owners. This data originates from the Czech Republic, a country where the procurement market corresponds to approximately 16 % of GDP and where cross-country comparisons indicate high levels of bribery and favoritism in public contracting (Transparency International 2012; World Economic Forum 2011). The policy reform in the center of our attention was implemented in the Czech Republic in July 2006.

In the related literature, a lot of attention has been devoted to theoretical drivers of corruption (Shleifer and Vishny 1993, 1994, Bliss and Di Tella 1997, Ades and Di Tella 1999, Acemoglu and Verdier 2000, or Burguet and Che 2004). Nonetheless, there are fewer empirical studies of corrupt behavior, mostly due to the scarcity of the relevant data and the secretive nature of corruption.

Our research is built on the growing field of academic forensic economics, which has turned recently to the empirical evaluation of corruption using policy changes (for instance, DiTella and Schargrotsky 2003, Bandiera, Prat and Valletti 2009) and the examination of discrepancies in large samples of administrative data (Reinikka and Svensson 2004, Fisman and Wei 2004, Olken 2006). In this literature, it is common to provide indirect evidence of corruption and rent-seeking rather than direct proofs. Forensic economics also demonstrates that incentives and institutional rather than cultural factors play an integral role in determining the prevalence of corruption (see Zitzewitz (2012) for a survey of academic forensic economics).

The optimal procurement mechanisms have been studied from the theoretical perspective, among others, by Goldberg (1977), Manelli and Vincent (1995) and Bajari and Tadelis (2001). In the empirical literature, Bajari, McMillan and Tadelis (2009) find that auctions may perform poorly when procurements are complex, contractual design is incomplete, or there are few available bidders. Spagnolo (2012) and Coviello and Mariniello (2014) analyze the impact of reduced transparency requirements below thresholds on various procurement outcomes. These empirical studies nonetheless do not reflect that public officials can sort procurements into more flexible and less transparent auctions and the subsequent endogeneity of the auction format with respect to procurement outcomes.

Similarly as in our paper, Liebman and Mahoney (2013) provide a possible link between sorting behavior in procurement and welfare losses. They demonstrate a spike in the volume of public spending at the end of fiscal years and a corresponding drop-off in procurement quality.

Several other studies have documented manipulative behavior generated by thresholds in other areas of the economy than in procurement (e.g. Wolfers 2006, McCrary 2008, Urquiola and Verhoogen 2009, Saez 2010, Camacho and Conover 2011, Chetty, Friedman, Olsen and Pistaferri 2011). All of these papers either analyze sorting in a static environment or do not use pre-reform distributions in the counterfactual estimation. Not considering the time-constant characteristics of the distributions can lead to biased estimates, as we show in this paper.

The rest of the paper is organized as follows. Section 2 discusses the institutional framework of the Czech public procurement and the policy reform that introduced new procurement thresholds. Section 3 describes behavioral responses that the thresholds may stimulate and their empirical implications. Section 4 describes the data from procurement contracts. Section 5 presents our empirical strategies for identifying manipulation of procurements. Section 6 gives the results and the empirical analysis of manipulation, along with robustness checks. Section 7 presents evidence that supports the hypothesis of active waste driving the manipulation. Section 8 summarizes our findings and discusses policy implications.

II. Institutional Background

Public Procurement, Corruption and Anonymous Firms in the Czech Republic

Public procurement constitutes one of the largest public spending processes in the Czech Republic. Yearly, about 13-16% of GDP (USD 31 billion in 2010) is spent on procurement of goods, construction works and services, making it one of the largest procurement markets among OECD countries (OECD 2013).

Czech public procurement has been criticized for favoritism, corruption and lack of effective institutional oversight. The World Economic Forum (2011) ranked the Czech Republic as low as 123rd among 142 countries in terms of the extent to which government officials show favoritism toward well-connected firms. Even though two public institutions oversee Czech public procurement, one of them, the Supreme Audit Office, does not have the authority to impose sanctions but simply to issue recommendations, and the other one, the Czech Antitrust Office, has been known for its rather passive and formalistic approach (Transparency International 2009).

The Czech institutional setting has also been characterized by the high number of anonymously owned firms competing in procurement. The Czech legal code specifically enables joint-stock companies to issue shares of two types: either they are nominated to concrete holders with shareholders' names directly nominated on the shares (or in the list of shareholders) or a joint-stock company can issue bearer shares, which entitle any current bearer of the shares to property rights. The share bearers are not registered anywhere and they are unknown both to the joint-stock company and to any controlling bodies. A change in ownership can be performed instantly without producing any traceable records. The owners of bearer shares usually cash in benefits from their ownership by sending legal representatives to general meetings of joint-stock companies. The loose regulation on bearer shares thereby facilitates concealing the connections between businesses and procurement officials.

Many firms with anonymous owners have played an important role in various corruption scandals, which is documented in Appendix A.2. These have resulted to pressure from many anticorruption organizations, including Transparency

International, demanding that anonymous ownership be banned in order to reduce corruption and other types of waste of public resources. The Czech government recently incorporated these recommendations into legislation. From 2014, bearer shares with anonymous owners are no longer legal.

Thresholds in the Anticipated Value of Procurements and Procurement Reform

Several characteristics of planned procurements determine the level of accountability and autonomy for procurement agencies in the Czech institutional setting. In this research, we concentrate on the *anticipated value* of procurements as it defines the level of discretion of procurement officials.

Different legislative thresholds in the anticipated value divide procurements into separate groups that differ in their mandatory requirements on transparency and open access to procurement. The rule is that the anticipated value should be set so as to approximate the anticipated financial obligations ensuing from the contract and it must be estimated prior to the start of the contract-awarding process. However, the procuring agencies estimate the anticipated value on their own and, as shown later, they can often set the value quite freely, so that lighter legislative restrictions apply to the targeted procurement processes.

The reform of the Czech Republic procurement code of July 2006 introduced a new type of simplified negotiating procedure into the procurement legislation and in this way introduced several new thresholds into the procurement code (see Table A.1 in the appendix). The introduction of the new thresholds is a key factor for our identification strategy, because the new procedure is not applicable above these thresholds.

The new thresholds offered procuring officials the opportunity to free themselves from rigid rules, which otherwise regulated the transparent contract-awarding process. In particular, if the anticipated value of the procurement was set below the threshold, the officials were allowed to autonomously approach potential contractors themselves instead of being required to provide open access for any company that might want to participate in the procurement competition. Agencies therefore did not need to set lengthy deadlines for bid-submission and evaluate all the incoming bids, but could

rather directly invite pre-selected companies to submit their bids. In a trade-off, the law demanded that agencies would always need to invite at least five potential suppliers so as to guarantee some degree of competition.

A major controversy arose from the fact that the decision on which bidders would be invited was left at the full discretion of the procurement agencies. In this way, the regulation created a strong opportunity for public bodies to engage in manipulations of the anticipated values of procurement contracts.

III. Sources of Manipulations and Predictions for Estimation

After the introduction of procurement thresholds, there appear to be three main reasons for manipulation of the anticipated value of procurements, where two of them imply wasteful behavior. First, procurement officials might want to manipulate the anticipated value in order to avoid transparent auctions with open access above the thresholds to save the associated time and administrative costs. This might be efficient and beneficial for the procuring organization provided that the increased discretion leads to optimal selection of suppliers. This behavior would lead to the higher concentration of efficient contractors below threshold.

Second, officials might want to manipulate the anticipated value of contracts to avoid the effort and time costs for themselves, which need not be beneficial for the organization, because suppliers might not be chosen optimally and the final prices of procurement might be higher. We follow Bandiera et al. (2009) by referring to this kind of behavior as passive waste. In this case, the winners of procurements sorted below threshold would be less efficient than those in non-manipulated procurements, but not necessarily connected with procurement officials.

Finally, the officials might want to manipulate procurements so as to avoid auctions, so that their allied supplier can win, yielding benefits for the involved officials. The related literature refers to this kind of behavior as active waste.

In this paper we cannot provide evidence for the efficiency sorting and passive waste, but we still add to the previous literature by identifying wasteful sorting as a possible behavioral response to the discretionary thresholds. In our setting procuring officials

maximize external rent and minimize the risk of detection, which can be achieved using various mechanisms. For example, the procuring officials sign a contract with firms that have anonymous owners. This allows for easy and safe transfer of external rent, because potential connections and conflict of interests are impossible to trace. In order to allocate contracts to anonymous suppliers, procuring officials prefer to use non-transparent auction formats, which provide them with more discretion in choosing desired firms as contractors.

We claim that this behavior should translate into empirical changes in the prevalence of contractors with anonymous owners in the proximity of procurement thresholds. This would comprise a clear sign that colluded suppliers are more likely to win. In particular, we test whether winning contractors in the proximity of thresholds are more prone to hide their ultimate owners, have shorter history and fewer employees. These patterns cannot be explained by incentives on the part of officials to save time or administrative costs while selecting an optimal supplier for the procuring organization.

Moreover, due to the active waste, the suppliers with anonymous owners should win tenders below the thresholds with higher final prices of procurements. Via increased prices, the involved agents could split a larger amount of surplus from manipulated contracts. We test to what extent preferential treatment of firms with anonymous owners leads to a higher final price for them, compared to procurements with the same anticipated value, with the same approximate content, but awarded to traceable firms.

In general, higher final price of manipulated contracts does not necessarily imply active waste. For example, officials can select optimal contractors that offer high quality for higher price. However, it is difficult to argue why anonymity of ownership would have any positive effect on the quality of public services that would justify higher price compared to traceable firms.

Before we proceed to the empirical part, we summarize the empirical implications of manipulation and active waste in the following three points: (1) introduction of

discretionary thresholds leads bunching of procurements below the thresholds; (2) a non-transparent selection mechanism and active waste lead to a higher concentration of contractors with anonymous owners just below the thresholds; (3) Bunching of procurements and selection of contractors with anonymous owners leads to higher procurement prices compared to procurements awarded to traceable contractors. The combination of all three hypotheses, if supported by empirical evidence, suggest the presence of wasteful sorting of procurements below threshold.

IV. Data from Public Procurement Contracts

The available data on public procurement contracts include the characteristics of all the procurements awarded in the Czech Republic from 2005 to 2010, conditional on their procurement process being governed by the Czech Public Procurement Act. The database therefore mandatorily contains information on contracts that are larger than some minimum anticipated value and does not contain data on contracts procured through legislative exemptions.² Altogether, this amounts to over 45, 000 procurement contracts worth more than CZK 1,038 billion (approximately USD 52 billion).

The unit of observation in this study is a procurement project, although several contracts with different contractors may be procured within one project. The focus is placed on projects because the anticipated value of procurements must be estimated at the level of an entire project, rather than separately for each contract.

For each project the database includes information on the subject of the procured goods/ services/ construction works (represented by a detailed CPV code³), the type of contract-awarding procedure, the characteristics and names of the procuring agencies and winning contractors and the anticipated value and final contractual price of procurements.

² The minimum anticipated value for collecting data about procurements was CZK 2 million for goods, services and construction works before the reform. This was far below the new discretionary thresholds. The limit for construction works changed in 2006 from CZK 2 million to CZK 6 million. We take this change into account in our analysis.

³ CPV code (Common procurement vocabulary) is a classification of the main subject of procurements unified across the European Union. For more information, visit http://simap.europa.eu/codes-and-nomenclatures/codes-cpv/codes-cpv_en.htm

Table 1 provides the summary statistics of all the contracts in two observation periods: before the legislative reform of the Public Procurement Act in 2006 and afterwards. The table shows very little changes in the overall structure of demand for procurements. We can observe that the share of the overall financial volume spent on goods, services, and construction remains stable over time even though that proportionally more service contracts got procured. Also, there is only a small change in the share of procurement value allocated by national versus regional procurement agencies.

The table however shows evident changes in the use of procurement procedures after the reform. More than 16.5% of the total procurement value shifted from the open auctions to other less transparent procurement procedures. This demonstrates the preference of procurement agencies for the new contract-allocation procedures.

We merge the procurement dataset with additional information about winning contractors from the official register of economic subjects using unique identifiers of contractors. The register includes information about the size of their capital stock, legal form, year of incorporation, number of employees, and – most important – about the traceability of their owners.

In total, procurements transferred to anonymous firms were worth CZK 20.9 billion (approx. 1 billion USD), based on 1,200 contracts, which is 2.6% of the total number of contracts. These contracts were awarded to a total of 277 unique anonymous firms. The share of anonymous firms is not negligible, as they represent about 20 percent of all joint stock companies obtaining public procurements.

TABLE 1

Descriptive statistics

Characterization:	January 2005 - June 2006				July 2006 - December 2010			
	Volume (billion CZK)	(%)	Contracts	(%)	Volume (billion CZK)	(%)	Contracts	(%)
By main object:								
- Goods	21.6	12.45	1,510	27.30	102.71	11.87	10,993	27.80
- Services	37.9	21.87	1,110	20.07	192.17	22.21	14,001	35.40
- Construction works	113.7	65.68	2,911	52.63	570.33	65.92	14,553	36.80
By contract-awarding procedure:								
- Open	146.5	84.58	4,322	78.14	580.45	68.00	19,504	50.22
- Restricted	27.7	15.42	1,209	21.86	82.23	9.63	1,601	4.11
- Simplified Negotiations or Negotiations with Prior Public Notice	N/A*	N/A*	N/A*	N/A*	98.56	11.55	12,372	31.86
- Negotiations w/out Prior Public Notice	N/A*	N/A*	N/A*	N/A*	92.36	10.82	5,360	13.80
By procuring agency type:								
- National Procurers	117.9	68.09	2,887	52.20	560.63	64.80	22,976	58.09
- Regional Public Bodies	55.2	31.91	2,644	47.80	304.57	35.20	16,571	41.91

Notes: Descriptive statistics are provided both by the number of procurement projects and by the procurement volume (in billion CZK; 20 CZK ≈ 1 USD). *N/A mark indicates the non-applicability of a statistic for a given observation period.

Table 2 compares anonymous joint-stock firms with traceable joint-stock firms. Anonymous firms are, on average, smaller and 3 years younger and have much smaller capitalization. This indicates that many anonymous firms could be only shell companies used as a tool for rent seeking.

TABLE 2
Contractor Characteristics, by Type of Ownership

	All companies	Traceable companies	Anonymous companies	Difference
Capital stock (mill. CZK) ^a (S.D.)	334	396	78.2	- 317.8**
Median year of incorporation ^b	1997	1996	1999	***
Number of employees ^c				
- 0 – 24 employees	28.77	25.04	44.04	+19.0***
- 25 – 99 employees	32.46	34.48	24.19	-10.3***
- 100 – 249 employees	17.36	18.96	10.83	-8.13***
- 250 – 999 employees	12.83	13.49	10.11	-3.38*
- 1000 and more	4.61	5.20	2.17	-3.04**
- not specified	3.97	2.82	8.66	+5.84***

Notes: The differences between joint-stock companies with anonymous and traceable owners are tested using: a) one-sample two-group t-test in case of the „capital stock”; b) k-sample test of the equality of medians in case of the „median year of incorporation” and c) one-sample two-group z-tests of the equality of proportions in case of categories of the „Number of employees”, *** p<0.01, ** p<0.05, * p<0.1

V. Empirical Strategy for Detecting the Manipulation

We use two methods of identification for detecting the manipulation of procurements. The first method is based on the methodology of Chetty et al. (2011) and focuses on repeated cross-sectional density distributions of the anticipated value of procurements. The identification assumption, which underlies the causal inference, is that the density distributions of the anticipated value would be smooth if more restrictive tendering procedures were not prohibited above the thresholds. The smoothness assumption might be rather strong in our application, for example in case that rounding of the inspected variable was an issue.

Therefore we offer an alternative strategy, which relaxes the assumption of the smooth counterfactual density distribution by exploiting the timing of introducing new thresholds into the procurement system. We assume that the density distribution after the reform would look the same as before the reform, if the reform had not established procurement thresholds. The assumptions behind our strategy are a stable demand for procurements over time and no rolling of procurements until the time of the reform.¹ Our empirical strategy is technically only an extension of the one in Chetty et al., thus we start with cross-sectional analysis.

In the first method, we estimate the excess mass of contracts below a certain threshold D using a counterfactual density distribution— what the anticipated value distribution would look like if there were no ban on restrictive tendering above D .

In the first step, we plot the empirical distribution of the anticipated value of procurements in a histogram with D re-centered to zero. In the second step, a polynomial is fitted to the histogram excluding the data in a narrow window below the threshold. This means that a polynomial regression of the following form is estimated:

$$(1) \quad C_j = \sum_{i=0}^q \beta_i \cdot (Z_j)^i + \sum_{i=-R}^0 \gamma_i \cdot \mathbf{1}[Z_j = i] + \varepsilon_j,$$

where C_j is the number of procurement contracts in a histogram bin j , Z_j is the anticipated value of contracts grouped in histogram bin j , q is the order of the polynomial, and R denotes the width of the excluded region below the threshold measured in the number of excluded bins below D .²

The estimate of the counterfactual distribution is defined as predicted values from (1) omitting the contribution of the dummy variables below the threshold:

$$(2) \quad \hat{C}_j = \sum_{i=0}^q \hat{\beta}_i \cdot (Z_j)^i.$$

¹ Supportive evidence for the first assumption is presented in Table 1, which shows that the structure of the overall financial volume spent on construction, goods and services appears to be stable over time. Evidence for the second assumption is discussed in section VI, in which we show that the extent of manipulation remains stable over time after the reform. Moreover, our evidence rather suggests that there was a slight delay in the impact of the reform, mainly in the construction sector.

² We conduct the analysis for different parametric choices of q and R . We also estimate the specification where the excluded region is symmetric around the threshold D . We comment on the results of this analysis in section VI.

The excess number of contracts that are located below the threshold is³:

$$(3) \quad \hat{B}_N = \sum_{j=-R}^0 C_j - \hat{C}_j = \sum_{i=-R}^0 \hat{\gamma}_i.$$

Finally, we define the empirical estimate of the excess mass below the threshold relative to the average density of the counterfactual anticipated contract value distribution between $-R$ and 0 as:

$$(4) \quad \hat{b} = \frac{\hat{B}_N}{\sum_{j=-R}^0 \hat{C}_j / R}.$$

We calculate the standard error for \hat{b} using a parametric bootstrap procedure. We draw from the estimated vector of errors ξ_j in (1) with replacement to generate a new set of counts and apply the above technique to calculate a new estimate \hat{b}^k . We define the standard error of \hat{b} as the standard deviation of the distribution of \hat{b}^k s.

The second identification method incorporates time dimension into the econometric model. This method relaxes the assumption of a smooth density distribution of the anticipated contract value and assumes that the shape of the density distribution after the 2006 reform would look the same as before it.

The estimation again proceeds in two steps. We first plot all the annual histograms of the anticipated value with thresholds re-centered to zero. In the second step, we regress the number of contracts in bin j and time t , denoted as C_{jt} , on an interaction term between an indicator for contracts located in the excluded region below threshold and indicator for the validity of the 2006 reform (that occurred in time denoted as T). We include in our model a set of fixed effects for histogram bins in which contracts would be located and annual fixed effects, which are supposed to capture the time trend. The econometric model can be formally expressed as follows:

$$(5) \quad C_{jt} = \alpha_j + \alpha_t + \sum_{i=-R}^0 \gamma_i \cdot \mathbf{1}[Z_j = i] \cdot \mathbf{1}[t > T] + \varepsilon_{jt}$$

³This calculation would overestimate B_N because it does not satisfy the constraint that the area under the counterfactual distribution must equal the area under the empirical distribution. To take this aspect into account, we follow Chetty et al. (2011) and correct the counterfactual distribution above the threshold so that the integration constraint is satisfied.

The coefficients of interest $\hat{\gamma}_i$, $i \in [1, R]$, represent our estimates of the excess mass of contracts in particular bins of the excluded region below the threshold. We estimate the regressions using Poisson conditional fixed-effects quasi-maximum likelihood (QML). This estimator has several desirable properties, including 1) consistency of the coefficient estimates independently of any assumption on the conditional variance as long as the mean is correctly specified (Wooldridge, 1997) and 2) consistency of the standard errors even if the data generating process is not Poisson⁴.

VI. Empirical Analysis of Manipulation Detection

We divide our analysis into three types of procurements – construction, goods and services. This is because the difficulty of rent-extraction may depend on the type of procured products. For example, monitoring an adequate price in consulting services can be more difficult compared to procurement of IT hardware.

We start with cross-sectional analysis and plot the empirical distribution of the anticipated value of procurements for all the construction contracts procured in the Czech Republic after the 2006 procurement reform up to the end of our observation span in 2010 (Figure 1). The contracts are grouped into CZK 250,000 bins (-14,000,000 to -13,750,000, -13,750,000 to -13,500,000, etc.) on the re-centered anticipated value variable (the threshold is re-centered to zero).

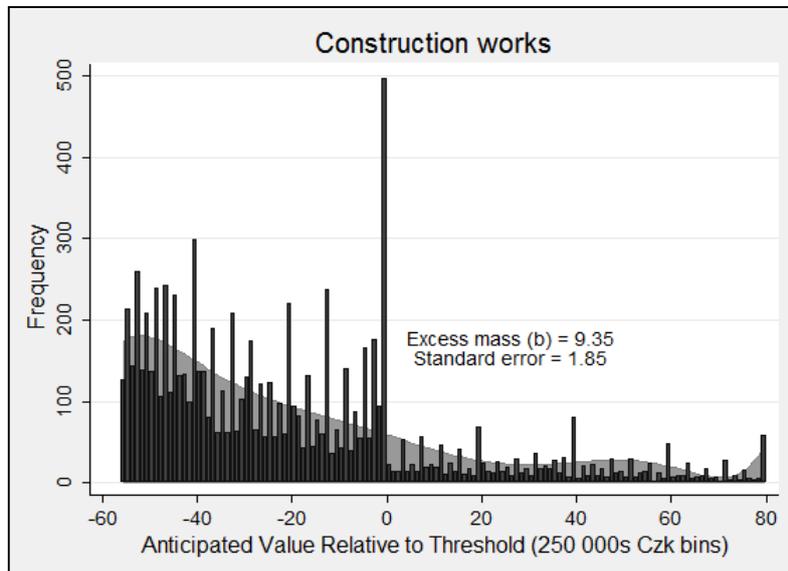
Figure 1 shows that there is a spike below the simplified negotiations threshold in the otherwise declining anticipated value distribution. The solid area beneath the empirical distribution shows the counterfactual density $\{\hat{C}_j\}$ predicted using (1) with a seventh-degree polynomial ($q=7$) and a window of CZK 750,000 located just below the threshold ($R=3$). With these parameters, we estimate $b = 9.35$ – the excess mass below the threshold is 935 % of the average height of the counterfactual distribution within CZK 750,000 below the threshold.^{5, 6}

⁴The estimation is implemented in STATA with the `xtpqml` procedure written by T. Simcoe and is available at <http://people.bu.edu/tsimcoe/code/xtpqml.txt>

⁵The qualitative results are not sensitive to changes in q or R , nor are they sensitive to specifications accounting for specific focal points located within the anticipated value distribution (for example, located at substantial round figures within the distribution).

FIGURE 1

Anticipated Value Density Distribution around the Procurement Threshold



Notes: The series shown in bars is a histogram of the anticipated value of construction works, relative to the threshold. The solid distribution beneath the empirical distribution is a seventh-degree polynomial fitted to the empirical distribution, excluding points CZK 750,000 or less below the threshold.

The first column of Table 3 presents these results. The standard error associated with our estimate of b is 1.85. The null hypothesis that there is no excess mass at the threshold relative to the counterfactual distribution is rejected with a t-statistic of 5.055.

TABLE 3

Polynomial Regression Estimates of Excess Mass below the Threshold

	Construction Works	Goods	Services
\hat{b}	9.352*** [1.850]	1.996*** [0.236]	3.027*** [0.275]
\hat{B}_N	581	282	501
N	8,830	5,228	6,357

Notes: \hat{B}_N denotes the estimated excess number of contracts below the threshold, and \hat{b} denotes the excess mass of contracts relative to the average density at the threshold. Standard errors are presented in brackets. ***Estimates significant at the 1% level.

⁶ We also estimate the specification where the excluded region is symmetric around the threshold. This exercise increases the estimated magnitude of bunching for goods and services contracts and reduces the estimated bunching for construction contracts. The estimates remain highly statistically significant.

Using the same methodology, we also find statistically significant evidence of manipulations of the anticipated values of goods and services contracts. The second and third columns of Table 3 summarize these results.⁷ The estimated excess mass at threshold for goods contracts is 200% of the average height of the counterfactual distribution. The estimated excess mass at the threshold for services is 303% of the average counterfactual distribution height. The estimated extent of manipulation is thus smaller than for construction.

Using a back-of-the-envelope calculation we calculate the share of manipulated contracts procured through the simplified negotiations below threshold. Tables 1 and 3 suggest that the manipulations affect 11% of all contracts procured using this non-transparent procedure after July 2006.⁸

The identification assumption of the smooth counterfactual density distribution can be relaxed by exploiting the timing of the introduction of new thresholds into the procurement legislation. Figure 2 displays the distribution of the anticipated value in each year from 2005-2010 for all construction works. In the subfigures it is clear that the first appearance of bunching appears just a few months after the introduction of the simplified negotiating threshold into the procurement system. In the subfigures, the excess mass of contracts clings very closely to the legislative threshold persistently after the reform and its size remains quantitatively similar. This implies that a possible short run effects, for example, intentional delays of procurements until the reform are not relevant for the estimated extent of manipulation just below the limit.

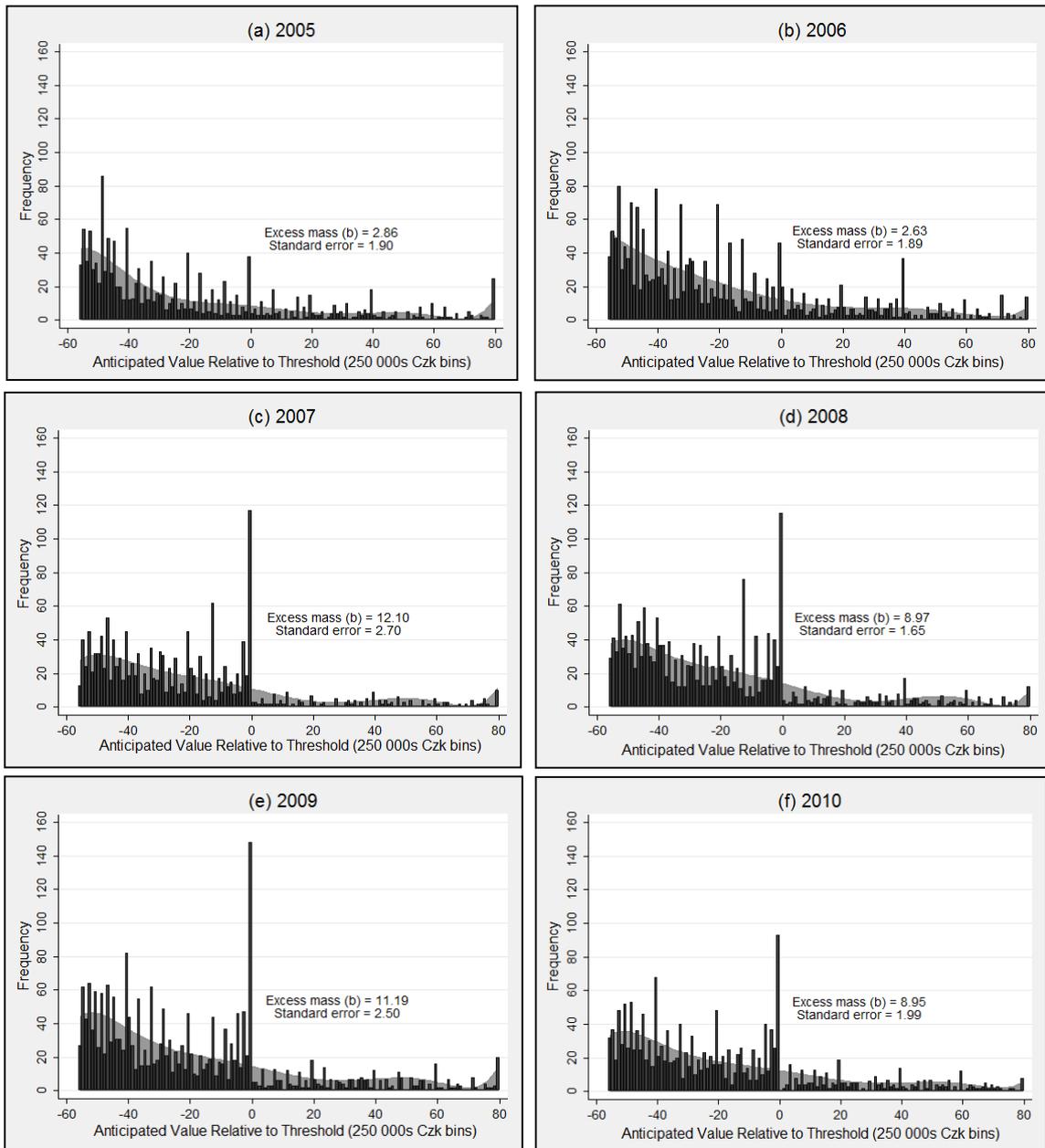
The annual estimates of discontinuities for all types of the main subject are shown in Table 4. The procurement reform and the first emergence of discontinuities coincide perfectly for goods and services contracts. For construction works, the discontinuity can be statistically detected after a six month delay, which is even against the hypothesis of intentional waiting for the reform.

⁷ Due to space constraints, we omit figures showing the distributions for goods and services contracts.

⁸ Table 3 indicates 1,364 contracts excessively massed below thresholds, while Table 1 shows that altogether 12,372 procurements were allocated using simplified negotiations after July 2006.

FIGURE 2

Anticipated Value Distributions around Procurement Thresholds, by Year



Notes: Series shown in bars are histograms of the anticipated value of construction procurements relative to the thresholds. Each bar shows the number of observations in CZK 250,000 bins. The solid distributions beneath empirical distributions are seventh-degree polynomials fitted to empirical distributions, excluding points CZK 750,000 or less below the threshold.

The delay in construction can be contrarily explained by the fact the procurement process requires some non-trivial amount of time, which varies for different types of contracts. Because the new law was passed in July 2006, the authorities may not have procured enough construction contracts (as opposed to smaller and simpler goods and services contracts) in the last two quarters of 2006 for manipulations to become statistically significant before 2007.

TABLE 4

Estimated Excess Mass below the Threshold by Year and Main Object

Year	Construction Works		Goods		Services	
	Excess Mass		Excess Mass		Excess Mass	
	Estimates	SE	Estimates	SE	Estimates	SE
2005	2.861	[1.902]	0.410	[0.552]	- 0.025	[0.577]
2006	2.628	[1.891]	1.635***	[0.257]	0.800***	[0.294]
2007	12.100***	[2.697]	1.389***	[0.427]	3.162***	[0.460]
2008	8.965***	[1.651]	1.799***	[0.494]	2.121***	[0.478]
2009	11.190***	[2.504]	1.901***	[0.522]	2.503***	[0.561]
2010	8.954***	[1.990]	2.362***	[0.360]	2.852***	[0.371]

Notes: Estimates represent the estimated excess mass of contracts relative to the average density at thresholds. Standard errors are presented in brackets. ***Estimates significant at the 1% level.

We further continue with quantifying the excess mass using Poisson conditional fixed effects. Table 5 shows the results of estimating (5), which incorporates time into our model, with CZK 250,000 wide histogram bins and CZK 750,000 wide excluded region below the threshold (R=3). Using these parameters, we estimate that the number of contracts in the last bin below the threshold increased after the 2006 reform by 156%, 113%, and 182% for construction works, goods, and services contracts, respectively. The null hypotheses of no manipulation of procurement in these bins were rejected with z-statistics of 24.79, 13.30, and 16.20. The estimated excess bunching is of a smaller but still significant magnitude relatively to the cross-sectional analysis.

Results from both cross-sectional as well as policy change identification strategies suggest that manipulation is more pronounced for construction and services, while it is less pronounced, but still significant, for supplies of goods. Our explanation for this finding is that the subject of contracts is much more difficult to specify in

procurements on construction and services and the scope for any kind of manipulation is much broader. As a result, procurements on construction and services are generally more difficult to control and provide more opportunities for manipulation and rent seeking relatively to procurements of goods.

TABLE 5

Estimates of Excess Mass below the Threshold Using a Fixed-Effects Strategy

	Construction	Goods	Services
$\hat{\gamma}_{-1}$	0.942*** [0.038]	0.758*** [0.057]	1.037*** [0.064]
$\hat{\gamma}_{-2}$	1.478*** [0.038]	0.295*** [0.057]	0.006 [0.064]
$\hat{\gamma}_{-3}$	1.205*** [0.038]	0.571*** [0.057]	0.188*** [0.064]
Histogram Bin FE	YES	YES	YES
Year FE	YES	YES	YES
N	816	990	996

Notes: Coefficient estimates are interpreted as $(\exp(\hat{\gamma}_i)-1)*100$ percentage change. Robust standard errors, clustered at the histogram bin level, are presented in brackets, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Robustness Checks

We provide alternative approaches for manipulation detection and robustness analysis. In particular, we test whether procurements cluster at inflationary adjusted thresholds and use the alternative density test described by McCrary (2008) to test for procurements bunching.

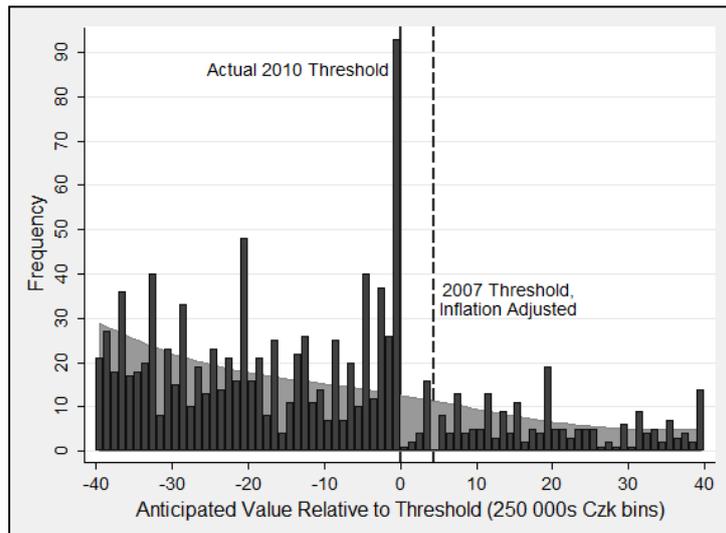
Does Contract Bunching Follow Inflation or Does it Cling to Thresholds?

One could still conjecture that at the time of the procurement reform a change occurred in the governmental orders for projects that were worth approximately the same value as the procurement threshold. Such a change in governmental needs would have brought about a disproportionate representation of projects beneath the threshold even in the absence of any manipulation. However, one would then expect that the spike in the anticipated value density distribution would shift with inflation over time.

In Figure 3 we consider the period from 2007 to 2010, during which the simplified negotiations threshold for construction works declined in real terms. Noting that the excess mass was located at the negotiations threshold in 2007, the figure shows two possibilities for its location in 2010: the 2010 threshold and the 2007 threshold adjusted for inflation in the construction industry.

FIGURE 3

Distinguishing Thresholds in Public Procurement from Inflation



Notes: The location of the threshold in 2010 is marked with a solid line. The dashed line shows the level of the 2007 threshold adjusted for inflation in the Czech construction industry.

Figure 3 shows that the excess mass clearly clings to the 2010 threshold rather than following inflation. The procurement threshold is therefore more important for contract bunching than specific governmental needs.

Alternative Density Discontinuity Test

We apply McCrary's (2008) density test in order to provide alternative test of contract bunching. The test consists of an extension of the local linear density estimator from Cheng, Fan and Marron (1997) and is particularly useful in applications where a discontinuous density is itself the object of interest. In a practical sense, the test is implemented as a Wald test of the null hypothesis that there is no discontinuity at threshold D .

Table 6 presents the log discontinuities estimated using McCrary’s (2008) local linear regressions along with the simulated standard errors.^{9,10}

TABLE 6

Log Density Discontinuity Estimates

	Construction Works	Goods	Services
$\hat{\theta}$	- 3.291*** [0.243]	- 0.457*** [0.104]	- 0.801*** [0.079]
N	9,067	6,869	8,518

Notes: The table presents the log estimates of discontinuity in the density of the anticipated value. Estimates were obtained using a local linear density estimator proposed by McCrary (2008). Simulated standard errors are presented in brackets, *** p<0.01, ** p<0.05, * p<0.1.

The results in table strongly suggest that the density function of anticipated value of procurements is discontinuous at the threshold for simplified negotiations. The estimates indicate that contracts within hundreds of thousands of CZK of the threshold are much more likely to be procured below the threshold than above it. These results affirm the robustness of our prior analysis of contract bunching.

VII. Evidence for Wasteful Behavior of Public Officials

The results presented so far provide robust evidence for manipulations of the anticipated value to an especially large extent for construction works and services. This finding shows that the observed auction format is to large extent driven by the choice of officials and not necessarily by technological characteristics of procurement. In this part, we present evidence that manipulation can lead to suboptimal selection of contractors and subsequently to active waste by public officials.

Preferential Access of Anonymously Owned Contractors to Procurements

⁹ To apply the local linear density estimator, we select the bandwidth of $h=2,000,000$ and the bin size of $w=250,000$ subjectively after using an automatic procedure. Pagan and Ullah (1999) and Deaton (1997) point out the effectiveness of subjective bandwidth choice. The automatic procedure would select a bin size of $w=191,313$ and a bandwidth of $h = 4,749,168$.

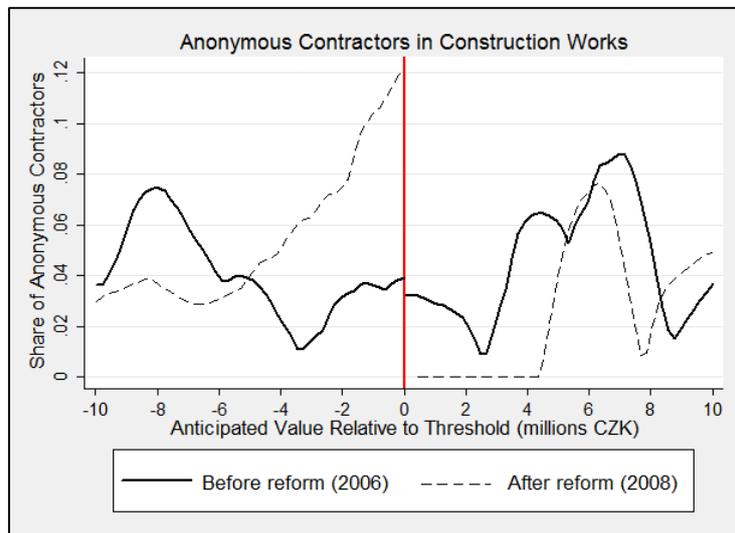
¹⁰ We follow Horowitz (2001), Hall (1992) and McCrary (2008) and, when estimating the standard error, we under-smooth the local linear estimator by choosing a half bandwidth with respect to the reference bandwidth. The cited authors recommend this procedure in order to reduce the bias associated with a bandwidth which minimizes the asymptotic mean square error.

As outlined in the discussion of the sources of manipulation in the third section, we assess the potential of active waste driving at least part of the manipulation by examining the discontinuous change in the allocation of contracts to non-transparent anonymous contractors near the thresholds. We claim that, if manipulation has negative consequences for the actual selection of contractors, we should observe a higher concentration of firms with anonymous owners among manipulated contracts just below the thresholds. This should hold in particular for construction works and services, where the extent of manipulation is largest.

Figure 4 illustrates the access of anonymous contractors to procurements in the proximity of thresholds for construction works. The figure contrasts the share of procurements awarded to anonymous joint-stock companies (out of all joint-stock companies) in two periods: before and after the 2006 reform that established the thresholds. We use kernel-weighted local polynomial smoothers and 1 million CZK bandwidths on either side of the threshold to plot the figure.

FIGURE 4

Share of Construction Contracts Awarded to Anonymous Firms, by Year



The figure clearly indicates that, after the reform, contracts just below threshold were allocated approximately three times more likely (compared to the situation before the reform) to firms that had anonymous ultimate owners and could thus have facilitated rent-extraction in procurement. This finding is an argument against both the efficiency

and passive waste hypotheses, because all potential suppliers are preselected and invited into competition directly by procuring officials who thus have full control over the observable characteristics of potential suppliers. It is unlikely that changes in the ownership structure near the threshold would be an unintended result of some other type of behavior than active waste.

We also inspect the preferential access of anonymous firms to contracts in a regression framework for all types of procurements – construction works, goods, and services. We apply a similar methodology to that leading to equation (5). In the whole sample, we create for each contract a binary variable for whether the contract was awarded to an anonymous contractor or not. We regress this measure of access to contracts on a variable that captures the interaction between contracts located just below thresholds and the validity of the 2006 reform. Our specification also includes annual fixed effects, fixed effects for histogram bins in which contracts are located and dummies for all types of procurement procedures. Finally, the specification controls for the content of procurements as it contains dummies for procurement CPV codes that systematically characterize the detailed procurement subject.¹¹ We estimate the regressions using the linear probability model (LPM), with standard errors clustered at the histogram bin level.

Table 7 presents the results of this estimation and supports the findings presented in Figure 4 for the construction sector. In particular, Table 7 suggests that, after the 2006 reform, the conditional probability that a contractor just below threshold is anonymous increased by approximately 3 percentage points in construction. This corresponds to an approximately threefold increase in the probability of awarding a contract to an anonymous firm. The size of the increase is comparable to Figure 4, even though that now the regression sample included all contractors, not only joint-stock companies. This result is significant at the 5% level. For services, we find over one percentage point increase in the prevalence of anonymous firms below the

¹¹ Technically, we control for the content of procurement at the level of the first three digits of the detailed CPV code. Our specification includes dummies for the most prevalent CPV code groups within each type of procurement – this materializes in 6 CPV code dummies for construction contracts, 16 dummies for services and 15 dummies for supplies of goods.

threshold, which is again significant at the 5% level. In the case of goods, we observe a non-significant change in the prevalence of anonymous firms just below thresholds.

TABLE 7

The Impact of Manipulation on Contractor Choice

Outcome variable: Indicator that Contractor is Anonymously Owned						
	Construction works		Services		Goods	
Contracts in Bins Just below D x 2006 Reform	.027** [.012]	.029** [.012]	.011* [.006]	.013* [.008]	-.006 [.015]	-.004 [.015]
Histogram Bin FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Procurement Procedure Dummies	NO	YES	NO	YES	NO	YES
Procurement Subject (CPV code) Dummies	NO	YES	NO	YES	NO	YES
R ²	0.01	0.01	0.06	0.11	0.02	0.04
N	11,863	11,585	7,118	7,017	7,494	7,398

Notes: Estimates multiplied by 100 can be interpreted as percentage point change. Robust standard errors, clustered at the histogram bin level, are presented in brackets, *** p<0.01, ** p<0.05, * p<0.1.

Implications for the Final Price of Procurement

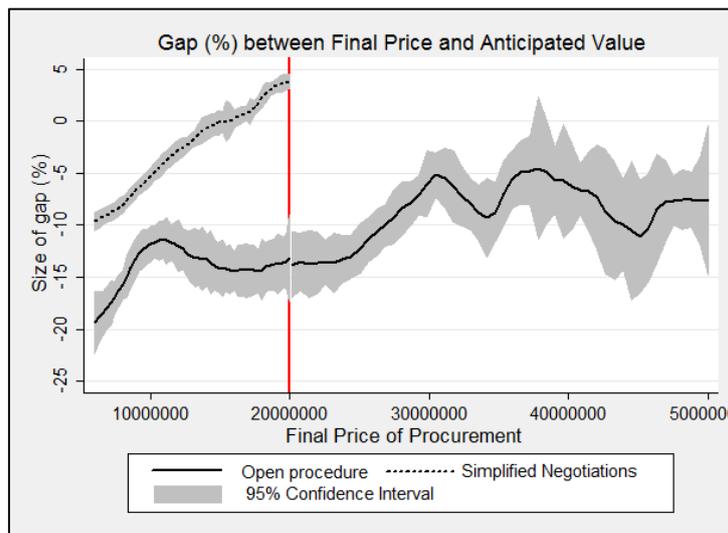
We further examine whether manipulations and preferential selection of contractors with anonymous owners translate to preferential prices of procurements awarded to anonymous firms. This would be additional evidence supporting the hypothesis that manipulation leads to active waste.

In Figure 5 we first show that manipulation of procurement is in general associated with an increase in the final price conditionally on the anticipated value of procurements. In particular, Figure 5 depicts that simplified negotiations (compared to open auctions) lead to a much smaller difference between the final price and the anticipated value of procurements. This difference further decreases as contracts approach the threshold. As discussed before, this does not have to be clear-cut evidence for active waste, because public officials might have, for example, stronger

preference for quality that would justify the higher price of manipulated contracts. The reduced price difference could also simply result from undercutting of the anticipated value downwards below the threshold motivated by the preference for selecting optimal contractors using the cost-efficient contract-awarding procedure.

FIGURE 5

Price Difference between the Final Price and Anticipated Value, by Procurement Procedure



Notes: The price difference is calculated using kernel-weighted local polynomial smoothers and CZK 1 million bandwidths, separately on either side of the threshold. Only procurement construction works contracts from 2006 to 2010 are considered.

In Table 8 we present evidence that the estimated extent of manipulation cannot be explained only by these hypotheses. Favorable prices for anonymous firms (relatively to traceable firms) in procurements with comparable anticipated value are inconsistent with efficiency considerations, because it is difficult to rationalize why anonymous ownership should, for example, lead to an increase in the quality of procurements, which would justify the higher prices.

Table 8 shows OLS estimates of a regression where the difference between the final price and anticipated value (as % of the anticipated value) is regressed on the interaction between the indicator for anonymous firms and the indicator for contracts located just below the threshold (CZK 750,000 below or less). The regression includes histogram bin fixed effects, annual fixed effects, CPV code dummies controlling for the

procurement subject, dummies for all types of procurement procedures, and a dummy for anonymous contractors.

TABLE 8

The Impact of Manipulation on the Final Price of Procurement

Outcome variable: Difference Between the Final Price and Anticipated Value of Procurement (in % of Anticipated Value)						
	Construction works		Services		Goods	
Contracts in Bins Just below D x Anonymous Firm	.082** [.034]	.089*** [.029]	.084*** [.026]	.063** [.029]	-.066 [.045]	-.051 [.053]
Anonymous Firm	-.016 [.018]	-.014 [.015]	-.000 [.026]	.019 [.024]	.045 [.035]	.033 [.041]
Histogram Bin FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Procurement Procedure Dummies	NO	YES	NO	YES	NO	YES
Procurement Subject (CPV code) Dummies	NO	YES	NO	YES	NO	YES
R ²	0.01	0.06	0.04	0.05	0.01	0.01
N	8,241	7,976	6,069	5,971	6,051	5,958

Notes: The estimates multiplied by 100 can be interpreted as percentage point changes. Robust standard errors, clustered at the bin level, are presented in brackets, *** p<0.01, ** p<0.05, * p<0.1.

Using the post-2006 sample, we estimate an 8.9 percentage point higher final price of construction contracts that were awarded to anonymous contractors just below the thresholds. The estimate is significant at the 1% level. We similarly find significant negative impact of anonymous firms on procurement prices among manipulated services contracts. The estimated effect is 6.3 percentage points. For goods where the preferential selection of anonymous contractors is not present, anonymous firms do not significantly impact the price difference.

It is likely that our estimated magnitude of active waste is downward biased. This is because our econometric specification that estimates the effect of anonymous firms on prices in fact compares the prices of contracts awarded to anonymous firms with prices of contracts awarded to traceable firms just below the threshold. The estimated

difference is the true effect of rent-seeking only under the assumption that all the contracts just below the threshold awarded to traceable firms are entirely not subject to active waste. However, this is not likely. If the sample is restricted only to traceable firms, we can still observe that the price difference between simplified negotiations and open auctions decreases as contracts approach the threshold. We observe a final price higher by 5.5 percentage points for contracts just below the threshold relative to the procurements far below the threshold. However, we miss any kind of proxy for rent-seeking in procurements awarded to traceable firms and therefore cannot directly attribute this change in the price to any kind of waste.

Alternative Explanations

In this section we address alternative scenarios that are in line with efficiency reasons behind manipulation and can simultaneously explain bunching of contracts, preferential selection of anonymous firms and preferential prices for anonymous contractors. At the end of the section, we also discuss other possible mechanisms than anonymous ownership for extracting rent from procurement.

We start with the alternative explanation that efficiency considerations might drive procurement officials to change the content of procurements while placing them just below the threshold. The officials might prefer anonymous firms for these specific procurements in which the final price cannot be decreased in competition. In this case, however, one would expect that the distribution of procurement subjects would change for anonymous firms (relatively to traceable contractors) below the threshold.

In order to capture this potential effect, we added to our regression specification a set of dummy variables for CPV procurement codes which characterize the detailed procurement subject. Our estimates of preferential treatment remain statistically significant, which contradicts the notion that the content of procurements just below thresholds is designed specifically for anonymous firms.

Another hypothesis related to efficiency reasons behind manipulation is that procurement officials might manipulate the contracts so that they can have more discretion in eliminating firms with poor past performance from the competition

(Calzolari and Spagnolo 2009). Against this hypothesis there exists the anecdotal evidence of many corruption scandals that involved not only rent-seeking of anonymous firms, but also the failure of these firms to deliver the content of contracts. Further, the history of anonymous firms is much shorter, as documented in Table 2. All evidence suggests that anonymous contractors tend to underperform traceable firms in delivering high quality in procurement rather than otherwise.

Finally, we realize that anonymous firms are not the only possible mechanism for extracting rent from procurement. For example, there is anecdotal evidence from many media reports and in Sharman (2010) that procurements can be allocated to firms in off-shore centers, which can also serve as vehicles for rent-extraction. Similarly, it has been documented in media that many procurements are affected by cost overruns, which can amount to up to 20% of the price of contracts. Cost overruns could also be potentially used as a tool for rent-extraction.

We however do not have direct evidence for this and other types of active waste, although, as we documented above, many procurements awarded to traceable firms in non-transparent auctions have much higher final price just below the thresholds than further away from it. This could be an indication that also other types of rent-seeking may be prevalent.

VIII. Concluding Remarks

In this study we detect and quantify manipulation of procurement contracts using the example of the Czech public procurement system. An incentive for officials to manipulate the anticipated value of procurements was created by the policy reform that introduced new discretionary thresholds, below which the procurement agencies gained the autonomy to preselect any five contractors into the bidding process.

We quantify the extent of manipulation using two empirical strategies. In the first one, we use the methodology presented in Chetty et al. (2011) to estimate the cross-sectional counterfactual distributions of procurement value. The second strategy is our extension which employs the distributions of procurement value before the reform as the counterfactual.

Using both methods we found a substantial impact of the policy reform on the extent of manipulation, even though our method gives smaller estimates of bunching. Although we cannot rule out that some procurement contracts were manipulated due to the efficiency reason, we find that manipulation led to a threefold increase in the probability of awarding procurements to firms with anonymous untraceable owners. The final price of manipulated procurements awarded to anonymous firms is at least 8 percentage points higher compared to procurements just below thresholds awarded to traceable contractors. The estimated increase in the prevalence of anonymous firms is most likely the lower bound of waste and corruption that could arise due to discretionary thresholds and manipulation.

Considering all the evidence is important when postulating policy recommendations. For example, should procurement officials be allowed to preselect contractors this freely? This study shows that one of the underlying reasons for excessively massing contracts below thresholds seems to lie in private benefits from manipulation for procurement officials. However, these private benefits incur costs for the society in terms of the elevated prices and suboptimal choice of contractors. In general, there is misalignment between the preferences of officials and those of society. The optimal delegation literature (e.g. Alonso and Matouschek 2008) advises calling for stricter rules and external controls in such cases. In the spirit of Holmstrom and Milgrom (1991), it might also be optimal to strip procurement officials of the discretion to autonomously preselect potential contractors and rather leave them with the option of including past performance indicators among bid-evaluation criteria.

This analysis has a substantial advantage that it provides controlling bodies with a new tool for analyzing fairness and manipulation in procurement competition. We illustrated the scope for manipulation using the case of the Czech Republic, but many other countries regulate their procurement by similar thresholds, although with different changes in discretion at thresholds. For example, the Italian procurement system instructs agencies to invite additional 10 potential contractors to tenders above the threshold, which could also lead to manipulation of the anticipated value. Given the often limited resources of controlling bodies, we suggest that it may be cost-

efficient to use our methodology to find the extent of manipulation and further test to what extent it has adverse consequences on the price of procurement and undesirable selection of winners.

The overall effect of increasing the efficiency of procurement may be manifold: both through the direct effect on savings and optimization of the choice of contractors and indirectly through increased competitiveness and trust in the fairness of the procurement process. The procurement environment would surely benefit from identification of its weak points.

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Appendix

TABLE A. 1

Procurement Thresholds for Simplified Negotiating Procedure (in thousands of CZK)

		2005	2006	2007	2008	2009	2010
Goods, Services	- National Bodies	N/A	4,290*	4,290	3,782	3,782	3,236
	- Regional Bodies	N/A	6,607*	6,607	5,857	5,857	4,997
Construction Works		N/A	20,000*	20,000	20,000	20,000	20,000

Table A.1 shows the annual procurement thresholds for simplified negotiations by the main object of procurements and the type of contract-awarding agency (in thousands of CZK). Thresholds for simplified negotiations determine the scope of discretion of public officials in inviting suppliers of their choice. Thresholds also restrict entry of bidders and determine the overall transparency of the contract-awarding process. *Simplified negotiation thresholds were introduced on July 1st, 2006. Source: Consolidated text of act no. 137/2006 Coll. on Public Contracts.

TABLE A. 2

Description of scandals in procurement related to anonymous joint-stock firms

Scandal	Time period	Institutions involved	Name of anonymous firms	Type of procurement	Subject of the contract	Involvement of the anonymous joint-stock firm	Potential loss	Charges, sentences
Opencard	2006-present	Capital city of Prague	Haguess	services	IT system for chip cards used in public transport	The Capital City's public transport company, owned exclusively by the City of Prague, approved a number of contracts awarded to companies with anonymous owners, including company Haguess (now eMoneyServices), which was very closely linked to people in the Prague City public transport company.	25 mil. CZK	A few people have been accused, including the former and current Mayor of Prague and former officers of Prague City Hall who reported the suspicious contracts to the police. The investigation is still in progress.
Kardio Port	2010-2014	The Institute of Clinical and Experimental Medicine in Prague	Kardio Port	supplies	medical supplies	The Cardio Port won a procurement contract worth 1.8 billion CZK on medical supplies to a Prague hospital as the only bidder. Even four years later, it is still not possible to determine who profits from the contract.	1.8 billion CZK	No people accused. EU closely watched the case.
EDS Holding	2012	Town of Kolin, The Waterways Directorate of the Czech Republic	EDS Holding	construction	highway bridge	EDS Holding is an anonymous firm linked to the former Minister of Transport Ales Rebicek. The largest contract from June 2009 was worth almost 1.2 billion.	400 mil. CZK	Auditors of the European Court of Justice had already been investigating the tender. In 2011, the auditors questioned the meaningfulness of the bridge and the unprecedented increase in the cost by CZK 400 million. No people accused.
Scandal	Time period	Institutions involved	Name of anonymous firms	Type of procurement	Subject of the contract	Involvement of anonymous joint-stock firm	Potential loss	Charges, sentences

Neocity Ron	2012	Public Hospital in Mladá Boleslav	Neocity Ron	construction	hospital	Tender for building a new pavilion of a hospital. The winner did not have any experience, had only one employee and did not have any relevant financial history. Its owners were hiding behind Cyprus offshore companies.	500 mil. CZK	n.a.
IZIP	2002- 2012	General Insurance Company: Vseobecna zdravotni pojistovna	MD Access	services	IT system designed for processing personal health care data	MD Access, the winning company, was personally connected with the procuring official. It cannot be proven whether the official has shares in the company at the moment due to the anonymous structure of MD Access.	2 billion CZK	n.a.
Montegar	2009- present	The Road and Motorway Directorate (RSD)	Montegar	services	Rentals of the highway rest stops	The Road and Motorway Directorate (RSD) rents highway rest stops to Montegar. This is a company with anonymous owners linked to Monster International, which had anonymous owners in Cyprus.	n.a.	Former RSD managers who signed the contracts are under police investigation.