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Faculty of Social Sciences
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BACHELOR THESIS

**Bid Protests in Public Procurement:
Czech Case**

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Declaration of Authorship

The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.

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Prague, July 31, 2015

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Abstract

Bid protest mechanisms provide supervision over public procurement processes. If set up properly, these mechanisms improve both ex-ante and ex-post efficiency of public procurement. However, decentralisation of the oversight can create opportunities for bidders to strategically abuse the system at the society's expense. In order to assess efficiency of the Czech bid protest mechanism, an empirical policy analysis was conducted using a unique combined dataset of all bid protest rulings of the Czech supervising authority linked to a complete dataset of public contracts procured between 2007 and 2014. Econometric methods for panel data analysis were employed in order to estimate effects of bid protesting on returns in form of awarded contracts. The selected approach made it possible to focus on individual relationships between contracting authorities and their suppliers. The results show significant differences between returns of protest against EU co-funded and EU unfunded contracts. Moreover signs of strategical system abuse related to public works contracts were found.

JEL Classification D44, D73, H42, H75, L33

Keywords Public Procurement, Public Contracts, Bid Protests, Public Procurement Supervision, Office for Protection of Competition

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Abstrakt

Mechanismy napadení přidělené veřejných zakázek poskytují možnost dohledu nad procesy udělování veřejných zakázek. Pokud jsou správně nastaveny, tyto mechanismy zlepšují jak ex-ante, tak ex-post účinnost vypsaných výběrových řízení. Decentralizace dohlížejících orgánů však umožňuje soutěžícím tento systém zneužívat a tak zvyšovat náklady pro společnost. Tato práce zkoumá efektivitu těchto mechanismů pomocí empirické analýzy unikátní databáze všech rozhodnutí ÚOHS ve věci napadení výběrového řízení spojené s kompletní databází všech veřejných kontraktů vypsaných mezi lety 2007 a 2014 a využívá ekonometrické metody pro analýzu panelových dat k odhadu návratnosti výběrového řízení ve formě získaných kontraktů. Zvolený přístup umožňuje zaměření na jednotlivé vztahy mezi zadavateli a jejich dodavateli. Výsledky ukázaly signifikantní rozdíly mezi návratností napadení výběrových řízení vázaných a nevázaných na dotace z EU. Dále byly zjištěny známky systémového zneužívání v oblasti smluv o veřejných pracích.

Klasifikace JEL

D44, D73, H42, H75, L33

Klíčová slova

zadávání veřejných zakázek, veřejné zakázky, napadení rozhodnutí, dohled nad veřejnými zakázkami, Úřad pro ochranu hospodářské soutěže

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Acronyms

BP	Bid Protest
CAE	Center of Applied Economics
CPV	Common Procurement Vocabulary
CZK	Czech Koruna
EC	European Commission
EU	European Union
GAO	Government Accountability Office
GDP	Gross Domestic Product
ISVZ	Information System on Public Procurement
NGO	Non-Governmental Organization
PC	Public Contract
UN	United Nations
ÚOHS	Office for the Protection of Competition
UNCITRAL	United Nations Commission on International Trade Law
WTO	World Trade Organization

Bachelor Thesis Proposal

Author	Adam Nedvěd
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Proposed topic	Bid Protests in Public Procurement: Czech Case

Preliminary Scope of Work While many businesses are attracted by the prospect of securing a public contract, only few make the cut and become suppliers for the public sector. The remaining bidders are free to express their objections against the procurement process and challenge it at the Office for the Protection of Competition. While this option should add a substantial degree of transparency to the whole process, it could also become a powerful tool for the contestants to exert a pressure against the other participating parties. Aim of this thesis is to analyse the legal framework of the challenging process, introduce a theoretical model of agent behaviour under this framework and find empirical evidence in the data on dispute resolutions collected from the Office for the Protection of Competition.

Methodology Game theory will be used to construct a model describing the decision-making process of agents contemplating challenging the procurement process. The empirical study will use data on dispute resolutions mined from the website of the Office for the Protection of Competition together with data on public procurement obtained by the Centre for Applied Economics. These data will be used in order to perform an econometric analysis verifying given hypotheses.

Hypotheses

1. Participation in procurement disputes makes it harder for the contestants to obtain future public contracts.
2. It is profitable for the unsuccessful bidders to challenge the public procurement processes.

Preliminary Structure

1. Analysis of the legal framework
2. Model of agent behaviour
3. Empirical analysis

Core literature

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Introduction

Provision of public goods and services can hardly be efficient without letting private companies perform a substantial part of the job (Domberger & Jensen 1997). Public procurement accounted for 31% of all public spending, about 13% of Czech Republic's GDP between 2009 and 2014 (Ministerstvo pro místní rozvoj 2015), and presented a considerable market for private firms to compete for. This competition inevitably introduces transactional hazards associated with the source-selection by the contracting authorities (Maser *et al.* 2010). To ensure that a socially desirable outcome of procurement is achieved, various safeguarding mechanisms were developed to promote transparency and efficacy of the procurement processes. Bid protesting is a self-policing governance mechanism allowing disappointed bidders to express their objections to the procurement process and initiate its review at the supervising authority.

Curbing agency problems at the contract authority level (Marshall *et al.* 1991) as well as improving procurement's ex-ante efficiency through fostering supplier's trust in the procurement system (Gordon 2006), incorporation of the bid protest mechanism into the public procurement process is not without its costs. By design, the bid protest mechanism gives disappointed bidders opportunities to disrupt the procurement process by delaying performance of public contracts (Lennerfors 2007), (Marshall *et al.* 1994). Contract authorities might respond by choosing the most protest-free procuring processes rather than opting for processes that maximise the procurement's expected value (Lennerfors 2007). Moreover the contract authorities might retaliate against the protesting bidders by excluding them from future procurement (Gordon 2006). Attention should therefore be paid to keep the costs incurred by such system abuse below the protest mechanism's benefits (Lennerfors 2007).

This thesis analyses selected efficiency aspects of the public procurement protest mechanism in the Czech Republic. Econometric tools are employed to estimate the individual-level effects of bid protesting on the protester's expected returns in terms of obtaining future public contracts. The analysis is carried

out using a unique sizeable dataset of 2,088 first instance bid protests filed between January 1, 2007 and December 31, 2014 obtained from the supervisor authority's website by a combination of automatised data mining, processing and hand-cleaning, linked to a complete dataset on public procurement containing 78,273 public contracts awarded during the same period.

The thesis is structured as follows: Chapter 1 reviews the relevant literature used in the thesis. Public procurement and bid protesting is described in the Chapter 2 with focus on the purpose, functioning, legal aspects and the Czech practice. Summary of the data used in the thesis is provided in the Chapter 3. The reasoning and motivation behind the study is presented in the Chapter 4, along with the hypotheses. Chapter 5 presents the methodology used for testing the hypothesis and empirical results. The last chapter concludes.

Chapter 1

Literature Review

The contemporary evidence-based economic literature on the topic of bid protesting in public procurement is quite scarce. The research focuses mainly on legal aspects of the problem while application of statistical and econometric methods remains under-utilised. Scholars use ample terminology in regard to bid protesting. Bid protests, review proposals, challenges, appeals and complaints are all terms used to address the same institution. This thesis resorts to the term "*bid protest*" in order to comply with the majority of the literature published to date. Following is a review of literature relevant for making of this thesis.

Efficiency aspects of contracting out are assessed by Domberger & Jensen (1997) who investigates international evidence to determine if spendings of public authorities can be reduced through competitive tendering. The differences between contract awarding arrangements of private companies and public authorities are summarised by Tadelis (2012) who concludes that simple projects should be procured by fixed-price competitive auctions while competitive dialogue together with cost-plus contracts should be preferred for complex projects.

Game theory approach to incentives in procurement is carefully built up by Laffont & Tirole (1993) and summarised by means of bi-matrix game model of public works procurement by Mitkus (2001). Marshall *et al.* (1994) use the game theory approach to analyse how bid protesting mitigates agency problems in procurement and occurrence of equilibrium protests.

Works in field of legal theory offer insights into institutional aspects of procurement design. Gordon (2006) provides a framework for institutional design analysis of bid protest mechanisms and argues that an efficient protest

mechanism has to balance trade-offs introduced by conflicting design choices. Aspects of the institutional design of U.S. Government Accountability Office (GAO) bid-forum that could help developing nations to improve procurement processes are discussed by Troff (2005) with focus on agency problems. Agency problems are also central topic of the paper by Marshall *et al.* (1991) who argues in favour of decentralised procurement oversight over the centralised auditing that arguably lacks incentive to thoroughly and efficiently supervise the procurement process.

Practical implications of institutional design of U.S. bid protest fora are scrutinised by Etzger & Yons (2007) who provide a critical reassessment of GAO protest mechanism and argue that the GAO's design allows costly strategic gaming of protests. Statistical analysis of GAO rulings was conducted by Maser *et al.* (2010) and (2012) who focus on aspects related to fairness and third party opportunism and find that the likelihood of protest increases with the number of smaller and international bidders and the protest success rate increases with complexity of the procured project.

In the European context, Lennerfors (2007) argues that European Act on Public Procurement altered incentives of contracting authorities towards protest-free processes instead of best possible outcomes and illustrates his claim on the Swedish case. Schmidt (2014) conducted an econometric analysis to determine what aspects influenced amounts of fines imposed by the Czech procurement supervising authority.

Chapter 2

Public Procurement, Bid Protests and the Czech Legal Framework

The purpose, functioning and legal framework of public procurement is briefly presented in this descriptive chapter. The Czech context is portrayed by brief summaries of statistics gathered from the annual reports on public contracts published by the Ministry of Regional Development (Ministerstvo pro místní rozvoj 2012) – (2014), complemented by the statistics available on the ministry's website¹. Following is a description of a bid protest mechanism with focus on legal aspects relevant for the analysis in the subsequent chapters. The bid-protest practice in the Czech Republic is illustrated using statistics reported in annual reports issued by the Office for the Protection of Competition (Úřad pro ochranu hospodářské soutěže 2007) – (2014) together with survey results published by the nonprofit NGO Oživení (Kameník 2013).

2.1 Public Procurement

Public procurement is a process of purchasing goods and services from private suppliers by public contracting authorities. Since the costs of public production and provision of goods and services can be too high at times (Domberger & Jensen 1997), it is desirable to reduce public spending and thus maximise contracting authority's economic surplus by allowing private firms to compete for public contracts. Private competition for public contracts is usually achieved through auctioning where firms are invited to submit their bids for pre-specified

¹<http://www.portal-vz.cz/cs/Spoluprace-a-vymena-informaci/Vyrocní-zpravy-a-souhrnné-údaje-o-verejnych-zakazk/Statisticke-údaje-o-verejnych-zakazkach>

public contracts.

The formation stage of public procurement is initiated once the contracting authority publishes the tender conditions and the potential suppliers (tenderers) subsequently submit their bids (tenders) within a legally binding time-frame. The evaluation stage follows during which the compliance of the suppliers with the qualification documentation is assessed together with respective bids and tender conditions. The contract is finally awarded to the supplier who meets the qualification criteria and who submitted the most favourable bid that meets the tender conditions and offers *ceteris paribus* the lowest price of all considered bids.

2.1.1 Legal Framework of Public Procurement

Since 2006, the legal framework providing for procedures of awarding of public contracts and supervision over its compliance is embodied in the Act 137/2006 Coll. on Public Contracts (further referred to as "*the Act*"). The Act defines a public contract as "*... a contract for pecuniary interest concluded between the contracting authority and one or more economic operators...*"ⁱ The subject matter of a public contract might be a supply of goodsⁱⁱ, execution of public worksⁱⁱⁱ, public service provision^{iv} or a framework agreement^v which grants the winning bidder a right to become a sole provider of specified goods and services for a predefined period of time.

The main principle of conduct declared in § 6 of the Act states that "*The contracting entity shall be obligated [...] to comply with the principles of transparency, equal treatment and non-discrimination.*" Adhering to these principles, the tender conditions shall not give any bidder competitive advantage or create unjustified obstacles to the competition^{vi}.

The Act defines several types of award procedures differentiated by their openness and strictness of imposed rules and limits. From the open procedure, which allows any supplier who meets qualification requirements to submit a bid, to the negotiated procedure without publication which is open only for a limited number of pre-selected bidders. Competitive dialogue represents an alternative option that allows the contracting authority to negotiate tender conditions with potential suppliers in order to achieve a more precise specification of the subject matter.

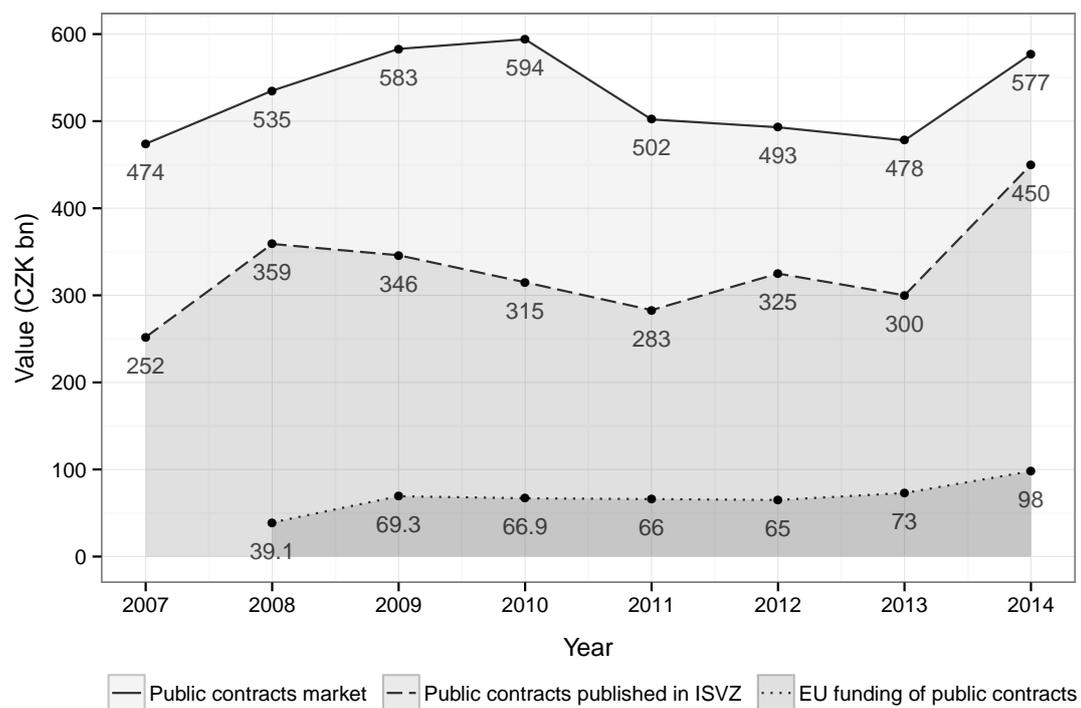
ⁱ§ 7, 137/2006 Coll. ⁱⁱ§ 8, 137/2006 Coll. ⁱⁱⁱ§ 9, 137/2006 Coll. ^{iv}§ 10, 137/2006 Coll. ^v§ 11, 137/2006 Coll. ^{vi}§ 45 (3) and § 61 (2b), 137/2006 Coll.

Tender conditions specify the type of evaluation criterion chosen by the contracting authority. The two basic evaluation criteria to choose from are the economic advantageousness of the tender and the lowest tender price^{vii}. The contracting authority should always choose the evaluation criterion according to the type and complexity of the public contract^{viii}.

2.1.2 Public Procurement in Numbers²

According to the data published by the Ministry of Regional Development, the share of the market for public contracts on the Czech GDP ranged between 11.7 and 15 percent between 2007 and 2014. In absolute terms, the yearly average value of the market over the period amounted approximately to CZK 530 bn.

Figure 2.1: Value of Czech Public Contracts over Time



Notes: The amount of EU funding for the year 2007 was not published.

Contracting authorities are obligated to publish information regarding initiation, formation, evaluation and conclusion of public contracts as defined in the Act^{ix} via the Information System on Public Procurement (ISVZ). However,

²The summary of all statistics presented in this section can be found in the Appendix A, Table A.2.

^{vii}§ 78, 137/2006 Coll. ^{viii}§ 78 (3), 137/2006 Coll. ^{ix}§ 146, 137/2006 Coll.

this obligation affects only contracts for supply of goods and public service provision of value exceeding CZK 2,000,000 and contracts for public works worth more than CZK 6,000,000. Information on contracts below these thresholds is published only voluntarily. The overall value of the public contracts market is plotted in Figure 2.1 along with the value of contracts published in the ISVZ. The proportion of the value of contracts published via ISVZ has risen from 53% in 2007 to 78% in 2014. Note, however, that for all public procurement initiated between April 1, 2012 and January 1, 2014, the thresholds were temporarily lowered to CZK 1,000,000 and CZK 3,000,000 for contracts for public supply and public service provision, and contracts for public works, respectively.

Public contracts co-funded by the European Union drew special attention in the recent years, mainly due to deficiencies in auditing of EU co-funded projects found by the audits of European Commission³. Moreover the corrective measures proposed by the Supreme Audit Office have been repeatedly labeled as inefficient (Bold 2013). Even though domestic audits of EU co-funded projects fail, auditing review can also be initiated by a superior European Court of Auditors (European Commission 2013). As opposed to the EU unfunded contracts, the European funds are provided to the contracting authorities for pre-specified purposes and for a limited time only. If the deadline is missed, the funds are no longer available. The share of EU funds on the total public procurement market was approximately 12.7% in the period between 2008 and 2014 as shown in Figure 2.1.

The value of public contracts with respect to the subject matter is depicted in Figure 2.2. Public works contracts traditionally represent a very important procurement segment, representing 45% of the procured value during the monitored period. Public works contracts are specific by being performed by a relatively small number of suppliers who compete for large-scale contracts. This is illustrated in Table A.1 which shows that 13 out of 15 largest suppliers by the total value of public contracts obtained in 2014 were from the construction industry. A sharp increase in the value of contracts for supply of goods is partially attributable to the above-mentioned lowering of the limits for mandatory publishing of public contracts in the ISVZ.

The evaluation criterion should always be chosen to reflect the complexity of the subject matter of the contract (Maser *et al.* 2012). While contract for

³As notified in the EC in letter from October 10, 2012 addressed to the Ministry of Transport <http://www.mdcr.cz/NR/rdonlyres/573323B4-57D4-423A-A1DB-6E74B8E6BBE8/0/16odp622012.pdf>

Figure 2.2: Value of Czech Public Contracts by Subject Matter

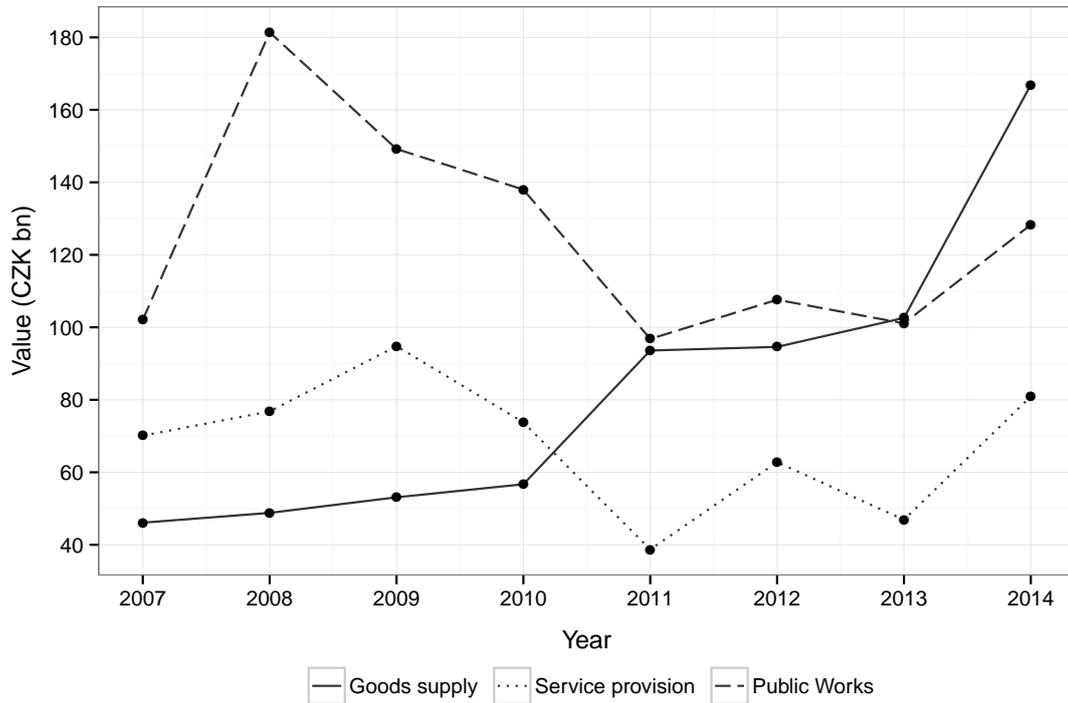
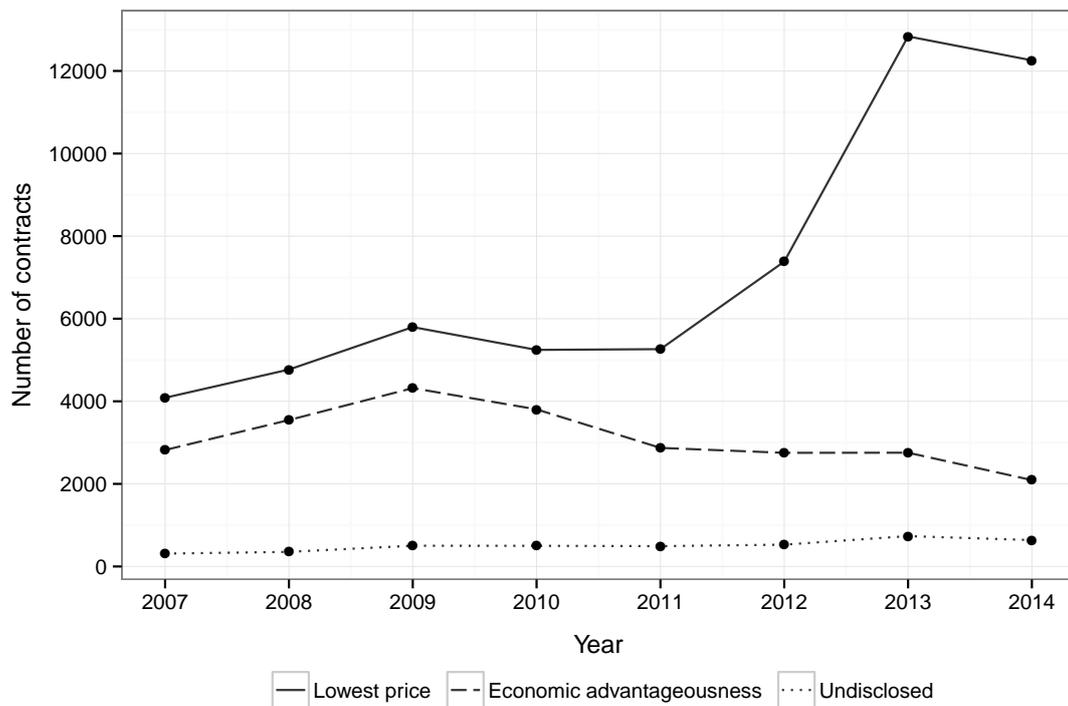


Figure 2.3: Number of Czech Public Contracts by Evaluation Criterion



office paper can surely be decided upon the lowest price criterion, a complex IT system should comply with more selective criteria. Excessive use of lowest price as an evaluation criterion hints at systematic problems. The apparent influx of the lowest price criterion and continuous decrease of economic advantageousness criterion can be seen in the Figure 2.3. In 2014, a full 82% of public contracts were evaluated based solely on the price criterion. It is important to note that this statistic is partially biased by the lowering of the limits for compulsory contract publishing between 2012 and 2014.

2.2 Bid Protest Mechanism

The procurement process sometimes generates corrupted outcomes⁴. This is due to various reasons including the principal-agent problem, favouritism, political connections, lack of expertise, vendor lock-in and collusion. The principal-agent problem is a consequence of misalignment between the goals of the procuring official and the goals of his office and it can lead to intentionally corrupted procurement process. The agent's incentives may be influenced by political connections or ties to a particular bidder. Unintentional errors in the procurement stem from the lack of administrative, legal and domain-specific expertise of procurement officials and can deter suitable bidders or lead to inefficiencies in public spendings. The officials' incentives to design efficient, transparent and error-free procurement might be crippled by the lack of personal accountability. The bidders also have their ways of bending the procurement outcome: the vendor lock-in is a strategy where a long-term service provider intentionally setups the service provision in such a manner that no other provider can easily replace him, while bidder collusion can occur in markets dominated by few major players.

Bid protesting is a mechanism introduced in order to provide supervision over the procurement process. Unlike other corrective mechanisms like auditing and criminal prosecution, bid protesting represents a self-policing oversight which entitles bidders and other interested parties to raise concerns about formation and evaluation of public procurement and allows them to initiate review at the supervising authority.

A well functioning bid protest mechanisms improves ex-ante efficiency of the procurement process. Qualified bidders would more likely participate in

⁴In the broader sense, meaning those deviating from the maximum attainable economic surplus.

the public procurement if they believed that the system is fair and efficient. Moreover contracting entities may exercise extra procuring efforts in order to avoid investigations by the supervising authority. While a well-functioning bid protest mechanism leads to more economically favourable outcomes, there is always a risk of system abuse that hinders the procurement process. If protests are too frequent, suitable suppliers might feel discouraged by the uncertainty of the contract reaching its performance stage. Delays caused by bid protesting may prove to be costly for contracting entities resolving urgent issues through public contracts.

The importance of bid protest mechanisms is recognised by international organisations. With respect to the international trade, the UN specifies a bid protest mechanism in UNCITRAL Model Law on International Commercial Arbitration (United Nations Commission on International Trade 2006) while WTO requires its members to establish a domestic review procedure in the Agreement on Government Procurement (WTO 2012). The European Union not only requires its members to operate a protest forum (European Commission 2000) but also ensures that there is enough time for complainants to file protests and that the protests are *”reviewed effectively and, in particular, as rapidly as possible”* while avoiding discrimination and maintaining transparency.

2.2.1 Office for the Protection of Competition⁵

The bid protest procedure has three consecutive instances in the Czech Republic. A complainant interested in obtaining a public contract who believes that her rights were harmed must first lodge an objection with the respective contracting authority^x. If rejected, the complainant has a right to file a bid protest at the supervising authority where she has a further option of initiating a second instance review by filing a remonstrance against the original decision^{xi}. Finally if a complainant believes that the supervising authority ruled unlawfully in both instances, she has an option to take legal action against the supervising authority at a court^{xii}.

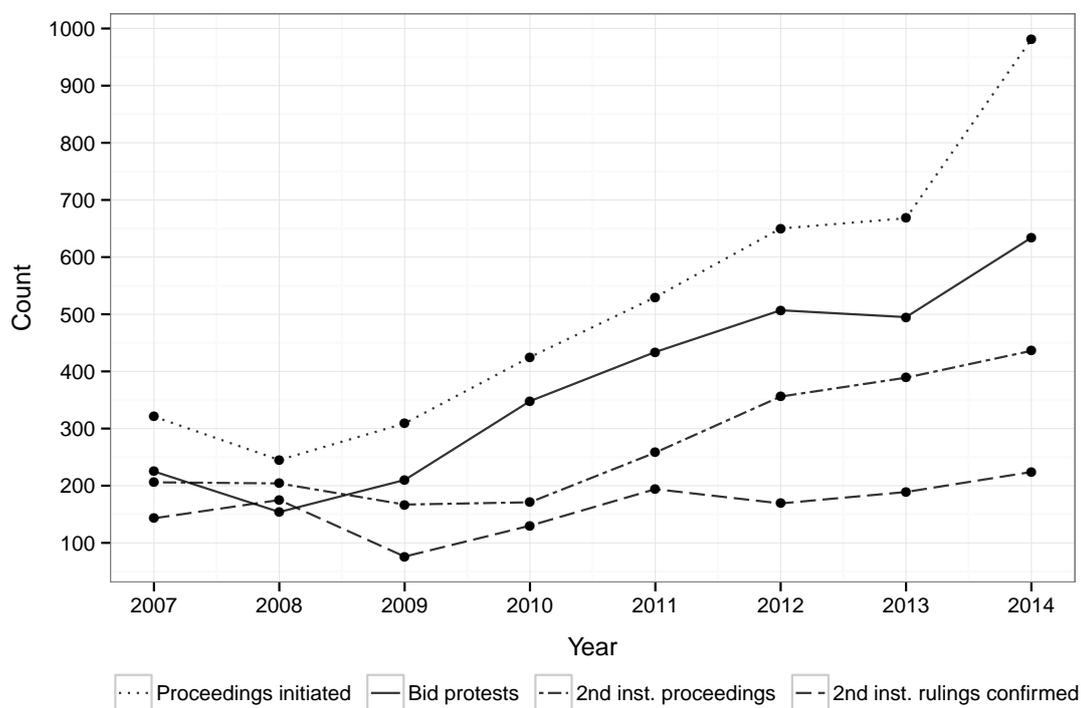
The Office for the Protection of Competition (ÚOHS) is the administrative supervising authority over the compliance with the Act^{xiii} authorised to grant

⁵The summary of all statistics presented in this section can be found in the Appendix A, Table A.3.

^x§ 110 (9), 137/2006 Coll. ^{xi}§ 152, 500/2004 Coll. ^{xii}§ 4 (1), 150/2002 Coll.
^{xiii}§ 112 (1), 137/2006 Coll.

interim measures, to decide whether awarding of public contracts complies with the Act, to order corrective measures and inflict sanctions, to examine administrative delicts and to review practices of the contracting authority^{xiv}. Complainants are given right to protest against all contracting entities and against all practices that are against the principles laid in the § 6 of the Act^{xv}. Subjects of bid protests include tender conditions, content of the contract notice, exclusion of a bidder from the award procedure, decision on selection of the winning bidder or usage of a certain type of award procedure.

Figure 2.4: Number of Proceedings at the ÚOHS



In the period between 2007 and 2014, 4,129 proceedings were initiated by the ÚOHS. That means approximately one proceeding was initiated for every twenty public contract procurements over the monitored period. 73% of the proceedings were bid protests initiated by a bidder of the disputed contract. During the last two years there was an increase in number of proceedings initiated ex officio, caused mainly by an increase in auditing activity. The rising frequency of bid protesting can be seen in Figure 2.4. The eight year time-frame also saw 2,187 second instance proceedings out of which 59% ended up confirming the first instance ruling.

^{xiv}§ 112 (1), 137/2006 Coll. ^{xv}§ 114 (1), 137/2006 Coll.

2.2.2 Legal Framework of the Bid Protesting Mechanism

Designing a bid protest mechanism is impossible without addressing a series of tradeoffs. While some could argue that the most just mechanism would initiate a thorough review of every procured contract, choices have to be made to increase its speed and efficiency, maintain transparency and independence, discourage abuse and provide meaningful relief. Legal framework of the bid protest mechanism represents a set of rules that shape incentives of participating agents with respect to the mechanism and is fundamental for conducting analysis of their actions. The following sections were inspired by a framework for legal analysis presented by Gordon (2006), Troff (2005) and Marshall *et al.* (1991).

Right to Protest

Despite the necessity for the bid protest legislature to remain nondiscriminatory, it is important to try to identify merit protests even before the supervising authority initiates a review. A forum can avoid resource wasting with frivolous complaints and issues of marginal importance by limiting certain subjects right to initiate protest through narrowing the scope of protestable contracts or by requiring protestors to cash deposits to signal integrity of the protest.

The right to protest at the ÚOHS is given to any economic operator with interest in obtaining a public contract of value above CZK 2 million in case of contracts on supply of goods or provision of services and value above CZK 6 million in case of public works contracts, who believes that his rights have been harmed or at risk of being harmed by the contracting authority^{xvi}. Alternatively, protests can be initiated *ex officio*^{xvii}. Before filing a bid protest, the protester has to cash a deposit amounting to 1% of the bid price but no less than CZK 50,000 and no more than CZK 2 million to the bank account of the ÚOHS. If the bid protest is rejected as unjust, the deposited amount becomes a revenue for the State budget^{xviii}. CZK 595 million was deposited at the ÚOHS between 2007 and 2014 out of which 13% was forfeited.

Time Limits

Speed is a crucial determinant of a protest mechanism's efficiency. Once the most suitable bidder is selected, disappointed bidders should have enough time

^{xvi}§ 110 (1), 137/2006 Coll. ^{xvii}§113, 137/2006 Coll. ^{xviii}§ 115, 137/2006 Coll.

to prepare and file protests, yet any unnecessary delay leads to an increase in costs of the entire procurement. This is especially true once the supervising authority imposes interim measures on the protested contract.

Objections against the procurement process must be delivered to the contracting authority within 15 days from the date on which the complainant learned about the alleged infringement but before the conclusion of the contract^{xix}. Objections against the tender conditions must be delivered within 5 days from the expiry of the limit for bid submissions^{xx}. If the objection has been rejected, the complainant has 10 days to file protest at the ÚOHS^{xxi}.

The contracting authority must not conclude a contract with the winning bidder before the limit for filing bid protests at the ÚOHS has expired^{xxii}. If a bid protest is delivered to the ÚOHS, the award period must be suspended until the publication of the ÚOHS ruling^{xxiii} and the contracting authority must respond to the bid protest within 10 days^{xxiv}. Time period for the ÚOHS to issue a ruling starts once the contracting authority has delivered all required documentation and when the deposit has been paid by the protester^{xxv}. The ÚOHS has 30 days to issue a first-instance ruling that can be further prolonged by up to 30 days in especially complex cases or when it is required to conduct on-site oral hearings, summon a person or make an expert report^{xxvi}.

However in practice, it seems that the ÚOHS regularly breaches the limits imposed by the Act. According to the survey by Oživení (Kameník 2013) conducted with 12 representatives of suppliers and 66 representatives of contracting authorities, full 68% of the respondents' last proceeding exceeded the lawful limit of 60 days. The excessive length of the proceedings is identified in the survey as one of the largest deficiencies of the Czech procurement supervision, as the Act 500/2004 Coll. Code of Administrative Procedure sets no sanctions for breaching the time limits.

The ÚOHS can impose an interim measure prior to its ruling on case by case basis. An interim measure either imposes suspension of the award procedure or a ban on concluding a contract^{xxvii}. No prior objections are required for a protester to propose banning of a contract conclusion^{xxviii}. After the contract is concluded, only contracts awarded without publication or by breaching a ban on concluding contracts can be protested^{xxix}. Interim measures are used quite commonly with 961 interim measures being imposed between 2007 and

^{xix}§ 110 (2), 137/2006 Coll. ^{xx}§ 110 (3), 137/2006 Coll. ^{xxi}§ 114 (4), 137/2006 Coll.
^{xxii}§ 82 and §110 (6), 137/2006 Coll. ^{xxiii}§ 43, 137/2006 Coll.
^{xxiv}§ 114 (6), 137/2006 Coll. ^{xxv}§ 114 (7), 137/2006 Coll. ^{xxvi}§ 71, 500/2004 Coll.
^{xxvii}§ 117 (1), 137/2006 Coll. ^{xxviii}§ 110 (7), 137/2006 Coll. ^{xxix}§ 114 (2), 137/2006 Coll.

2014, which equals to approximately 24% of the proceedings initiated during the same period.

Evidence Available to the ÚOHS

The supervising authority should be able to gather all the evidence necessary for reaching a ruling. To achieve this, other parties beside the contracting authority must deliver required documents and testimonies.

The contracting authority, the protesting bidder and the winning bidder can all become parties to proceedings at the ÚOHS^{xxx}. The ÚOHS can request a written report by the contracting authority that includes a subject matter of the public contract, an agreed price, a justification of the chosen type of award procedure, a justification of the awarding process, an identification of all bidders and their respective bids, a proportion of the contract carried out by subcontractors and reasons for exclusions of bidders excluded from the award procedure^{xxxi}. Along with the written report, the contracting authority is obligated to send the contract documentation and the concluded contract (in case the contract has already been concluded) along with its representation of the protested conduct^{xxxii}.

Corrective measures

A disappointed bidder who is considering protesting against the process or the outcome of the procurement weighs benefits and harms of filing a bid protest. A supervising authority that possesses the power necessary to provide a meaningful relief in order to correct wrongdoings of the contracting authority may encourage the disappointed bidder to take an action against the unlawful contracting authority.

Once the ÚOHS deems the bid protest successful, it has the authority to cancel the procurement for the protested contract or any of its parts and impose a ban to conclude and perform the contract^{xxxiii}. All parties to proceedings bear their costs associated with the protest^{xxxiv}.

Another corrective measure aimed at administrative delicts is imposing of a fine. In general, administrative delicts occur when a contracting authority fails to comply with the procedures laid down by the Act which subsequently affects the outcome of the procurement^{xxxv}. Economic operators can commit

^{xxx}§ 116, 137/2006 Coll. ^{xxxi}§ 85 (3), 137/2006 Coll. ^{xxxii}§ 114 (6), 137/2006 Coll.
^{xxxiii}§ 118, 137/2006 Coll. ^{xxxiv}§ 119 (1), 137/2006 Coll. ^{xxxv}§ 120 (1), 137/2006 Coll.

administrative delicts by falsifying qualification to perform the contract^{xxxvi}. When the ÚOHS imposes a fine on a public contracting authority, the result is budgetary neutral, but the effect imposed on the fined authority's budget can be significant. Fines amount up to 5% of the procured contract or up to CZK 10,000,000 depending on the type of administrative delict and the type of the contract^{xxxvii}. 787 fines were imposed between 2007 and 2014 with average value of CZK 260,000.

^{xxxvi}§ 120a (1), 137/2006 Coll. ^{xxxvii}§ 120 (2), 137/2006 Coll.

Chapter 3

Data

This chapter explains the structure and explores the vast dataset used in the empirical part of the thesis. The dataset was created by combining two separate datasets together. The first one is a complete dataset of all published public contracts since July 1, 2006. The second one includes all bid protest rulings by the ÚOHS since July 1, 2006.

3.1 Public Procurement Data

In order to perform analysis of the bid protest mechanism on the level of individual contract authorities and protesters, it was necessary to obtain data on all public contracts concluded in the period between January 1, 2007 and December 31, 2014. As mentioned in the Subsection 2.1.2, contracting authorities are obligated to publish information regarding public contracts on the publicly accessible part of the Information System on Public Procurement¹. These data are being collected and thoroughly cleaned by the Center of Applied Economics (CAE)², a Czech NGO focusing on data-driven policy research. This exceptional dataset was used for purposes of this thesis with kind permission of the CAE.

The provided dataset contains unique identification of each contracting authority, public contract and winning bidder. Moreover each contract has its CPV³ category, value, indication of EU funds usage, release date, cancellation

¹<http://www.vestnikverejnychzakazek.cz>

²<http://cae.zindex.cz/en/>

³Common Procurement Vocabulary (CPV) is a single classification system developed by the European Union to unify industry classification of public contracts, for more information visit http://simap.europa.eu/codes-and-nomenclatures/codes-cpv/codes-cpv_en.htm.

date (if applicable) and subject matter category listed. For the purposes of the thesis a subset of 78,273 contracts was selected, leaving out contracts with value below CZK 2,000,000 and contracts with respective winning bidders from outside the Czech Republic⁴. These contracts were published by 7,648 different contract authorities and claimed by 10,654 distinct winning bidders.

All CPV codes were merged into ten most common CPV category groups while the eleventh includes the remaining contracts. Their summary can be found in the Table A.5. Over half of all contracts fall under the construction industry. IT and telecommunications, machinery and transportation were the most frequent groups from the remaining categories.

Summary of various types of contracts in the dataset is presented in the Table A.4. The number of EU co-funded contracts has seen sharp increase over the period of interest even though the overall amount of funds has changed only slightly. Around one third of the total number of contracts in the dataset was co-funded by the EU. The relative prevalence of public works contracts is also apparent.

3.2 Bid Protest Rulings Data

According to the Act, the ÚOHS is obligated to continuously publish all its final rulings at its internet address^{xxxviii,5}. Web scraping techniques were employed, for purposes of this thesis, in order to save the full text of all rulings and extract relevant information including the resulting verdicts, the instance type and the date of initiation of the proceeding. Next, automatised data processing techniques were used to extract the unique identification of all parties to the proceedings, unique identification of the protested public contract and links to other instances in the same case from each of the published rulings. In cases where the processing algorithm would not identify any of the information with extreme degree of certainty, the data were hand-cleaned to preserve the desired level of accuracy. A unique dataset of 2935 1st rulings linked to 2,929 public contracts from the period between 2007 and 2014 was produced using the above-described procedure. To preserve consistency with the public procurement dataset, all protests of contracts worth less than CZK 2,000,000 were excluded

⁴This is due to inconsistent identification of foreign bidders.

⁵<http://www.uohs.cz/cs/verejne-zakazky/sbirky-rozhodnuti.html>

together with protests filed by foreign bidders. Proceedings initiated ex officio were also disregarded.

Eighty different types of verdicts were identified within the dataset. These were subsequently divided into twenty-two different groups according to the practical meaning of the verdict. Finally, five ruling categories were established. The full overview of the rulings used in the dataset is presented in Table 3.1.

Table 3.1: Classification of rulings used in the dataset.

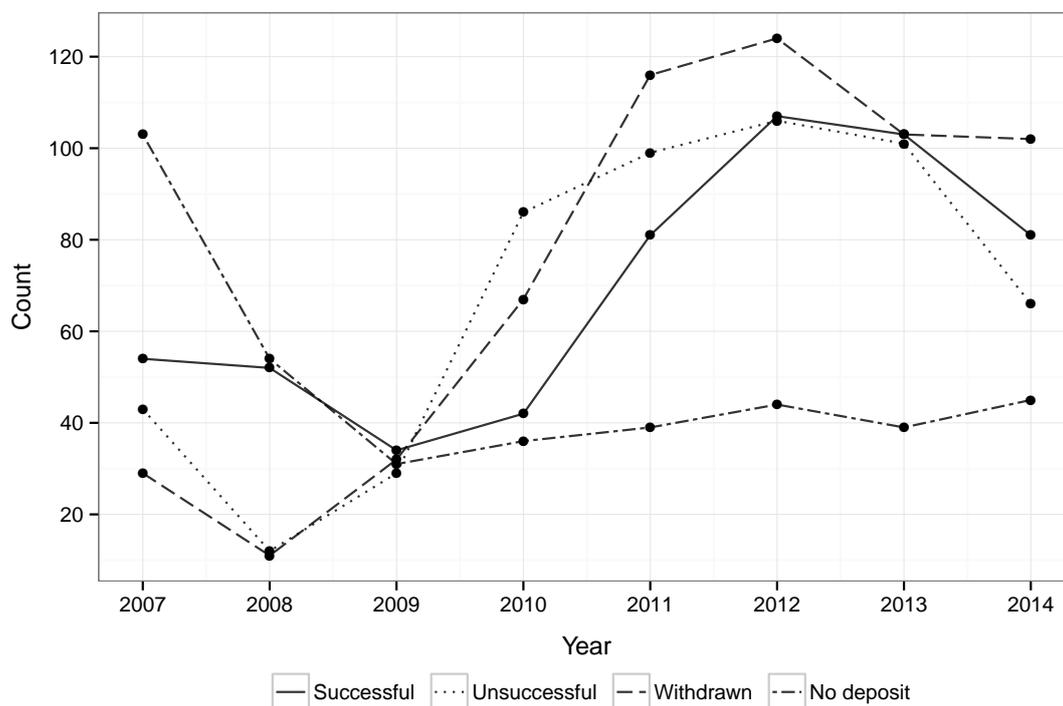
Instance	Ruling category	Count	Description
First	Successful	555	The contracting authority was deemed guilty of violations against the Act.
	Unsuccessful	552	The bid protest was recognised as unjustified.
	Withdrawn	589	The protester has withdrawn his protest.
	No deposit	392	The protester has failed to cash deposit within the required timeframe.
Second	Successful	54	The first instance ruling was lifted or overturned.

Notes: Names of the first instance ruling categories are considered from the protester's point of view while the second instance is considered successful regardless of who appealed to the ÚOHS.

Furthermore, first and second instance rulings were aggregated together based on the context. For example: if a first instance ruling was unsuccessful and the second instance ruling was successful, then the whole protest was considered successful. How proportion of each ruling type on all rulings in the dataset evolved over the time is plotted in Figure 3.1. Note however that the ÚOHS rulings data were collected in March 2015 and that they exclude rulings related to previous years that were published since then.

There is no apparent dominance of successful or unsuccessful protests over the other category in the dataset. Between 2009 and 2012, the unsuccessful bid protests prevailed, but successful ones were more frequent in the remaining years. This might be surprising but categories of withdrawn protests and those with no deposit would usually be added among the unsuccessful ones. The proportion of bid protests that were not reviewed because the protester failed to cash the required deposit in time has been on a rise since 2009. Protests that were filed but later withdrawn represented the most common category of bid protests in the last four years of the monitored period. Two plausible explanations of these phenomena are offered. Either the protesters assess their chance of success after they file the protest or the disappointed bidders have

Figure 3.1: Frequency of ruling categories in the dataset over time



learned that a credible threat of initiating bid protest proceedings can bring some sort of economic gain. Both explanations hint at systematic inefficiency that leads to unnecessary complications of the procurement process and costs incurred to the ÚOHS in form of wasted time and resources while reviewing the case. Moreover, the second explanation hints at strategical system abuse caused by disappointed bidders exerting pressure against other interested parties. In the forthcoming analysis, categories "no deposit" and "withdrawn" are usually merged together.

Number of bid protests associated with public contracts that are co-funded by the European Union is graphed in the Figure 3.2. The proportion of bid protests aimed at EU co-funded contracts has risen from 6% in 2007 to 48% in 2014. This roughly corresponds to the increase of number of EU co-funded contracts in the dataset over the same period (see Table A.4), yet the share of protested contracts slightly surpasses the share of EU co-funded contracts. This might be caused by a generally higher attractiveness of the co-funded projects or by a stronger supervision caused by the increased attention the EU funds have got in the recent years. Moreover EU co-funded contracts in the dataset are found more likely to be protested (see Figure B.1) but the protests are less likely to succeed (see Table A.6).

Figure 3.2: Number of bid protests associated with EU co-funded public contracts

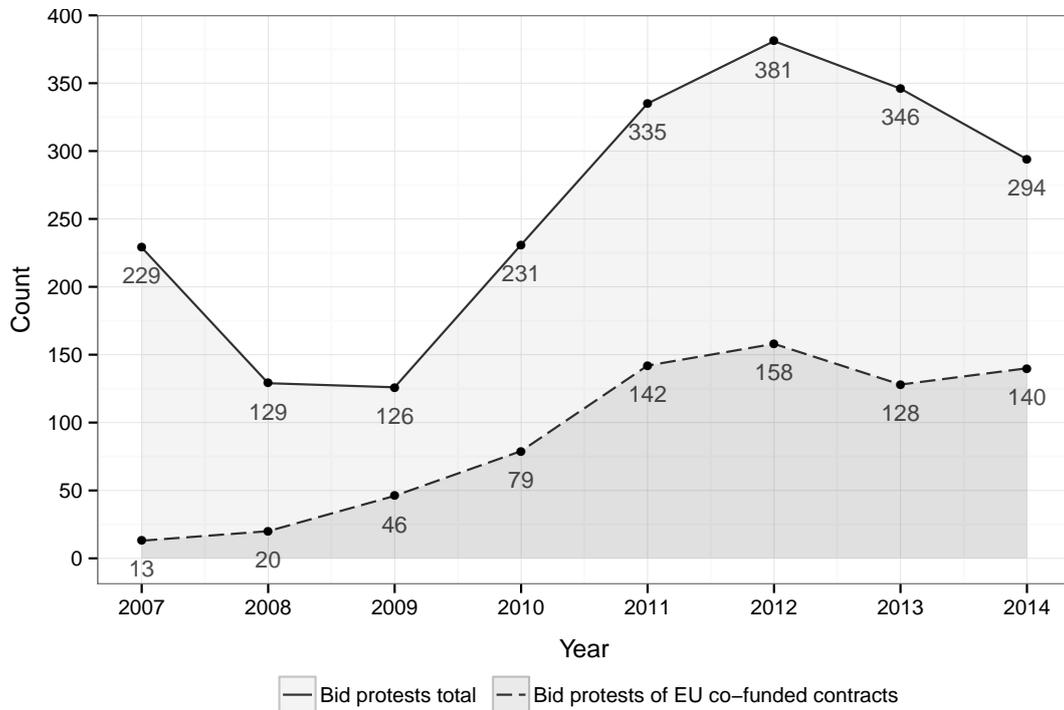


Figure 3.3: Number of bid protests by subject matter of the associated contract

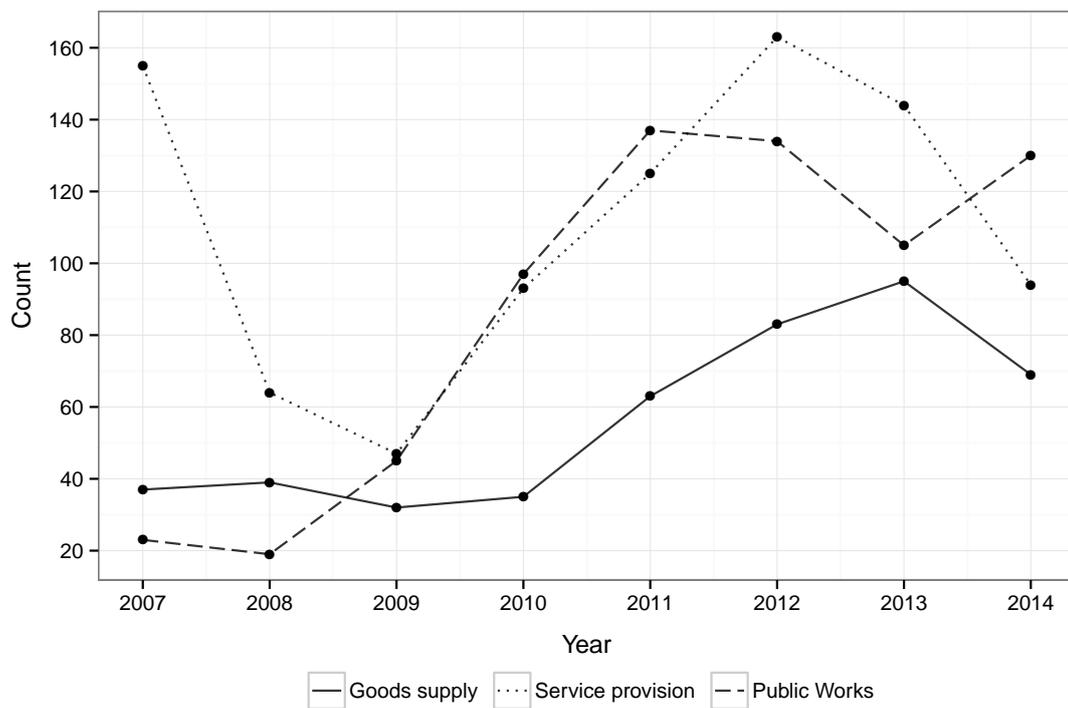


Figure 3.3 reveals that the increase of number of bid protests is mainly driven by protests of public contracts on service provisions and public works. This might suggest two things. Firstly, contracts for goods might not be worth protesting against, given their lower values and higher quantities. Secondly, these contracts are usually procured using simpler procedures that provide less room for protesting compared to more complex tenders. Proportions of different ruling categories by subject matter type of the associated contracts is plotted in Figure B.2. A certain common trend is observable for all ruling categories. Interestingly, the "withdrawn or no deposit" rulings have been significantly more common among public works contracts since 2011 than for the remaining categories. This could hint at growing incentives to file bid protests regardless of the intent to reach the ÚOHS ruling.

Chapter 4

Motivation and Hypotheses

Using the game theory approach, public procurement is usually modelled as a winner takes all kind of auction game. As described in Laffont & Tirole (1993) and Mitkus (2001), the game is played by $n+1$ players. First player is the buyer (the contracting authority) who is trying to infer the suppliers costs in order to maximise his economic surplus. The set of buyer's strategies is constrained by the applicable law, that offers a finite set of procurement process designs to choose from. The buyer is usually free to specify certain legally bound parameters of the procurement design including the tender conditions and evaluation criteria. The selected design maximises expected value of the outcome of the auction while minimising the specifications costs. The other n players are the bidders aiming to obtain the procured contract and their strategies are represented by a finite set of economically feasible tenders that they can offer. The best response is indicated by a tender with the highest expected return given the procurement process design choice of the buyer. The law forbids any type of secret cooperation among the bidders and between bidders and the buyer. Information available should therefore consist solely of production and cost functions of the bidder and publicly known information about the contract and the market. The game can further vary greatly when considering aspects like settlements (Marshall *et al.* 1994) or favouritism (Laffont & Tirole 1993).

The bid protest mechanism represents a significant modification to the game. Firstly, it establishes a whole new round. After the evaluation phase of the procurement, any disappointed bidder is given a chance to file a bid protest against the buyer. To decide whether to protest or not, the potential protester calculates his expected return of the protest. He must consider all positive outcomes and the chance of their occurrence, including the value of

the contract, the probability of winning a bid protest and the probability of succeeding in the renewed auction. He must also account for litigation costs and chance of losing the cashed deposit in case of unsuccessful bid protest. Secondly, the buyer anticipates the potential bid protests in the procurement design stage. The buyer is now not only considering the returns of the auction given its design, but he must also weight the losses incurred by a potential bid protest. If the otherwise optimal procurement design is likely to be protested and costs of protested contract are high given the expectations about the bid protest mechanism, the buyer might decide to choose some less efficient but more protest-free arrangement. And lastly, the supervising authority becomes an additional player to the game, pursuing its own goals that do not necessarily align with the goals of the society it represents.

Problems associated with incentives in the public procurement and its supervision as outlined above are quite complex and diverse. Selected issues within the Czech context will be discussed in the following chapter, concluded with formulation of empirically testable hypotheses.

4.1 Successful and Unsuccessful Protesting

The Czech bid protest mechanism described in Chapter 2 considers both ex-ante and ex-post efficiency. Ex-ante, the existence of bid protesting mechanism should incentivise contracting authorities to create less corrupt procurement procedures. Ex-post, the bid protest mechanism should provide means of correcting wrongdoings after the damage has been done. Disappointed bidders who believe that the ÚOHS is impartial and able to reveal and remedy harmful misconduct are motivated to protest the procurement if they have confidence in their ability to win the contract in a lawful competition. The protester's willingness to risk losing the deposit, if unsuccessful, also reveals that he expects positive economic gains. This notion is supported by the survey conducted by Maser *et al.* (2010) among experienced GAO protesters who claimed that they protest to win a successive solicitation, obtain competitive intelligence and improve their chance in obtaining future contracts. In absence of settlement payments, the profit motive of protesting is most easily explained as increasing the chance of obtaining the disputed contract. This motivates the formulation of the first hypothesis.

Hypothesis 1. *A successful bid protest leads to an increased number of contracts awarded by the contracting authority of the protested contract to the protester in the short-term.*

If the system were not efficient, protesters who believed that they offered the best tender to the contracting authority and subsequently proved that their chances to obtain the contested contract were harmed would get no reward for their efforts. Efficient bid protest mechanism should reassure the bidders that protesting, even if unsuccessful, has no negative impact on their chances to obtain contracts from the same contracting authority. The following hypothesis assumes that the bid protest mechanism is efficient.

Hypothesis 2. *Unsuccessful bid protests have no effect on the number of contracts awarded by the contracting authority of the protested contract to the protester in the short-term.*

In case of bid protests, contracting authorities have nothing to win. The buyers have all incentives to try to prevent harmful protests. One way to do that is through simplification of procurement design, so that fewer of its features can be protested. Another way is to signal to the bidders that protesters will be excluded from future procurement. As Gordon (2006) suggests, bidders might be deterred from protesting by fear of retaliation against the protesting vendors. This phenomenon is incorporated in the third hypothesis.

Hypothesis 3. *Filing of a bid protest against a contracting authority does lead to a decrease in number of contracts awarded by the same contracting authority to the protester in the long-term.*

4.2 Bid Protest Withdrawals and Unpaid Deposits

The combined ruling category of withdrawn protests and protests without cashed deposit is the largest category in the collected dataset. There are few possible explanations as to why the protesters change their minds so often. Protesters may find initiation of bid protest proceedings easy enough to commence a protest when they feel only a slightest chance of success. The period before the ÚOHS starts reviewing the procurement materials gives them time to reassess their expected gains from protesting. Because the deterrent in form of lost deposit might be too strong for some bidders and because they might consider the ÚOHS rulings inconsistent or unjust, they decide to give up on on

the protest. Alternatively, inexperienced bidders of public contracts may not initially realise all the requirements necessary to initiate the proceedings and subsequently fail to initiate the review.

Other explanations involve strategical bid protesting. These kinds of protests are not primarily motivated by a desire to reach the final ÚOHS's ruling in the case. Etzger & Yons (2007) describe the incentive of protesters to delay awarding of a contract in order to disrupt business opportunities of their competitors. Moreover a current incumbent supplier who fails to retain the contract may use the timeframe of protest proceedings to earn additional income by performing the contract. Interviews conducted by Maser *et al.* (2010) reveal that motivations to file frivolous protests include hurting the winner by delaying the award. Lennerfors (2007) suggests that appeals against procurement evaluation are abused in order to exasperate the buyer by stopping procurement process.

The strategic bid protesting is made possible by excessive lengths of proceedings conducted by the ÚOHS. The contracting authority might need urgent performance of a contract but protests induce a risk of unacceptably lengthy delays. In such situations, the contracting authority is willing to reach settlement with the protester as long as it is less harmful than the costs of delay. Although there are many forms of settlements that could be reached and certainly not all withdrawn protests are motivated by extortion, the next hypothesis speculates that one way to settle such conflicts might be awarding of additional contracts by the contracting authority.

Hypothesis 4. *Withdrawing of a bid protest or failure to cash the required deposit at the ÚOHS leads to an increased number of contracts awarded by the contracting authority of the protested contract to the protester in the short-term.*

Chapter 5

Methodology and Empirical Results

The following chapter describes the methodology of econometric models used to assess whether the hypotheses stated in the previous chapter hold true or not. The results are reported along with a discussion about the magnitude, significance and practical importance of the findings. Two econometric models are proposed. The first model is employed to test short-term effects as stated in Hypotheses 1,2 and 4. The long-term effects of Hypothesis 3 are tested using a modified specification of the short-term model.

The relationship between individual contract authorities and bidders needed to be analysed in order to test hypotheses about the effects of protesting on returns in form of contracts obtained by the protested contracting authority. To achieve this, a large panel data set was formed with each unit consisting of a pairing of one contract authority and one supplier. There are 7,026 unique contract authorities and 10,795 unique suppliers in the dataset. For purposes of the analysis, only a subset of 37,620 pairings where at least one contract was awarded or protested needed to be selected. Each pairing has 8 associated observations, each representing one year in the period between 2007 and 2014. The analysis of individual buyer–bidder relationships was carried out using the fixed effects estimation of the panel data.

5.1 Model of Short-Term Effects

Since the proposed hypotheses are concerned with bid protest returns in terms of obtained contracts, the dependent variable represents the number of public contracts awarded to the supplier by the respective contract authority and independent variables represent number of bid protests filed against the con-

tracting authority within the same pair. Protests against different types of public contracts and various categories of bid protest rulings are expected to yield diverse returns. Variable representing number of bid protests was therefore broken down based on the presence of EU funding of the protested contract to "co-funded" and "unfunded" and according to the type of the ÚOHS ruling category to "successful", "unsuccessful" and "withdrawn or no deposit". The "withdrawn or no deposit" category of protests has been further broken down by the type of subject matter of the procured contract to "goods supply", "service provision" and "public works". All of the resulting 10 variables representing different kinds of bid protests such as "co-funded and successful" or "unfunded, withdrawn or no deposit of goods supply" were included in the model. The short-term effect is defined for the purposes of hypothesis testing as an effect spanning over two successive periods. Dependent variables representing numbers of bid protests were therefore added up with their respective first lags.

Differentiation of protests of EU co-funded public contracts from unfunded ones is motivated by the institutional differences related to drawing of the funds, protest and protest success rates and the increasing number of EU co-funded contracts. Differentiation by the rulings category is essential for testing of Hypotheses 1, 2 and 4. The differences of public contracts related to their subject matter motivated the splitting of the "withdrawn or no deposit" ruling category. Since this largest category may be influenced by factors such as strategic gaming as well as incompetence in protesting, the splitting should make identification of the conflicting causes slightly easier. Moreover, the share of "withdrawn or no deposit" protests differs among subject matter types. Special attention is paid to protests against public works contracts that have been withdrawn more often in the recent years.

Heterogeneity in number of awarded contracts among different industry sectors in time has been accounted for by including interaction terms of dummy variables representing each of the 8 years with all supplier's industry category dummy variables. Industry category of suppliers has been approximated by finding the most common CPV category of contracts supplied and protested between 2007 and 2014 by each of the suppliers. Base supplier's industry category for estimations is the "others" category. Heterogeneity among different suppliers has been accounted for by adding a term approximating each supplier's share of the market of public contracts issued in his industry over the past two years. The share was calculated as a sum of all contracts won by the

supplier over the past two periods divided by the sum of all contracts awarded in his industry category over the last two periods.

The model was estimated using the fixed effects method of estimation. To determine whether the fixed or random effects were prevailing, a Hausman test (Greene 2003) was employed and his null hypothesis was rejected. Dickey-Fuller test (Dickey & Fuller 1979) was used to determine that the model is stationary. Finally a Breusch-Pagan test (Breusch & Pagan 1979) indicated a presence of heteroskedasticity. Therefore heteroskedasticity-robust standard errors are reported along with the coefficients. Hypotheses of all mentioned tests were tested at a 0.01 significance level. It is important to note that by design, the fixed effects regression takes into account all time-invariable effects by demeaning observations within each contract authority–supplier pair. As a byproduct, this approach results in dropping of all units with no variation in the dependent variable before the estimation takes place. This means that all contractor-supplier pairs where the supplier has not won any contract but has filed at least one protest have been dropped. This affects 237 out of 10,795 suppliers present in the dataset and it may have positively affected the magnitude of estimated coefficients.

Subset of estimation results including the variables of interest is reported in Table 5.1¹. The results show startling differences between returns of protests of EU co-funded projects and protests of EU unfunded protests. When a bidder protests EU co-funded contract, he can expect being awarded on average 0.9 contracts from the same contractor that he protested against in the year of the protest or in the following year. In case of unsuccessful protest, a negative effect is observed. This means that bid protest mechanism offers an option to retrieve unjustly awarded contracts, but unsuccessful protesters either refrain from competing for contracts of the same contracting authority in the short-term or that the protesters are retaliated against.

In case of EU unfunded contracts, successful protesting has no statistically significant impact on chances of obtaining contracts in the short-term. This result can be interpreted by suggesting that contracting authorities can procure EU unfunded contracts, that were successfully protested, using adjusted procurement processes. In these new procurements, the protesters chances to obtain the protested contract remain unchanged. Either the winning protesters wrongly assessed their chances of obtaining the contract in a lawful procurement or the contracting authorities are able to change the specifications of

¹For the full results see Appendix C, Table C.1 – Table C.3.

Table 5.1: Results of the fixed effects estimation of the model of short-term effects (subset)

	<i>Dependent variable:</i>
	pc_won
protest_eu_succ.sum2	0.907* (0.380)
protest_eu_nonsucc.sum2	-0.134* (0.060)
protest_eu_withd_deposit_goods.sum2	-0.127* (0.060)
protest_eu_withd_deposit_services.sum2	0.022 (0.040)
protest_eu_withd_deposit_constr.sum2	0.049 (0.048)
protest_noneu_succ.sum2	-0.032 (0.016)
protest_noneu_nonsucc.sum2	0.033* (0.016)
protest_noneu_withd_deposit_goods.sum2	0.014 (0.037)
protest_noneu_withd_deposit_services.sum2	0.001 (0.001)
protest_noneu_withd_deposit_constr.sum2	0.110* (0.054)
n	37,620
N	263,340
R ²	0.013
Adjusted R ²	0.011
F Statistic	37.350***

*p<0.05; ***p<0.01

the contract so that the protester does not win in the new procurement. The difference between this effect and the effect of successful protests against EU co-funded contracts might be explained by the fact, that EU funds are more strictly tied to specifications of the procured contract.

Interestingly, the coefficient of contractual returns of unsuccessful protests of EU unfunded contracts is positive and statistically significant. Even though it is of small magnitude, this result represents a puzzle worth investigating further. One plausible explanation is that protesters that are initially inexperienced, are not deterred by the unsuccessful protests. Instead they gain experience and are able to acquire contracts in consecutive procurements of the same buyer. However this reasoning does not explain why successful protesters

of the same contracts enjoy no such gains on average.

Lastly, two out of six "withdrawn or no deposit" coefficients are statistically significant. A withdrawn protest of EU co-funded contract on goods supply on average lowers the number of obtained contracts from the protested contracting authority by 0.134 contracts. On the other hand a withdrawn protest of EU unfunded contract on public works brings on average additional 0.11 contracts awarded by the protested buyer in the short-term. There is no indication of successful strategic protesting of EU co-funded contracts. In case of contracts on goods, the negative coefficient suggests that withdrawn protests are a sign of discouragement. The positive effect in case of EU unfunded contracts on public works however shows that strategic protesting might bring reward in form of additional contracts awarded by the protested contracting authority.

To sum up, the null hypothesis related to Hypothesis 1 can be rejected in case of EU co-funded contracts. The Hypothesis 2 was not rejected in any of the cases. While unsuccessful protests of EU funded contracts have negative short-term effect on obtained contracts from the protested contracting authority, the effect is opposite in case of EU unfunded contracts. Finally, the null hypothesis related to Hypothesis 4 was not rejected in two cases. In case of EU funded contracts on goods supply, withdrawing of protest is apparently not associated with pressurising of contracting authorities. This is not true in context of EU unfunded contracts on public works where withdrawn protests are associated with gains that hint at possibilities of system abuse through strategical protesting.

5.2 Model of Long-Term Effects

To assess the Hypothesis 3 related to possible retaliation by contracting authorities against the protesters in the long-term, a modification of the previously introduced model has been made. The same panel data set suitable for analysing the individual relationships between buyers and bidders was used for the estimation. In order to focus on long-term effects, the dependent variable is now represented by a sum of public contracts awarded by the contracting authority to the paired supplier in three consecutive periods after the protest has been filed. Dependent variables are now representing 6 different types of protests filed in the current period. Remaining terms again control for the heterogeneity of the public contract market in different industries in time in the same way as in the previously presented model.

The same set of econometric tests as in the case of short-term effects model was employed, yielding the same results as before. The model was estimated using fixed effects estimation and a subset of result including the variables of interest is reported in Table 5.2² along with heteroskedasticity-robust standard errors.

Table 5.2: Results of the fixed effects estimation of the model of long-term effects (subset)

	<i>Dependent variable:</i>
	pc_won_future.sum3
protest_eu_succ	0.026 (0.114)
protest_eu_nonsucc	−0.079* (0.036)
protest_eu_withd_deposit	−0.036 (0.028)
protest_noneu_succ	0.015 (0.033)
protest_noneu_nonsucc	−0.016 (0.033)
protest_noneu_withd_deposit	0.0003 (0.001)
Observations	188,100
R ²	0.011
Adjusted R ²	0.009
F Statistic	32.331***

*p<0.05; ***p<0.01

The only statistically significant estimate is the negative estimate of effect of unsuccessful protests of EU co-funded public contracts. The same effect was observed in the short-term model. Since there is no statistically significant effect of filing successful and withdrawn protests, this estimate hints at the effect being caused by protesters, who are deterred after hearing an unfavourable ruling at the ÚOHS. The magnitude of the effect is also rather small. Filing an unsuccessful protest against EU co-funded contract is associated with average decrease of public contracts awarded by the protested contracting authority to the protester by 0.079 in the following 3 years.

Hypothesis 3 is rejected for all examined types of protests with exception

²For the full results see Appendix C, Table C.4 – Table C.5.

of unsuccessful protests aimed at EU co-funded contracts. This effect, however, is most likely not associated with retaliation by the protested contracting authority but rather with bidders intentionally refraining from competing for contracts of the contracting authority against which they have once unsuccessfully protested. Statistical insignificance of the remaining estimates does not hint at issues related to retaliation by contracting authorities.

Chapter 6

Conclusions

An empirical policy analysis was conducted in this thesis on a vast original dataset mined from publicly available sources using econometric methods of panel data methods. The assessment of the Czech institutional framework of public procurement and bid protesting combined with exploratory data analysis motivated formulation of hypotheses about short-term and long-term returns of bid protesting in terms of contracts awarded by the protested contracting authority. The results suggest that there are substantial differences in outcomes of protests attributed to EU funding and potential system abuse caused by frivolous protesting. Signs of retaliation of contracting authorities aimed at protesting bidders were not found.

Firstly, analysis of institutional framework of public procurement and bid protesting in Czech Republic was carried out. Official statistics provided by the Ministry of Regional Development and the Office for the Protection of Competition were used to demonstrate how these institutions perform in practice. To gain deeper insight into the problematics, full texts of all bid protest rulings issued by the supervising authority were collected by automatised data mining. The raw data were subsequently processed in order to identify protest outcomes, parties to proceedings and protested public contracts. Linking the dataset to a dataset of all public contracts awarded between 2007 and 2014 made it possible to obtain even more information about the nature of the protests. Exploration of the newly obtained data was performed in a separate chapter.

The acquired insights were crucial for formulation of the hypotheses. Four hypotheses were presented, three of which were related to short-term effects of bid protesting on returns in form of awarded contracts from the protested contracting authority and one referred to possible retaliation by contracting

authorities in the long-term.

The hypotheses were tested using econometric methods of panel data estimation. The panel data set was constructed by composing contracting authority–supplier pairs and by summing up awarded contracts and filed bid protests for each pair in each year in the observed 8 years period. Bid protests related to EU co-funded public contracts were found to have substantial, statistically significant returns while protest related to EU unfunded contracts were found to have no effect. Unsuccessful protests against EU co-funded appeared to deter suppliers from future procurements in both short and long run. Unsuccessful protests of EU unfunded contracts were found to have small positive, statistically significant effect. No strong indication of long-term retaliation was found. Finally, protests of public works contracts that were not co-funded by the EU and that were prematurely closed by the protester were found to yield positive returns hinting at possible system abuse.

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Legislation

Act 137/2006 Coll. on Public Contracts

Act 500/2004 Coll. Code of Administrative Procedure

Appendix A

Tables

Table A.1: 15 largest suppliers for public contract authorities by the total value of public contracts obtained in 2014

	Company Name	PC Value (CZK bn)	PC Count	Industry
1	Metrostav a.s.	4867	144	Construction
2	Eurovia CS, a.s.	4336	266	Construction
3	OHL ŽS, a.s.	4161	71	Construction
4	STRABAG a.s.	3681	290	Construction
5	HOCHTIEF CZ a.s.	3481	98	Construction
6	IMOS Brno, a.s.	2923	51	Construction
7	Skanska a.s.	2156	97	Construction
8	SWIETELSKY stavební s.r.o.	1937	161	Construction
9	SEFIMOTA, a.s.	1689	1	El. contractor
10	BusLine a.s.	1656	6	Transportation
11	COLAS CZ, a.s.	1644	122	Construction
12	Porr a.s.	1429	78	Construction
13	SYNER, s.r.o.	1303	21	Construction
14	POHL cz, a.s.	1113	36	Construction
15	M-silnice a.s.	1016	51	Construction

Table A.2: Summary of public procurement contracts concluded between years 2007 and 2014

Year	GDP (CZK bn)	PC market (CZK bn)	PC in ISVZ (CZK bn)	EU funding (CZK bn)	PC for goods (CZK bn)	PC for services (CZK bn)	PC for public works (CZK bn)
2014	4266	577	450	98.00	166.90	80.90	128.30
2013	4086	478	300	73.00	102.60	46.90	101.10
2012	4048	493	325	65.00	94.60	62.80	107.60
2011	4022	502	283	66.00	93.60	38.70	96.80
2010	3954	594	315	66.90	56.70	73.80	138.00
2009	3922	583	346	69.30	53.10	94.80	149.20
2008	3848	535	359	39.10	48.80	76.80	181.40
2007	3663	474	252		46.10	70.10	102.10

Table A.3: Summary of the ÚOHS rulings between years 2007 and 2014

Year	PC	Proceedings initiated	Bid Protests (1st inst.)	Protests (2nd inst.)	Rulings conf. (2nd inst.)	Interim measures	Fines (CZK m)	Fines (CZK m)	Deposits (CZK m)	Forfeit. deposits (CZK m)
2014	14988	981	634	436	224	109	273	72.40	130.80	6.50
2013	16330	668	495	389	189	179	119	58.80	90.20	16.30
2012	10662	650	507	356	169	205	119	39.50	134.00	5.70
2011	8662	530	434	258	194	144	89	28.80	27.00	5.50
2010	8922	425	348	171	130	96	60	11.20	83.00	9.30
2009	9748	309	210	167	76	101	69	4.00	60.00	3.90
2008	8155	245	154	204	175	63	66	3.00	22.60	16.20
2007	7280	321	225	206	143	64	83	10.80	47.00	14.70

Notes: Rulings conf. (2nd inst.) = 2nd instance rulings with verdict that confirmed the first instance ruling

Table A.4: Summary of the public procurement dataset used for the empirical analysis

Year	PC	EU co-funded	PC for goods	PC for services	PC for public works	Lowest price criterion	Econ. advant. criterion
2007	7456	487	2057	2425	2912	3582	3874
2008	8218	1450	2029	2316	3815	3422	4796
2009	9411	2625	2291	2866	4198	4005	5406
2010	8612	2942	2387	2436	3746	3573	5039
2011	8719	3357	2804	2349	3551	4340	4379
2012	10093	3412	3353	2630	4086	5787	4306
2013	13437	5332	4496	2829	6098	8760	4678
2014	12327	5853	4760	2256	5299	8387	3940

Table A.5: Summary of the CPV category groups occurrence in the dataset.

CPV category group	Count
Construction	36841
IT and telecommunications	8410
Other	6397
Machinery	5052
Transportaion	4502
Law, consulting and other comm. services	4402
Technical services	3522
Medical equipments	3310
Forestry and agriculture	2085
Energy sources	1893
Health, social work and education	1859

Table A.6: Bid protest rates and bid protest success rates of protests associated with EU funded public contracts and EU unfunded public contracts.

Year	BPS	Bid protest rate (% of EU co-funded PCs)	BP success rate (% of EU BPS)	Bid protest rate (% of EU unfunded PCs)	BP success rate (% of nonEU BPS)
2007	229	2.67%	38.46%	3.1%	23.61%
2008	129	1.38%	20%	1.61%	44.04%
2009	126	1.75%	21.74%	1.18%	31.25%
2010	231	2.69%	18.99%	2.68%	17.76%
2011	335	4.23%	19.72%	3.6%	27.46%
2012	381	4.63%	26.58%	3.34%	29.6%
2013	346	2.4%	29.69%	2.69%	29.82%
2014	294	2.39%	20.71%	2.38%	33.77%

Notes: Bid protest rate = proportion of contracts of a given category that were protested
Bid success rate = proportion of bid protests of a given category that were successful

Appendix B

Figures

Figure B.1: Proportions of protests of EU co-funded and un-funded contracts on total number of EU co-funded and un-funded contracts

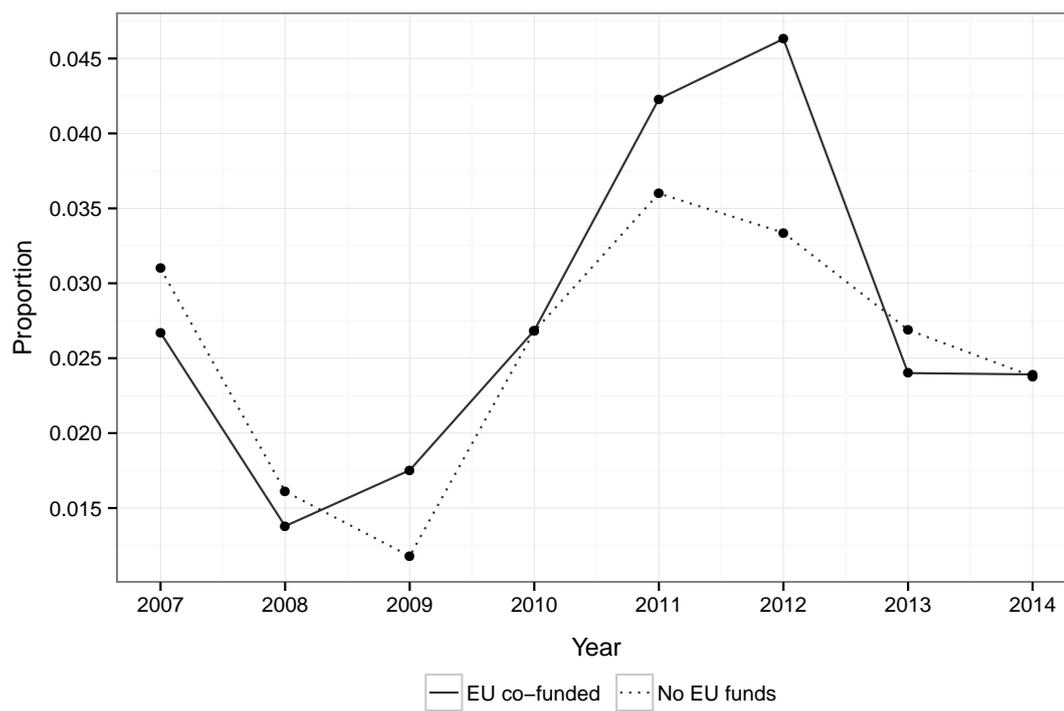
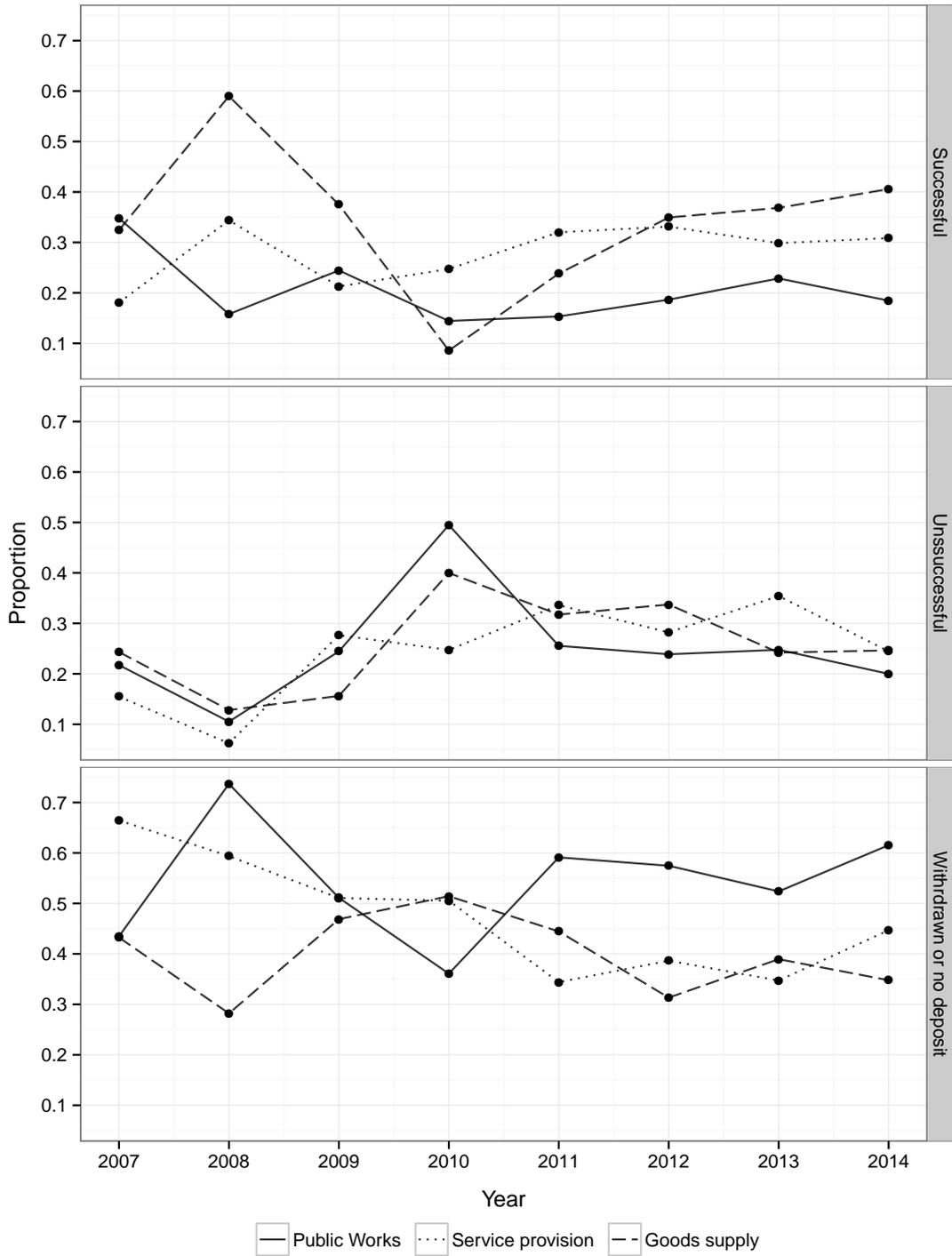


Figure B.2: Rates of bid protest ruling categories within each subject matter type of associated contracts



Appendix C

Regression Results

Table C.1: Results of the fixed effects estimation of the model of short-term effects (full)

	<i>Dependent variable:</i>
	pc_won
pc_won_share_cpv.sum2.lag1	1.616*** (0.167)
protest_eu_succ.sum2	0.907* (0.380)
protest_eu_nonsucc.sum2	-0.134* (0.060)
protest_eu_withd_deposit_goods.sum2	-0.127* (0.060)
protest_eu_withd_deposit_services.sum2	0.022 (0.040)
protest_eu_withd_deposit_constr.sum2	0.049 (0.048)
protest_noneu_succ.sum2	-0.032 (0.016)
protest_noneu_nonsucc.sum2	0.033* (0.016)
protest_noneu_withd_deposit_goods.sum2	0.014 (0.037)
protest_noneu_withd_deposit_services.sum2	0.001 (0.001)
protest_noneu_withd_deposit_constr.sum2	0.110* (0.054)
year2009	-0.049*** (0.012)
year2010	-0.077*** (0.012)
year2011	-0.102*** (0.011)
year2012	-0.084*** (0.012)
year2013	-0.066*** (0.012)
year2014	-0.071*** (0.012)
year2009*cpv_transportation	0.060*** (0.016)
year2010*cpv_transportation	0.068*** (0.015)
year2011*cpv_transportation	0.070*** (0.015)
year2012*cpv_transportation	0.063*** (0.016)
year2013*cpv_transportation	0.242*** (0.017)
year2014*cpv_transportation	0.173*** (0.017)

Table C.2: Results of the fixed effects estimation of the model of short-term effects (continued)

year2009*cpv_energy_sources	0.060*** (0.023)
year2010*cpv_energy_sources	0.162*** (0.019)
year2011*cpv_energy_sources	0.257*** (0.021)
year2012*cpv_energy_sources	0.221*** (0.023)
year2013*cpv_energy_sources	0.327*** (0.023)
year2014*cpv_energy_sources	0.235*** (0.023)
year2009*cpv_it_telecom	0.083*** (0.018)
year2010*cpv_it_telecom	0.095*** (0.017)
year2011*cpv_it_telecom	0.118*** (0.016)
year2012*cpv_it_telecom	0.151*** (0.017)
year2013*cpv_it_telecom	0.169*** (0.018)
year2014*cpv_it_telecom	0.095*** (0.017)
year2009*cpv_forestry_agriculture	0.224*** (0.056)
year2010*cpv_forestry_agriculture	0.126*** (0.026)
year2011*cpv_forestry_agriculture	0.091*** (0.026)
year2012*cpv_forestry_agriculture	0.113*** (0.031)
year2013*cpv_forestry_agriculture	0.077*** (0.029)
year2014*cpv_forestry_agriculture	0.117*** (0.029)
year2009*cpv_medical_equip	0.102*** (0.022)
year2010*cpv_medical_equip	0.089*** (0.021)
year2011*cpv_medical_equip	0.109*** (0.020)
year2012*cpv_medical_equip	0.116*** (0.021)
year2013*cpv_medical_equip	0.119*** (0.022)
year2014*cpv_medical_equip	0.109*** (0.022)
year2009*cpv_law_consulting	0.083*** (0.017)
year2010*cpv_law_consulting	0.085*** (0.017)
year2011*cpv_law_consulting	0.082*** (0.016)
year2012*cpv_law_consulting	0.061*** (0.017)
year2013*cpv_law_consulting	0.070*** (0.017)
year2014*cpv_law_consulting	0.024 (0.016)

Table C.3: Results of the fixed effects estimation of the model of short-term effects (continued)

year2009*cpv_construction	0.073*** (0.014)
year2010*cpv_construction	0.063*** (0.013)
year2011*cpv_construction	0.054*** (0.013)
year2012*cpv_construction	0.060*** (0.013)
year2013*cpv_construction	0.156*** (0.014)
year2014*cpv_construction	0.096*** (0.014)
year2009*cpv_machinery	0.080*** (0.015)
year2010*cpv_machinery	0.135*** (0.015)
year2011*cpv_machinery	0.204*** (0.016)
year2012*cpv_machinery	0.228*** (0.016)
year2013*cpv_machinery	0.264*** (0.017)
year2014*cpv_machinery	0.330*** (0.017)
year2009*cpv_tech_services	0.060*** (0.021)
year2010*cpv_tech_services	0.079*** (0.020)
year2011*cpv_tech_services	0.096*** (0.020)
year2012*cpv_tech_services	0.137*** (0.021)
year2013*cpv_tech_services	0.134*** (0.021)
year2014*cpv_tech_services	0.104*** (0.021)
year2009*cpv_health_social_edu	0.265*** (0.027)
year2010*cpv_health_social_edu	0.128*** (0.024)
year2011*cpv_health_social_edu	0.116*** (0.024)
year2012*cpv_health_social_edu	0.159*** (0.025)
year2013*cpv_health_social_edu	0.116*** (0.024)
year2014*cpv_health_social_edu	0.124*** (0.024)
n	37,620
N	263,340
R ²	0.013
Adjusted R ²	0.011
F Statistic	37.350***

*p<0.05; ***p<0.01

Table C.4: Results of the fixed effects estimation of the model of long-term effects (full)

	<i>Dependent variable:</i>
	pc_won_future.sum3
objec_eu_succ	0.026 (0.114)
objec_eu_nonsucc	−0.079* (0.036)
objec_eu_withd_deposit	−0.036 (0.028)
objec_noneu_succ	0.015 (0.033)
objec_noneu_nonsucc	−0.016 (0.033)
objec_noneu_withd_deposit	0.0003 (0.001)
year2008	−0.099*** (0.016)
year2009	−0.132*** (0.015)
year2010	−0.118*** (0.016)
year2011	−0.084*** (0.018)
year2008*cpv_transportation	0.072*** (0.023)
year2009*cpv_transportation	0.073*** (0.022)
year2010*cpv_transportation	0.242*** (0.023)
year2011*cpv_transportation	0.343*** (0.026)
year2008*cpv_energy_sources	0.283*** (0.040)
year2009*cpv_energy_sources	0.456*** (0.036)
year2010*cpv_energy_sources	0.643*** (0.040)
year2011*cpv_energy_sources	0.646*** (0.044)
year2008*cpv_it_telecom	0.115*** (0.027)
year2009*cpv_it_telecom	0.186*** (0.024)
year2010*cpv_it_telecom	0.264*** (0.027)
year2011*cpv_it_telecom	0.242*** (0.030)
year2008*cpv_forestry_agriculture	0.094 (0.068)
year2009*cpv_forestry_agriculture	−0.010 (0.058)
year2010*cpv_forestry_agriculture	−0.056 (0.063)
year2011*cpv_forestry_agriculture	−0.028 (0.067)
year2008*cpv_medical_equip	0.112*** (0.031)
year2009*cpv_medical_equip	0.127*** (0.029)
year2010*cpv_medical_equip	0.153*** (0.031)
year2011*cpv_medical_equip	0.148*** (0.035)

Table C.5: Results of the fixed effects estimation of the model of long-term effects (continued)

	<i>Dependent variable:</i>
	pc_won_future.sum3
year2008*cpv_law_consulting	0.100*** (0.023)
year2009*cpv_law_consulting	0.076*** (0.022)
year2010*cpv_law_consulting	0.053** (0.023)
year2011*cpv_law_consulting	-0.021 (0.025)
year2008*cpv_construction	0.052*** (0.019)
year2009*cpv_construction	0.040* (0.018)
year2010*cpv_construction	0.132*** (0.019)
year2011*cpv_construction	0.172*** (0.022)
year2008*cpv_machinery	0.197*** (0.023)
year2009*cpv_machinery	0.342*** (0.022)
year2010*cpv_machinery	0.469*** (0.023)
year2011*cpv_machinery	0.594*** (0.026)
year2008*cpv_tech_services	0.092*** (0.029)
year2009*cpv_tech_services	0.173*** (0.027)
year2010*cpv_tech_services	0.233*** (0.029)
year2011*cpv_tech_services	0.244*** (0.032)
year2008*cpv_health_social_edu	0.112*** (0.036)
year2009*cpv_health_social_edu	0.006 (0.033)
year2010*cpv_health_social_edu	-0.008 (0.036)
year2011*cpv_health_social_edu	-0.004 (0.040)
Observations	188,100
R ²	0.011
Adjusted R ²	0.009
F Statistic	32.331***

*p<0.05; ***p<0.01