PUBLIC PROCUREMENT AND POLITICAL CONNECTIONS: THE CASE OF LATVIA

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Abstract

This study provides empirical evidence how political connections (donation to the political party) can add value to the firm during 2002-2005. The connected firm is likely to have 23% (1 applicant) less competition, when applying for public procurement contests. Obtained results are significant at 1% significance level. The results are robust and possibly underestimate the impact of the connectedness. However, there is insufficient evidence that larger procurement is the causal source of increased sales for connected firms investigated by Dombrovsky (2008). There are also indications that connected firms are participating in less transparent procedures and they are likely to receive larger procurement value during the sample period. The implications suggest that political connections hinder competition for procurement, add value to the firm and give incentives to firms seek political connectedness.

Keywords: political connections, firm level performance, public procurement

Acknowledgements

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1   Introduction

The role of the political connections has been widely researched recently and there is an increasing evidence showing that political connections can add value through various channels to the firm. Such phenomenon is especially pronounced in countries with weak (or undeveloped) legal system and its enforcement, because, as indicated in the literature (Goldman, Rocholl, & So, 2006), it is difficult to prevent the possible misuse of political connections. Recent study conducted by Dombrovsky (2008) indicates that politically connected firms outperform (as measured by the growth in sales) politically unconnected firms in Latvia, yet the exact value-adding channel is not identified. While there are different possible channels (i.e. preferable legislation or government subsidies), this study will focus on government procurement contracts, which as described by Goldman, Rocholl, and So (2008) are often awarded not on the efficiency grounds but due to the connectedness.

The developing legal system and recent increase of public procurement spending during 2007 in Latvia were 17%, while in 2002 the corresponding amount was just 8% of GDP (PMB, 2007) makes this channel especially appealing. However, it can create several inefficiencies in the economy (rent extraction by government officials, money not invested into the required fields due to the overspending and per se overspending of the money). Alleged overspending and possible misallocation of procurement contracts have become anecdotic in the Latvian society. An example shown by Rozentale (2008) reveals that procurement technical specifications for recycling containers included detailed size characteristics (which were different from previously used in Latvia) and three different contracting authorities had identical specifications (even with respect to the punctuation) and the only enterprise with such containers was associated with the ex-prime minister A.Skele. This case shows that political connections or outright bribery can influence the ex-post outcomes of public procurement contract allocation.

Nevertheless, there is no empirical evidence of such misallocation of procurement contracts in Latvia and thus the research question is: **"To what extent is there a link between political connections and allocation of the public procurement contracts in Latvia during 2002-2005?"** In order to investigate it two sub questions are stated:

    1) Whether increased performance (measured by the growth in sales) for politically connected companies can be attributed to the received procurement contracts?

2) Whether politically connected companies are likely to face less competition for public tenders from other companies?

This paper uses publicly available data on public procurement (provided by the only monitoring authority). The focus is on the sample of all firms in Latvia, which have received public procurement contracts in the time span of 2002 – 2005 and on the sample of the politically connected firms, investigated by Dombrovsky (2008). Firm is considered to be politically connected to the party if it (or its board members or significant shareholders) have made a donation to this party. The choice of this time period is twofold. First of all, the unique dataset on the politically connected firms is available. Secondly, data on the campaign contributions (donations) became available only after February 1st 2003 (it was not known previously that this data will become publicly available), which allows to believe that donations coming from business interests were not intentionally concealed using other people, which as indicated by Corruption Combating and Prevention Bureau expert is common practice now (personal communication, February 6, 2009).

 To answer the first sub question, all firms, which have donated to political parties during 2002 election cycle and received public procurement in 2002 or 2003, are examined. Time span is narrowed because elections of 2002 naturally divides sample into firms politically connected with elected parties and not elected parties. Thus it is possible to investigate whether firms associated with elected parties experience increase in received procurement contracts in the following year. Procurement change only for the following year is examined, in order to measure the effect of the elections and the change in political landscape. It is hypothesized that performance of the politically connected firms can be attributed to the received public procurement contracts.

All firms, which received procurement contracts during 2002 – 2005 are examined in order to answer second sub question. As revealed by representative from Coruption Prevention Bureau (personal communication, February 6, 2009) it is possible for public officials to shape technical specifications in order to misallocate procurement contracts, which discourages other companies to apply. Thus it is hypothesized that there will be fewer applicants in cases where politically connected company wins.

Due to insufficient number of firms in the sample, the first sub question was analyzed only by using descriptive analysis. Results showed that procurement is not the source of increased performance. It is found that there is no clear effect that donation to a party (which got elected) and increases the public procurement contracts awarded in the following year.

Second sub question was analyzed by using descriptive and regression analysis. It was concluded that controlling for industry fixed effect politically connected firms are likely to face 1.08 applicants less (controlling for industry fixed effect) and 1.97 applicants less (without industry fixed effect) from total average of 4.51, when applying for public procurement. There are also indications that such firms receive larger public procurement volume. The results are robust to the changed definition of the connectedness.

The rest of the paper is organized as follows: First section reviews the literature. The description of the procurement system in Latvia and corruption risks associated with the procurement sector is provided in section two. Section three presents the methodology. Section four describes the data sample and provides summary statistics. Empirical results are provided in the section five. Section six provides the discussion and section seven concludes.

2   Literature Review

In this part of the thesis literature review is provided about several strands of academic research about political connections. First, competing theories are presented to show why it is rational to support some party. Second, studies examining the role of political connectedness in determining the (both positive and negative) value of the firm are shown. Third, efficient procurement contracting and procedure design is revealed. Lastly, contributions to the literature are stated and the closest paper to this study is analyzed.

There could be many economically justified reasons, why to support some particular candidate or political party. However there are two prevailing alternative explanations: 1) campaign contributions as a form of investment (Snyder, 1990) and in this context the theory of rent seeking can be applied (Krueger, 1974); 2) campaign contributions as a form of political consumption (Ansolabehere, Figueiredo and Snyder, 2002). The first explanation is intuitively appealing, because campaign contributions as every investment are expected to bring some rate of return, thus forcing politicians to provide donors with respective 'benefits' in exchange for campaign contributions. The second alternative explanation is that excitement and care about the political life of the country will lead to donation to politicians, who will promote the public policy in the right direction.

Very good description and rather parsimonious modelling of the investment motive is provided by Snyder (1990), who models campaign contributions as a simple asset market and politicians as agents who are competing for these assets. On the other hand Ansolabehere, Figueiredo and Snyder (2002) by using descriptive and econometric analysis find that special interest groups (SIGs) bring very little money into the U.S. politics and this money does not affect the decisions of the politicians, therefore arguing that consumption motive is more applicable in the cases of campaign contributions. One of the implications is that even if it does not influence the decisions, campaign contributions 'buy' access to some things, which would not be otherwise accessible. Previous evidence shows that there is significant difficulty in disentangling the consumption motive from the investment motive thus further research is needed for externally valid conclusions. As it is indicated in the literature (Faccio,2004) the investment motive (e.g. influencing politicians) is usually more prevailing in countries with weak legal framework and high corruption. Several surveys made by Transparency International (Delna,2007) show that the level of corruption in Latvia is one of the highest in the European Union and Kazoka (2007) argues that the main motivator for political donations

in Latvia is "quid pro quid" principle of obtaining support or favour in return. This makes rent seeking theory and investment motive more applicable in the case of Latvia. However, Karpovics and Stafecka (2006) show that one of the sources for political donations are wealthy individuals, who are supervisory board members in government owned firms with 'excessive' salaries.

The review of the studies trying to establish the causal relationship between the firm's value and the political connectedness will be provided further. The most commonly mentioned explanation for increased firm's value is that connectedness helps to get specific resources (which are not available to all market participants) therefore allowing connected firms to easier gain the competitive advantage. One of the most important resources for successful development of the company is the access to bank's finance. Mian and Khwaya (2004) by using unique loan level data set from Pakistan, find that the political connectedness (as measured by having politician on its board) increases the possibility to get access to government banks funding, but the default rates for connected firms are also much higher. It therefore shows that this access to finance is granted not on the efficiency or profitability considerations, but only due to the political connectedness resulting in losses, which are transferred to the taxpayers. Authors suggest that this is connected with the very poor institutions in Pakistan and it is in line with the previously mentioned assumptions that investment motive dominates in countries with high corruption. Similar findings are provided by Claessens, Feijen and Laeven (2006) who using the data from Brazil, conclude that politically connected firms have preferential access to banks' finance. Similarly to the case of Pakistan authors conclude that this is mainly connected with weak institutions and thus with rather high corruption in the country. In addition, they also show that firms, having preferential access to banks' finance in general, are returning smaller return on assets and thus entailing welfare and efficiency losses, which are estimated at least 0.2% of GDP per annum. Another channel is reviewed, which deals with corporate bailouts. The extensive survey is provided by Faccio, Masulis and McConnel (2005) who investigate the possibility of 450 bailouts across 35 different countries and find that the politically connected firms are more often bailed out in comparison with their unconnected competitors. They suggest that this effect is even more profound, when firms operate in the country, which already receives financial aid from International Monetary Fund or World Bank.

Relevant studies have also been written about relationship between political connectedness and the stock market reaction to the news arriving about the politicians. The method of event study analysis is mainly applied in these studies. Faccio (2004) in his survey suggests that

political connections are widespread worldwide, that political connectedness is more appealing in the countries with high corruption level and poor institutions (and provide example of Russia, where more than 86.75 % of the market participants are politically connected). His findings also suggest that there is a statistically significant relationship between stock price of connected firms and news about political events happening in the country. Fisman (2001) in his paper investigates how stock returns of the publicly traded Indonesian firms are connected with the political connection of the firms to President Suharto. By using "event study" approach author concludes, that stock returns of connected firms (as measured by Suharto dependency index) are more dependent on the rumours on Suharto's health than unconnected.

Therefore many previously reviewed studies written by different scholars provide the link that firms become politically connected to get benefits later. Study written by Bertrand, Kramarz, Schoar and Thesmar (2006) provides rather different viewpoint - political connections not only bring value to the firms but also create costs, which can eventually outweigh benefits. They associate costs with employment decisions of the politically connected managers (CEOs), which make decisions about employment in the election time, in order to maximize the possibility of politicians being re-elected rather than the value of firm in the hope that this re-election will bring benefit later. Therefore, this study challenges the 'conventional assertion that political connections imply only benefits to the firm. However literature about impact of political connections for the firm level in Latvia is also important for this study. Dombrovsky (2008) using unique data from Latvia shows that performance of the firms, which have donated to political parties, improves after there is a beneficial shift of the power in the political landscape. Similarly Babaicevs and Bobilevs (2007) develop a probability model and show that politically connected enterprises are more likely to obtain EU structural funds in Latvia.

There is also significant amount of literature devoted for analysis of optimal procurement contracting. According to the formal model derived by Mcafee and McMillan (1986) it is efficient for the government to use "incentive pricing" (assuming some gains for lower costs, but also paying more for higher factual costs) rather than fixed price agreements. Bower (1993) further analyzes the available tools to ensure "incentive pricing" (e.g. auditing, which incurs costs) and finds that using incentive contracts in multiple periods can be optimal given the auditing costs. Porter and Zona (1993) examine New York State auctions in building state highways and might have found evidence for collusive agreements or cartel bid rigging. Yet

they note that even if some formal test procedure will be used by public authority it would be relatively easy to avoid it, thus making cartel detection extremely difficult.

However, there is lack of research about the political connectedness and the possibility to get public procurement contract. Goldmann, Rocholl and So (2008) are trying to establish a causal link between two variables: 1) the connection of the firm to the political party; 2) amount of the government procurement contracts received by the firm. Authors show that the shift in the political power will result in the redistribution of government procurement contracts for firms when compared across political background of various board members. Therefore our study will contribute to the existing literature in at least several ways:

- Examine one channel how political connections can affect firm's value in Latvia;
- Provide a better insight to the allocation of public procurement contracts, because publicly available information to a large extent disregards the analysis on a firm-level;
- Show the possible inefficiency and overspending in public sector by awarding contracts to politically connected firms;
- Provide a contribution to the existing academic knowledge about political economy processes in Latvia.

3   Public Procurement in Latvia

3.1   Description of the Public Procurement System

Despite the harmonization of legislative acts on the EU level, each country retains significant autonomy in organizing public procurement, but it is required to submit information about procurement to the "Official Journal of the European Union" (Law about procurement for state and municipal needs, 2004). According to the law (Law about procurement for state and municipal needs, 2004) there are 5 different procurement procedures in Latvia: closed-contest, open-contest, price-survey, negotiation procedure and design contest. In this paper it is referred to *call for procurement* if government authority has decided to buy something, and to *contract* as the part of each call for procurement that has been obtained by winners (thus one call for procurement can be divided into several contracts).

In *price-survey* public authority is required only to ask 3 companies (which according to the law are *"undoubtedly qualified and reliable")* about the price quote and then make final decision, however it is applicable only for procurement below 10 thousands LVL.

For procurement above this level *(for* detailed legal limits on sum for procedure selection, refer to appendix A), the most common procedure is *open contest*, where informative invitation is published in the *Procurement Monitoring Bureau* (henceforth: PMB) website and all applicants are free to apply. The general procedure for procurement in open contest is as follows: the applicants will submit price quotes in sealed envelopes, which will be opened at the presence of all applicants. These bids are further evaluated by the procurement commission, which consists of permanent members of the government institution and for large procurement additional independent experts are invited.

In *closed contest*, all companies are allowed to express interest in participation (by sending a formal request), but only several companies will be selected by the procurement commission for a further evaluation and will be asked to submit offers.

In *negotiation procedure* procurement commission selects only three companies and negotiates about the price. This procedure is allowed only in specific cases, when there is need to quickly organize procurement (for example: urgent crisis resolution, need to complement existing devices or no applicants in the previously organized open contest procedure). As opposed to all other procedures it is allowed to communicate also in verbal form with the applicant and it is allowed to apply this procedure for all procurement sums.

Design contests are used to buy construction plans. However this procedure is rarely used and there is insufficient legal regulation.

Procurement law also provides various situations for not using the law (further referred as *exceptions*) in cases, when it is hard to see the rationale (e.g. organizing sports or culture events). Furthermore in such cases there are no clear guidelines how public officials should operate, allowing them to decide thereby increasing corruption risk.

3.2   *Corruption Risks and Their Examples in Procurement*

There is also substantial mass media coverage about possible corruption and inefficient spending in the public procurement and V.Kalnozols, who has been both an entrepreneur in construction business and politician in Riga city council, in his interview notes that in public procurement "there is 5-15% of mark-up associated with various bribery" (Iljinska, 2009). Despite the developed legislation, A.Petrovska (2008) notes that the process for creating technical specifications has no supervision and quite often it is done by the same official, who performs formal evaluation. It increases corruption risk, which could be reduced if detailed procedures are established for the development of technical specifications and regulations how government authority identifies the need to buy something. Such risks associated with the procurement process as well as insufficient legal enforcement in Latvia, could allow politically connected companies to more easily exert their influence and get more procurement contracts (both in volume and profitability). According to D.Kurpniece (personal communication, February 6, 2009), who is Public Relations and Educational Division Head in Corruption Fighting and Prevention Bureau, there are many different corruption risks in the procurement process and the ways how corruption can take place varies significantly across all cases. One of the most obvious examples of such action is a blatant abuse of the legislation, where public official splits the sum in order to avoid specific procedure; use exceptions provided by the law or opens sealed envelopes before the official date. Another very common element is 'biasing the technical specifications' (further referred as: *rigged call*). Public official in such cases is consulting with allegedly winning enterprise and includes very subjective requirements (for example, company with good image or company with a special security certificate, which is issued only to two firms by the same authority) into technical specification. Another way is to 'accidentally' forget extremely important detail so 'winners' are able to submit very low price, but charge very high price for the extra work later. According to D.Kurpniece (personal communication, February 6, 2009) public officials are very 'creative' in creating such specifications, which might act as a

potentially very effective deterrent, because often the costs for submitting a proposal can be quite high for small enterprises.

The exceptions from the law, negotiation procedure and price survey can be considered the least transparent procedures, because they allow contracting authority to allocate winner more easily (in price survey – 'undoubtedly qualified'; negotiation procedure – can be made after very complex open contest; but exceptions – allow not applying the law). Nevertheless as revealed by D.Kurpniece (personal communication, February 6, 2009) it is very difficult to discover such corruptive cases, because they are very different from each other. Hence, while the law on book might be sufficient it significantly lacks proper enforcement both by elected officials, public servants, broader society and police.

4   Methodology

In this section of the paper methodology is presented, hypotheses are stated and econometric models used to test them are described. For each research sub question analysis will proceed on separate samples. The first sub question uses the sample of politically connected firms (which have contributed in 2002 election cycle and obtained procurement in 2002 or 2003, to capture the change in the procurement value). Second sub question is addressed by using sample of all politically connected and unconnected firms, which obtained public procurement during 2002 – 2005.

4.1   Political Connections in the Election Cycle of 2002

For the first sub question, the election cycle of 2002 (01.01.2002 – 01.10.2002), provides a unique quasi natural experiment. Opposed to the polls prediction for both parties (SKDS, 2003), one of the oldest Latvian parties (Latvian Way) did not get elected by falling just 0.1% short of the required 5% margin, while the newly founded Latvian First Party did get elected. Dombrovsky (2008) showed that firms connected to Latvian Way experienced decrease in the performance (as proxied by the growth in sales) and firms connected to Latvian First Party experienced increase in performance in the year following elections of 2002. One of the aims of this paper was to investigate whether the increase in firms' performance can be attributed to the received public procurement contracts. Therefore it would be natural to use regression analysis to estimate, whether the campaign contributions made in 2002 to one of the previously mentioned parties, explain the change in the received procurement contracts in 2002 or 2003. However, after preliminary inspection of the data it was obtained that there are only 41 firms, which have both donated to political parties during

2002 election cycle and have got public procurement contracts in the following year. Out of these 41 firms only nine firms have donated to Latvian Way and only two firms to Latvian First Party. Thus it is not possible to perform the regression analysis on this sample and only descriptive analysis on firm level and procurement level is provided.

On the firm level for the first sample of 41 firms, total assets and sales of the firms are compared to the sample of the firms investigated by Dombrovsky (2008) in order to evaluate whether these firms are not outliers and the conclusions made by Dombrovsky (2008) are applicable to this sample. Secondly procurement as a share of total sales is analyzed to assess, how much of the performance (as proxied by the sales of the firm) can be attributed to procurement contracts. Finally it is investigated to which political parties firms are donating and whether after this donation in the following year there is an increase in received public procurement contracts as compared to the previous year.

On the second (procurement) level following variables characterizing calls for procurement and contracts are examined: number of applicants, procedure used in the respective call for procurement, the share of winning of politically connected firms. The rationale for the analysis of each variable is provided further. Due to different transparency levels across procedures, the analysis of the procedures used in the calls for procurement shows whether politically connected firms are participating more in the less transparent procedures. The analysis of the number of applicants provides insight whether there is smaller number of applicants in the calls where these 41 firms have participated. The share of winning of the politically connected companies will help to assess, in the cases when both types of the companies (politically connected and politically not connected) have received public procurement; how the value of the call for procurement is divided among politically connected and politically unconnected firms.

4.2   *Procurement Winners in the Time Period 2002-2005*

After examining the 41 firms, in order to answer second research sub question, further analysis is applied to the second sample of all procurement winners (both connected and unconnected). Due to larger sample size it is possible to examine both procurement level analysis (which is also done for the first sub sample) and regression analysis. In this sample firm is considered to be politically connected starting from the year of donation till the end of the sample period (i.e. if firm has made a contribution in 2003 it is considered to be politically connected in 2003, 2004 and 2005). The definition of the political connectedness is purposely narrowed only to the ex post of the donation event in order to have immediate

and strong effect (avoid cases when firm received procurement contract in 2002 but started to donate only in 2005, which is highly unlikely to be result of donation).

Procurement level analysis for the second sample will include following variables: distribution of procedures (to assess whether politically connected companies are obtaining more procurement in less transparent procedures) and share of winning (to assess how much average politically connected company is expected to receive, when compared with average unconnected company in calls where both types of companies are present). In addition, during interviews with representative from Corruption Combating and Prevention Bureau (personal communication, February 6, 2009), it was revealed that often public officials are trying to split the call for procurement into several parts. This is done in order to avoid the use of more transparent procedures. Therefore the frequency analysis of sums is done in order to assess, whether there are increases before the change to more transparent procedure and whether there are some other abnormal patterns.

On the next stage for the second sample regression analysis is performed. This analysis is done to test the hypothesis that in calls for procurement, which were ex post won only by politically connected firms there should be ex ante smaller number of applicants as compared to other cases. The definition of connected call is narrowed to only 100% winning of it by the politically connected firm. This hypothesis is supported by recent surveys (LETA, 2009) that given high application costs, companies are unlikely to apply for possibly rigged calls. Alternative possibility would be to directly examine the relationship between 'bias' of specification and the differences in the number of applicants associated with the political connectedness. The variable, describing the 'bias' of the technical specification is not available; therefore the number of applicants in each particular call is used as a proxy. In regression analysis three models are examined and all are estimated by using OLS regressions with robust standard errors. At first the estimation is performed for the whole time period (2002 -2005) and then on a yearly basis to examine the coefficient stability in time. Then the estimation of the models on the procedure basis follows and the sample is divided into several subsamples according to the used procurement procedures and the models are applied to each subsample. In addition, robustness analysis is also performed.

 The regression analysis is performed by applying following model to the sample of the procurement winners:

$$A_i = \alpha + \beta_1 * D_i + \varepsilon_i \tag{1}$$

where A_i is the number of applicants, D_i is the dummy variable taking the value of one if only politically connected firm(s) have won call for procurement, ε_i is the random error. In

this model α is showing the average number of applicants in the "usual" calls for procurement. β provides the information about the difference in the number of applicants between politically connected calls and "usual" calls. It is predicted that β should be negative. The naïve estimation of the model (1) could possibly lead to biased results. The number of applicants and respective level of competition differs significantly across different industries. It is possible to control for these effects by using one dummy variable for each industry. Therefore the industry fixed effect is added (as proxied by CPV code at two digit level, which classifies procurement into groups) and the following model is estimated:

$$A_{ik} = \alpha + \beta * D_{ik} + \mu_k + \varepsilon_{ik} \tag{2}$$

where μ_k is the industry fixed effect. In order to provide more robustness to model overall sum of the call for procurement (S_{ik}) is added to the model (2). This is done to analyze whether the difference in the number of applicants changes with the sum of the call for procurement (as increased sum of contract is more likely to entice more applicants despite the significant costs) and the following model is estimated:

$$A_{ik} = \alpha + \beta_1 * D_{ik} + \mu_k + \beta_2 * S_{ik} + \varepsilon_{ik} \tag{3}$$

In order to estimate the robustness of these results the definition of political connectedness is changed. The firm is considered to be politically connected if it has donated at any moment in the sample period (i.e. if the firm have donated in 2004 it is considered to be politically connected in 2002, 2003, 2004 and 2005). All regression models are estimated one more time on the basis of the new definition.

In addition to the quantitative methods used in this paper, several interviews are conducted with the involved stakeholders. Interview with expert from Corruption Prevention and Fighting Bureau and several anonymous interviews (due to sensitive nature of the topic) are performed with entrepreneurs.

5   Description of the Data

5.1   *Sources of the Data*

For this paper two sources of the data are combined. First data source used is on politically connected firms by Dombrovsky (2008), which directly or indirectly (through their shareholders or board members) have donated to political parties during 2002-2006. Second source is unique newly constructed database about the public procurement winners. In the following sections it is first briefly outlined methodological considerations for Dombrovsky (2008) data creation (for more detailed information, please refer to his paper) and then

explain methodological considerations behind the construction of the dataset about procurement winners (connected and unconnected).

5.1.1 Data on Donor-Type Connected Firms Compilation

The data on politically connected firms is obtained via carefully developed algorithm and very accurately, which matches individual donor to an enterprise, where he is either member of the board or significant shareholder (defined as having at least 10% of shares). Banks and government-owned enterprises are excluded from the sample, because due to their size it is not possible to create control group for them (politically unconnected enterprises, which are similar in terms of size and industry). Non – profit organizations are excluded, because their performance cannot be measured by change in sales. Donations, where less than 500 LVL are donated out of legally allowed maximum of 10 thousands LVL (reduced in June 2002 from 25 thousands LVL) also are excluded from this dataset, due to their insignificant size. This unique firm level database is provided by Lursoft Inc., which is a private firm providing online electronic database on all enterprises in Latvia. It should be noted that data on political donations became publicly available (and it was not know during the 2002 election cycle) only after February 1st 2003 (i.e. 4 months after elections). This fact allows believing that donations coming from business interests were not intentionally concealed (using other people) and makes it possible to identify donating individuals with firms. Thus, the resulting dataset consists of 889 firms, which have contributed 77.6% of the total contributions in 2002 election cycle. The description of the used variables from this dataset is provided in the appendix B.

5.1.2 Data on Procurement Winners Compilation

Due to the fact that the data in the database of PMB is not provided in the needed format and given that the amount of the data is very large (approximately 18 000 public procurement contracts), it was decided to create an automated solution - software, which extracted all needed information from web – forms. The PMB public database, from which information was extracted, was provided in four different web forms. To ensure that software extracted data correctly, 500 randomly selected procurement contracts were manually compared with the PMB database.

 However, this database provides information about all calls for procurement excluding price survey. The information about price survey winners is not fully provided by PMB or any

other government agency. Yet in order to achieve better coverage of the procurement price surveys, which are available from PMB, are included.

During the standardization of the data foreign enterprises (~682 contracts), rural farms (~900 contracts) and private individuals (~1185 contracts) were omitted, because these winners would not appear on the dataset of politically connected firms. The cases in which only total sum of the contract is provided but not matched to the firms (~139 calls) were also omitted, because it would be impossible to match firms with their respective shares of procurement contract.

Extracted data is plagued by several content problems (PMB data per se contains errors or factual inaccuracies and this is not related to the employed extracting procedure). The most frequently encountered problems were: registration number of the enterprise is not correct, the name of the enterprise is not spelled correctly, sum of the contract is stated but not divided among winners thus it is not possible to identify the share of the contract for each particular firm.

To solve previously mentioned issues and to identify enterprises from the PMB database, State Revenue Service (SRS) information system homepage and Lursoft public database were used. Thus in such cases, firms obtained from the PMB database were included in our procurement winner sample, if there were at least two matching and correct information categories (address, name, registration ID) available. Due to sensitivity of this topic, identification based on 2 parameters allows to be more prudent and underestimate rather than overestimate the possible link between political connections and public procurement contracts. The description of the used variables from this dataset is provided in the appendix B.

5.2   *Summary Statistics*

In this section of the paper selected summary statistics are presented. At first the sample of firms, which donated in 2002 election cycle and got the public procurement contracts in 2002 or 2003 is investigated (further referred as a sample of *matched firms*). This is done to see whether sample of matched firms can be compared to those used by Dombrovsky (2008) in terms of size and turnover. Then the selected summary statistics is presented for firms, which obtained public procurement during 2002-2005 (politically connected and un connected) and are further referred as *procurement winners*.

5.2.1   Political Connections in the Election Cycle of 2002

Final dataset consists of 41 matched firms, which have donated in 2002 election cycle and have received public procurement contracts in 2002 or 2003. This comprises 5% of all connected firms (which have donated during 2002 election cycle) investigated by Dombrovsky (2008). As it was previously mentioned, out of these 41 firms only 2 have donated to Latvian First Party and 9 to Latvian Way. This comprises respectively 2% and 5% of the representation of the parties in the sample investigated by Dombrovsky (2008). Further it can be concluded that the majority of the sample have donated to the parties, which were expected to get in the Saeima (for more details refer to appendix C).

Matched firms are compared to all connected firms to ensure that they are similar in terms of assets and turnover and the further analysis can be made. In terms of assets matched firms are larger (mean value of 1576 thousands LVL) in 2002, than all connected firms (mean value of 909 thousands LVL), but this difference is not statistically significant. Similarly sales in 2002 for the matched firms are larger but this difference is not statistically significant. Similar conclusion appears, when the data for the year 2003 is examined, total assets are larger for matched firms (but this is not significant) and sales are larger for matched firms and this difference is significant at 10% level (for more details please refer to the Appendix D). Obtained procurement contracts comprise 16% of the sales in 2002 and 15% in 2003.

These 41 firms are representing 13 out of 17 industries according to NACE classification and the largest number of firms in one industry are 9 (construction).

The average contribution of the matched firm in 2002 election cycle was four thousands LVL, which is almost two times smaller as compared to all connected firms, which donated in 2002 election cycle (eight thousands LVL) and this difference is statistically significant. In total these firms have donated 178 thousands LVL, which contributes 4% of the sum donated to political parties in election cycle of 2002. From this preliminary discussion it can be concluded that firms investigated in our paper, in terms of size, are similar to those investigated in the paper by Dombrovsky (2008) and further descriptive analysis can be done. Due to smaller amount of donation in matched firm sample, one should expect the role of the political connections to be smaller if compared to the all connected firm sample.

5.2.2   Procurement Winners in the Time Period of 2002 – 2005

Dataset on procurement winners consists of 199 politically connected and of 3106 politically unconnected firms. These firms have participated in 9359 unique calls for procurement (for detailed comparison across years see Appendix E), and have won 15540 procurement

contracts. The total procurement value obtained by these firms is equal to 1522 million LVL during 2002-2005, but overall procurement during this period is equal to 2341 million LVL. The difference can be attributed to the facts that several types of winners are excluded and full information about price survey winners is not available. The realized expenses to government were even 17.3% higher than the overall volume, which can be partially explained with the inflationary environment in Latvia and inefficient enforcement of the legislation (for detailed comparison of the overall volume, realized volume and procedure coverage in constructed dataset, please refer to Appendix F).

Politically connected firms have obtained 131.4 million of LVL in the procurement value during 2002 – 2005 (8% of total). On average politically connected firm, has received 211 thousand LVL more in procurement contracts during 2002-2005, yet the sign and magnitude of this effect is not constant across time, with the effect being negative in 2002 (-169 thousand LVL), but positive in all subsequent years (detailed comparison of the values is provided in the Appendix E). It has to be mentioned that previously presented analysis is of the descriptive nature and no causality is established here. To investigate that analysis is not driven by the industry specific factors (such as politically connected firms are operating in industries with larger procurement value); the distribution of calls by industries was analyzed (using CPV code at 1 and 2 digit levels as proxies). The respective differences are below 10%, thus indicating that there is no strong industry bias.

6   Empirical Results

6.1   *Analysis of Political Connections in the Election Cycle of 2002*

As already indicated, due to the limited sample size, it is not possible to run formal regression specifications, thus only descriptive findings on firm level and procurement level are provided for the sample of the matched firms.

The analysis of the procurement contracts on a firm level basis reveals that there are 24 firms, which got the procurement contracts in 2002 (mean 187 thousands LVL), 34 firms which got the procurement contracts in 2003 (mean 415 thousands LVL) and 17 firms which got the procurement contracts in both 2002 and 2003 (means 172 LVL and 629 thousands LVL respectively). Interestingly, that in the matched firm sample there is a strong connection with the New Era party, given that it was running on anti-corruption platform in elections. 11 out

of 24 firms, which got public procurement contracts in 2002, and 11 out of 34 firms in 2003 are connected to it.

In order to analyze whether procurement contracts are the source of the performance for the sample of matched firms, change in sales and change in procurement are examined. 28 firms have positive change in procurement for 2002/2003, but 13 firms have negative change (detailed distribution of the change in the procurement for the firms associated with every party can be found in Appendix G). For the 23 out of 28 firms, which experienced the increase in procurement, there is also increase in sales. 6 out of 13 firms which experienced the decrease in procurement had the decrease in sales. In addition the change in sales and procurement is analyzed with respect to connected party, but no observable patterns are obtained. Similarly, no patterns were observed, when procurement as a share of sales was analyzed.

Previously performed analysis revealed that firms connected to some elected parties have both positive and negative difference in procurement and sales. The same results are applicable for firms connected with not elected parties. Thus connectedness to different parties based on previously examined variables, provide mixed results and no conclusions can be made.

In the following sections the procurement level analysis is performed. At this level the procedure used in the respective call for procurement, the number of applicants and the share of winning of the politically connected firms are investigated. Data on public procurement reveal that for the year 2002 and 2003 politically connected firms won 37 (mean 117 thousands LVL) contracts in 2002 and 92 contracts in 2003 (mean 153 thousands LVL). In 2002 open contest procedure was used in 73% of the cases, negotiation procedure in 22%, but information about remaining 5% is not provided. For 2003 the respective figures are 61%, 35% and 4%. In 2002 on average there were seven applicants for open contest, but for negotiation procedure two. In 2003 the respective figures are nine and two.

For procurement level, it is also analyzed how the call for procurement is divided among politically connected firms and politically unconnected firms. Thus calls with at least one politically unconnected winner are examined. It is obtained that the share of winning of the politically connected firms is equal to 30% in 2002 and 28% in 2003; therefore the share of winning of politically unconnected firms is equal to 70% and 72% in respective years. The respective mean value of obtained procurement contracts for politically connected firms is equal to 180 thousands LVL in 2002 and 102 thousands LVL in 2003. For not politically connected winners obtained procurement means are 576 thousands LVL in 2002 and 360

thousands LVL in 2003. These sums are divided in both years by one politically connected winner. On contrary, there are 4 and 6 politically unconnected winners in 2002 and 2003. Therefore the average politically connected winner has obtained 36 thousands LVL in 2002 and 42 thousands LVL in 2003 more than unconnected winner.

From the results presented in the previous sections, it can be concluded that despite the mixed evidence from firm level analysis, there is an increase in value of procurement obtained by politically connected firms. Procurement level analysis also provides an indication that politically connected firms are participating more in negotiation procedures, which are usually associated with higher corruption risks.

6.2   Analysis of the Procurement Winners in the Time Period of 2002 - 2005

In this section of the thesis more detailed analysis is presented for the sample of all procurement winners. At this stage analysis will be provided on: procedures used in calls for public procurement, number of applicants and share of winning of politically connected companies.

However before it is possible to proceed with the analysis of procurement winners data, it is important to assess the data obtained during all interviews, which revealed the background for further study. During these interviews entrepreneurs indicated that they are able to preliminary assess, whether the call is rigged by examining technical specifications and requirements for application. In such cases they usually avoid applying, because it would be inefficient usage of their resources. However, they also indicated that they would reconsider applying if the procurement value is sufficiently large and there is spare capacity to prepare the project documentation, which is rarely true given the large amount of required documentation. As indicated in anonymous interview by Janis (high level executive of large company in construction business) they will internalize the costs of application and almost always apply even for possibly rigged call. On the other side, Peteris (founder of small company in software development) notes that in such cases they will not submit the application due to large cost and small expected return. They also note that they have had negative experience with applying to such contests and that it is difficult to sue the contracting authority, because of the lengthy legal process.

When the data is analyzed on a call for procurement level it can be concluded that the most predominant procurement procedure in the sample are open contest (70.8%), exceptions (12.7%), negotiation procedure (11.4%), closed contest (0.2%) and price survey (0.1%). Information about remaining 4.8% calls for procurement is not provided by the PMB. More

detailed view about procedures can be found in Appendix H. After analyzing the procedures used in the calls for public procurement it is obtained that there are almost no differences in the procedures used in the cases where politically connected companies win some share of the call and other calls. The differences in prevalence of the procedures appear, when there are no other winners, except politically connected. Negotiation procedures and exceptions are used in 33.6% of these cases and in not connected calls these procedures are used only in 23.1% of cases. Therefore there is an increase of 10.5% for less transparent procedures in politically connected calls, indicating that less transparent procedures are preferred in politically connected calls.

In the following part, statistics about the micro level competition structure will be provided with respect both to unique calls and to total procurement sum in our sample. In 71% of all calls for procurement, there are less than 5 applicants. The respective calls on average have 1.1 winning firms, which divide (on average) 139 thousands LVL procurement value. Such cases account for more than 60% of the total sum in our sample. On the contrary, calls with more or equal to 5 applicants have on average 3.0 winning firms, which divide 223 thousands LVL procurement. Many calls with one applicant (32.5%) and the fact that 'average winning firm' in contests with fewer applicants is expected to receive much larger sum, preliminary indicates that the competition from the entrepreneurs for the government procurements might be significantly larger.

In order to see how the call for procurement is divided among politically connected and politically unconnected firms the analysis is also provided for public procurement contests, where at least one politically unconnected firm is present (387 calls). The average number of politically connected winners is 1.3 (mean 67 thousands LVL) and 5.3 not-connected winners (mean 223 thousands LVL). Thus average politically connected winner is expected to receive 10 thousands LVL more (when correcting for number of winners). It has to be also mentioned here that in 91% of cases (where politically connected company has won some share in the call) politically connected company received 100% of the procurement value.

A further detailed sum analysis revealed that there are usually 'unexpected' frequency increases if it is close to the amount, which is associated with the change to more transparent procurement procedure (for details see Figure 1). Thus it might indicate that the public officials try to avoid buying the goods at the going market price as suggested by D.Kurpniece (personal communication, February 6, 2009). She also revealed that quite often public officials choose extremely expensive items, because they have "the budget to spend", and thus in rigged calls there could be a tendency to agree beforehand on the project bid. The

observation of unexpected frequency increases at 10 thousand LVL level provides empirical support to the assumption that public officials prefer less transparent procedures and is also consistent with the expert in procurement policy planning K.Berzins (personal communication, March 16, 2009) finding, that similar pattern can be observed for public procurement sum allocation during 2007-2008.

Due to lack of price surveys in the overall sample (which requires change to more transparent procedure) and insufficient data on price survey in the overall sample (0.06%), it is hypothesized that some price surveys might be wrongly tagged as open contests by the official data of PMB.
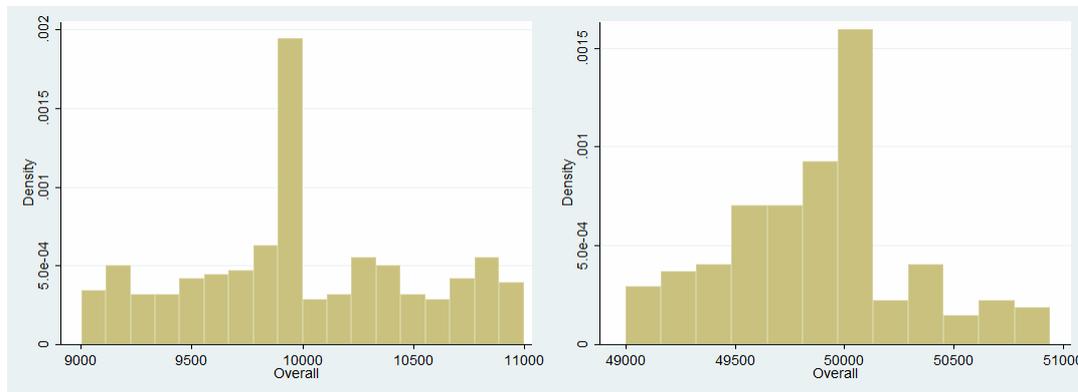
Figure 1. Density distributions of procurement around 10 and 50 thousands LVL
Note. Compiled by authors, using PMB (2008).

6.3   *Regression Analysis*

In this section of the thesis, the relationship between the number of applicants and the political connectedness is investigated for the sample of procurement winners.

As it was mentioned in the methodology part, it is predicted, that there should be smaller number of applicants in the contests, which were won by politically connected firms. The analysis is started by applying the model (1) to the 2002- 2005 time period. Results, presented in the Appendix I, show that the coefficient on the dummy variable is still significant at 1% significance level. Sign of the coefficient is also in line with the stated hypothesis. The magnitude of the coefficient on the dummy variable shows that holding all other things constant there are two applicants less in the calls for procurement, which were won by politically connected firms. In percentage terms this means that holding all other things constant, in calls which were won only by politically connected companies there are 40% applications less as compared to other cases. Further, the model (1) is estimated on a yearly basis. From the results, provided in the Appendix I it can be concluded that the effect

is persistent, but not stable in time, because the difference in the number of applicants (the coefficient on the dummy variable) varies in time from minus one till minus two. There is no clear explanation for this instability, however the strongest effect can be observed in the year following elections of 2002, suggesting that the change in the political landscape affects the competition for public procurement. As a robustness check the same regression for the time period 2002 – 2005 is estimated with the changed independent variable. Dummy variable in this specification takes the value of one if the politically connected firms have obtained more than 70% of the contract value and zero otherwise (previously, politically connected firms obtained 100% of the call for procurement value). Results show that coefficient on the dummy variable is still significant but the magnitude of the coefficient has decreased by 12%. This is in line with the tested prediction, because as the share won by politically connected firms decreases, the number of applicants should increase. This is can be explained by political connectedness effect becoming weaker.

Next the industry fixed effect is added to the regression (as proxied by CPV code at two digit level) and the model (2) is estimated. Results presented in the Appendix J, show that coefficient on the dummy variable is significant at 1% significance level but the magnitude of the effect decreases significantly as compared to the previous model. The model with added industry fixed effects shows that holding all other things constant there is 23% less applicants in the calls won by politically connected firms as compared to other cases. The change of the dependent variable to the share of the call equal to 70% provides similar conclusions as previously. As indicated previously obtained results show that there is some industry effect and thus competition differs across industries. However, the exact magnitude of the industry effect is not clear. After applying the model with industry fixed effect on a yearly basis it is obtained that the coefficient on the dummy variable is almost constant and is not varying much in time (nevertheless, maximum effect is still observed in the year following elections). On the next step of the regression analysis the overall sum of the contract is added to the model specification and model (3) is estimated. Results, presented in the Appendix K, show that the coefficient on the dummy variable is still significant at 1% significance level. The magnitude of the coefficient implies that there are 23% less applicants (in absolute terms one applicant less) in the calls for procurement won by politically connected firms as compared to other cases, controlling for the overall procurement value. The coefficient on the overall sum is of the right sign but it is not significant. It indicates that contrary to qualitative evidence, overall sum of the call is not important for the decision to apply.

Further it is analyzed, whether there is a difference in the number of applicants connected with the specific procedures used in the calls for procurement, therefore the sample is divided into three subsamples according to procedures. The model (2) is applied to each of these subsamples. Results presented in the Appendix L show that in the case of the open contest, the effect is almost the same as in the case of the all sample. In the cases of the negotiation procedure and exceptions the coefficient is smaller, but the percentage decrease in the number of applications is 20% and 18% respectively. Smaller coefficient in absolute terms can be explained by the fewer applicants in these procedures due to their procurement specifics, yet the percentage decrease can be compared to that of open contest (22%). Therefore the effect of fewer applicants in the calls won by politically connected firms applies to all used procedures in the sample of procurement winners.

From the results provided above it can be concluded that politically connected firms are facing less competition as compared to other firms. This result is in line with stated hypothesis that politically connected firms are using their 'status' to hinder competition. Also this shows that politically unconnected firms are not considering sum as an influencing factor to apply for a procurement call.

6.4   Robustness Analysis

As it was mentioned in the methodology, the definition of the political connectedness is narrowed down to the ex post event of the contribution to the political party. In order to provide analysis on the robustness of obtained results, definition of political connections is modified. The firm is considered to be politically connected in 2002 – 2005, if it has donated during the investigated time span. For example, if the firm has donated in 2004, it is considered to be politically connected in 2002 – 2005 (in the previous case it would be connected only in 2004 and 2005). The change of the definition does not change the results for the sample of 41 firms, which donated in the election cycle of 2002 (these firms are connected during investigated time span, according to both definitions). Therefore the robustness analysis is provided only for the sample of politically connected winners during 2002 – 2005.

First of all, by investigating the sample of politically connected winners, it was obtained that on average politically connected firm receives 560 thousands LVL (it is almost two times) more than politically not connected firm. In addition, this result is significant at 10% significance level, when controlling for industry fixed effect at CPV two digit level. When the previous definition was used it was not possible to make such sum per firm comparison,

because there were firms, which became connected during the sample period (for example, were unconnected in 2002, but became connected in 2003). Secondly the effect that politically connected firms are participating more by 8.8% in less transparent procedures (exceptions and negotiation procedures) is also observed as opposed to previous 10.5% increase. When the procurement value obtained by the politically connected firms is analyzed, it is obtained that there are 580 procurement contests in which at least one politically connected and at least one politically not connected firm has participated. The average number of politically connected winners in such cases is 1.5 (with the average procurement 74 thousands LVL) and 4.8 not-connected winners (with the average procurement 190 thousands LVL). Thus average politically connected winner is expected to receive 10 thousands LVL more (when correcting for number of winners).

The robustness analysis, performed for the regression results show that estimated coefficients and previously obtained results are extremely robust and the only observable effect is a slight increase on all coefficients for dummies indicating somewhat larger negative effect. For detailed robustness regression analysis, please refer to Appendix M.

All previously stated evidence suggests that the change of the definition does not decrease the effect of political connections in the allocation of the public procurement contracts and therefore it can be concluded that initial results allow to underestimate the impact of political connections in the public procurement market, what is important bearing in mind the sensitivity of our topic.

7   Discussion of the Results

In this part of the thesis the implications and alternative explanations of the results provided in the previous sections are presented. At first the results for the sample of matched firms are presented, and then the interpretation of the results for the sample of all procurement winners follows.

By analyzing the sample of matched firms (41 firms), it was determined that there is no clear link between the increases of performance (as proxied by the growth of sales) and received public procurement contracts for politically connected firms, which donated in the 2002 election cycle. There could be several reasons for this. First of all, there is a possibility that politically connected firms are enjoying more preferential legislation, which was adopted before the elections of 2002. Therefore they are able to access 'special favours' such as faster and more favourable decision making by the public officials for their businesses (e.g various kinds of licenses and permits). Another example of such 'favours' could include the obtained

assistance from EU pre-accession funds, similar to the situation with EU structural funds later as indicated by Babaicevs and Bobiļevs (2007). Secondly, in the study it was observed that information about some calls was re-classified by PMB as not accessible any more for society as they were before. Thus it might mean that additional methods are used to hide such procurement. Due to the weak legal environment bid rigging with transfers could also be observed. As mentioned by representative from Transparency International Latvia A. Grišāne (personal communication, March 10, 2009) there are indications that firms in the same industry apply for all calls with 'inflated' price bids, thus forcing the government to overpay and later 'divide' later the abnormal profits. Nevertheless, it is still theoretically possible that the source for increased financial performance of Dombrovsky (2008) investigated firms is public procurement. This study does not include information about price survey winners (which could account for up to 25% of total procurement volume during the sample period). As indicated by D.Kurpniece (personal communication, February 6, 2009) this procedure is associated with very high corruption risk due to lack of legal regulation and high monitoring costs.

When investigating the sample of all procurement winners, politically connected firms receive more procurement volume than the unconnected and that the procurement contests won only by politically connected firms are characterized by less transparent procedures and less applicants. There are alternative explanations for these results. First of all, higher obtained procurement volume could be possibly the result of unique expertise possessed by politically connected firms. Therefore public officials are awarding them more contracts on the ground of this expertise. However the robustness analysis showed that the results change only slightly, when controlling for industry fixed effects. Thus it is highly unlikely that in every industry only politically connected firms possess unique expertise, therefore the previously mentioned explanation is more theoretical than empirical. Secondly, data supports that politically connected enterprises are participating more often in less transparent procedures, which have smaller number of applications per se due to the specifics of the purchase. Yet in the summary statistics for the sample of procurement winners, it was obtained that politically connected firms are operating in the same industry as the unconnected ones (as proxied by CPV code at two digit level). Therefore explanation about politically connected firm 'unique expertise' is highly unlikely. Thirdly, Bertrand, Kramarz, Schoar and Thesmar (2006) show that there are also costs associated with political connectedness. In the context of previous results it can be theorized that politically connected firms are undertaking financially unprofitable procurement contracts and therefore there are

less applicants in such cases. The analysis provided in this paper do not include the cost estimates (such information is not publicly available), and thus further research is needed. Yet, this explanation is hard to justify in the light of weak and developing legal system in Latvia and the evidence from entrepreneurs (LETA, 2008).

The lack of strong alternative explanations combined with recent survey of Latvian entrepreneurs (LETA, 2008) indicates that the competition for public procurement might be the most 'unfair', due to various types of connections and bribery. Thus, there are important implications of this result for the society and the overall economy. First of all, many efficient and innovative firms are unable to receive public procurement thus hindering their development and reducing possible spillover effects for competitiveness of the overall economy. Secondly, it implies that political connections are important and firms have incentives to seek them by diverting the resources from development and thus resulting in the second inefficiency. Thirdly it also suggests that the legal system regulations and enforcement in public procurement are not sufficient. This implies that technical specifications could be 'biased' for the benefit of some specific firms. In addition it also could indicate that public officials are able to get rents from their 'power' thus making it difficult to change this system due to the strong incentives for maintaining it.

As a result of this paper, there are three very important questions, which could be investigated further. First and foremost, it is the link between price survey winners and politically connected companies. Second, the effect of costs and decisions of politically connected firms could be quantified. Third, it is the possibility of bid rigging and cartel formation.

8   Conclusions

This paper provides an insight into the procurement allocation process in Latvia and provides answers to two questions about politically connected firms: whether the source of increased performance (as measured by the change in sales) is attributable to received public procurement contracts and whether such firms are likely to face less competition in public procurement.

Despite the fact, that this paper did not provide the expected empirical evidence that the source of the increased performance for the firms investigated by Dombrovsky (2008) is public procurement, such channel still cannot be rejected. Mainly it is due to the lack of the publicly available data about small public procurement procedures (price surveys), which combine up to 25% of total procurement value and could explain the increase in performance. This paper also shows that politically connected firms are obtaining benefits in the process of the call allocation by experiencing at least 20% less competition as compared to unconnected companies. However, this result does not indicate the probability whether politically connected firms are more likely to win, but provides the result when politically connected firm is 'winning' the call it has fewer competitors for the procurement. In addition this paper shows that the possible source of the decreased competition is 'biased' technical specifications. Results also revealed that politically connected firms are more likely to participate in less transparent public procurement procedures. These conclusions are in line with Dombrovsky's (2008) results that political connections add value to the firm, thus giving incentives for firms to seek political influence in one way or another and invest resources into the establishment of such connections. Therefore it can be concluded that in the case of Latvia the investment motive of political connectedness prevails and the consumption motive is just hypothetical.

The estimated results are robust and are likely to underestimate the possible impact of political connections due to several reasons. Firstly, it is the selective and careful inclusion of firms in this sample of procurement winners. Secondly, it is the very narrow definition of political connections (donation to party), which is only a small fraction of possible connection types. Finally, the average donation size to political parties is smaller for the procurement receiving matched firms, as compared to the firms in Dombrovsky (2008) research.

 Therefore to conclude, this paper shows that it cannot be rejected that public procurement is the source of increased performance for connected firms. Connected firms are obtaining

value by having lower competition when applying for public procurement. This has immense implications for the overall economy, because it hinders competition in the market, creates efficiency losses and encourages ineffective investment to obtain political connections. On a final note it can be concluded that political connections matter to public procurement allocation.

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Appendix A: Detailed Comparison of Public Procurement Procedures

Table A1

Public Procurement Procedure Comparison

	Price-Survey	**Negotiation procedure**	**Open-contest**	**Closed-contest**	**Exceptions**
Applicant selection	Procurement commission "arbitrary" selects at least 3 best candidates, which "are undoubtedly qualified"	Procurement commission selects at least 3 candidates	Any applicant submits his price quote (it is publicly announced in IUB homepage)	Any applicant can apply for proposal evaluation (it is publicly announced in a homepage), however commission selects only those, who will proceed further	The buying authority can choose any applicant as it wishes
Procurement commission	Minimum three members must be selected from the buying agency If procurement subject is building and construction, then additional experts from Ministry of Economics list must be invited Each member of commission submits a written opinion and attaches it to the protocol				None
Applicable for procurement volumes:	Goods and services 1000 – 10 000 LVL Building and construction 1000 – 50 000 LVL	Any, if following criterions are met: ●Nobody applied to previously announced contest ●Urgent emergency (subject to Cabinet of Ministers approval) ●Need to complement existing goods (not more than 3 years)	Goods and services more than 10 000 LVL Building and construction more than 50 000 LVL	Goods and services more than 10 000 LVL Building and construction more than 50 000 LVL	● professional education ● culture and sports events ● railway services ● hotel services ●All consulting below 10 000 LVL ●Urgent 'force majore' need below 50 000 LVL ●All procurement below 1000 LVL ●Subject to government secret
Specific procurement corruption risks	The three candidates can be selected from very close circle and there is no mechanism that ensures transparency	Allowed to communicate with applicant verbally No specific guidelines how to negotiate about price		Not clear what criterions are used to select those, who proceed further	No procedure and transparency is applied to these areas

Note. Compiled by the authors, from Law about procurement for state and municipal needs (2004).

Appendix B: Variable Description Used in This Study

Table B1

Description and Source of Variables Used in This Study

Variable	Description	Source
Registration number	Unique registration number identifying company, which has won procurement contract	
CPV code	Classification (*Common Procurement Vocabulary)* for procurement category	
Name of the enterprise	Name of the enterprise with the legal status	
Date	Date, when decision about the winners was made	Procurement monitoring bureau
Procurement sum	Sum of won procurement contract, measured in LVL	
Procedure	Ordinal variable indicating the procedure how procurement contract was allocated	
Reason for rejection	In some occasions there were reasons indicating why company was rejected	
Other information	A string variable containing other information concerning this procurement contract and winners	
Number of applicants	Number of companies, which have submitted bid to this procurement contract	
Political connection	Dummy variable showing, whether firm has donated to a political party	
Sales	Sales in each year for the politically connected firm, measured in LVL	
Assets	Assets in each year for the politically connected firm, measured in LVL	
NACE	Statistical classification of the economic activities in the European Union for firm	Dombrovsky (2008)
Donation date	Date, when it was donated to a political party	
Donation size	Size of donation to a political party, measured in LVL	
Donation party	Political party to which it was donated	

Note. Variables used in this study. Source: compilation done by authors.

Appendix C: Information about Politically Connected Firms

Table C1

Summary Statistics of Donations for Politically Connected Firms

Donations to political party	# of firms	Mean, LVL	SD, LVL	Min , LVL	Max, LVL	Number of seats after election	Change of seats
New Era	13	4982	2649	500	11060	26	26
Latvian Way	9	4182	3 558	580	10 208	0	-17
People's	6	5000	2 966	1 000	10 000	20	-4
Latvian Social Democratic Labour	4	5375	3497	1 500	10 000	0	-14
Latvian Green	3	1000	.	1000	1000	12	+12
Latvian First	2	7400	3394	5 000	9 800	10	+10
For Human Rights in United Latvia	2	1 000	.	1 000	1 000	25	+9
Fatherland and Freedom	1	3000	.	3 000	3 000	7	-10
Equality	1	1 000	.	1 000	1 000	0	0
Total Donations	**41**	**4334**	**3072**	**500**	**11060**		

Note. Table showing average size of donation to each political party of politically connected-firms, which have received public procurement in our sample period.
Source: Compilation by authors', using data from Dombrovsky (2008).

Appendix D: Procurement Receiving Firm Characteristics

Table D1

Public Procurement Receiving Firms' Comparison with Connected Firms

	Year 2002					
	Matched firms		All firms		Difference in means	P value [a]
	Mean	Median	Mean	Median		
Total assets *(thousand LVL)*	1576	402	909	144	667	0.23
Total sales *(thousand LVL)*	2206	886	1244	175	962	0.12
	Year 2003					
Total assets *(thousand LVL)*	1700	436	1 010	165	690	0.22
Total sales *(thousand LVL)*	2592	993	1433	187	1159	0.07

Note. This table shows comparison for firms investigated by Dombrovsky (2008) and firms, which were matched with corresponding procurement contracts (but also being politically connected). Source: Compilation by authors', using data from PMB (2008) and Dombrovsky (2008) data.

[a] T-test with H_0: no difference in assets or sales between matched firms and all connected firms. Small p-value (<0.1) shows that the H_0 is rejected.

Appendix E: Summary of Micro-Level Procurement Information

Table E1

Comparison of Politically Connected and Unconnected Firms

	Call for application level analysis		Contract - level analysis					Firm level analysis			
Year	# of unique calls	Political connectedness[a]	# of contracts	Mean,LVL	SD,LVL	Min, LVL	Max,LVL	# of firms	Sum per firm, LVL	Difference, LVL	P-value[c]
2002	1 309	Connected	125	77 286	132 680	400	1 017 054	51	189 426	-169 875	0.0001
		Not-Connected	1 735	159 666	708 544	0	20 800 000	771	359 301		
2003	1 756	Connected	276	126 794	423 268	5	4 451 753	83	421 629	115 580	0.4138
		Not-Connected	3 089	114 632	1 587 678	7	85 100 000	1 157	306 049		
2004	2 486	Connected	368	65 692	220 882	35	2 596 639	104	232 447	42 415	0.4347
		Not-Connected	3 845	69 538	239 881	2	4 224 009	1 407	190 032		
2005	3 808	Connected	714	87 401	372 034	22	7 387 559	190	328 442	61 060	0.3497
		Not-Connected	5 388	91 658	690 663	11	39 200 000	1 847	267 382		
Total	**9 359**	**Connected**	**1 483**	**88 493**	**337 346**	**5**	**7 387 559**	**199**	**659 470**	**211**	**193**	**- [b]**
		Not-Connected	**14 057**	**99 050**	**902 794**	**0**	**85 100 000**	**3 106**	**448 277**		

Note. This table provides summary statistics of the procurement database in contract-level and firm-level. Source: Compilation by authors', using data from PMB (2008) and Dombrovsky (2008) data.

[a] Firm is classified as connected in the donation year and afterwards.

[b] Due to definition of political connection it is not possible to calculate this statistics (the firm during the sample period can change its status to connected)

[c] T-test with H_0: no difference in sum per firm between politically connected firms and politically not connected firms. Small p-value (<0.1) shows that the H_0 is rejected.

Appendix F: Information about Procurement Volume

Table F1

Detailed Procurement Coverage Size in Sample

	Sample size	Contractual sums [a]	Coverage	Mark-up [a]
2002	285.5	466.1	61.2%	4.7%
2003	389.1	397.9	97.7%	41.3%
2004	291.5	546.5	53.3%	31.0%
2005	555.9	931.0	59.7%	5.2%
TOTAL	**1 522.1**	**2 341.5**	**65.0%**	**17.3**

Note. This table provides summary statistics of the procurement database in contract-level and firm-level. All sums are stated in millions of LVL. Source: Compilation by authors', using data from PMB (2008) and Dombrovsky (2008) data.

[a] Mark-up shows how much was actually paid increase from contractual sums (what was agreed in tender)

Table F2

Detailed Procurement Coverage in Sample Across Different Procedures

	Price survey	Open contest	Closed contest	Negotiation procedure	Exceptions	No information
2002						
Our sample	0	1105	4	158	0	42
Official data	17 405	1066	7	237	-[a]	
2003						
Our sample	0	1368	6	318	1	63
Official data	19 188	1126	17	422	-[a]	
2004						
Our sample	4	1717	5	286	342	132
Official data	21 106	1377	6	322	691	
2005						
Our sample	2	2440	1	311	847	207
Official data	22 328	1990	2	386	-[a]	

Note. Source: Compilation by authors', using data from PMB (2008) and Dombrovsky (2008) data.

[a] Information is not provided by the PMB.

Appendix G: Information about Public Procurement for the Politically Connected Firms

Table G1

Detailed Comparison of Year 2002 and 2003 Politically Connected Firms Procurement

Associated political party	Year 2002				Year 2003				Δ average procurement	Δ seats in the Saeima
	# firms	Average, LVL	Min, LVL	Max, LVL	# firms	Average, LVL	Min, LVL	Max, LVL		
New Era	11	298 381	7 749	1 277 182	11	839 261	17	6 992 156	540 468	+26
For Human Rights in United Latvia	0	0	0	0	2	1 071 533	46 450	2 096 615	1 071 533	+9
People's Party	3	53 159	7 397	126 720	4	92 057	5 471	238 581	38 899	-4
Latvian Green Party	3	124 544	34 220	284 773	3	86 106	46 315	112 164	-38 438	+12
Latvian First Party	0	0	0	0	2	126 358	22 086	230 630	126 358	+10
Fatherland and Freedom	1	60 799	60 799	60 799	1	671 122	671 122	671 122	610 323	-10
Latvian Way [a]	4	117 792	2 980	327 698	7	151 972	5 250	477 882	34 181	-17
Latvian Social Democratic Labour Party [a]	2	100 229	90 010	110 447	3	37 561	5 742	90 347	-62 668	-14
Equality [a]	0	0	0	0	1	2 800	2 800	2 800	2 800	0

Note. Table showing procurement summary statistics for enterprises, which had made donation to political party in 2002 election cycle. Source: Compilation by authors', using data from PMB (2008) and Dombrovsky (2008) data.

[a] Parties, which were not elected into the Saeima.

Appendix H: The Summary Statistics for Distribution of Procedures

Table H1

Summary Statistics for Prevalence of Procedures in Sample

		No info	Open-contest	Price survey	Closed-contest	Negotiation procedure	Exceptions	TOTAL
Benchmark for political connection: 100%	Connected calls	4.0%	62.1%	0.0%	0.2%	13.9%	19.8%	924
	Not-Connected call	4.8%	71.8%	0.1%	0.2%	11.2%	11.9%	8435
Benchmark for political connection: 0%	Connected calls	3.1%	70.2%	0.0%	0.2%	10.8%	15.9%	1311
	Not-Connected calls	5.0%	71.0%	0.1%	0.2%	11.6%	12.2%	8048
Total	Prevalence of procedure	4.7%	70.8%	0.1%	0.2%	11.5%	12.7%	9 359
	Total sum	11.2%	81.8%	0.0%	0.3%	5.3%	1.6%	1 522[a]
	Average sum, LVL	384 545	187 739	44 554	239 593	75 265	20 012	163 031

Note. Table showing summary statistics for prevalence of procedures and respective sums of calls. Source: Compilation by authors', using data from PMB (2008) and Dombrovsky (2008) data.

[a] Million of LVL

Appendix I: Regression Results (Equation 1)

Table I1

Effect on Number of Applications of Political Connections

Dependent variable	Number of applicants					
Time-period	2002-2005	2002	2003	2004	2005	2002-2005
Dummy						70% of contract
Coefficient	**-1.97**	**-1.33**	**-2.09**	**-2.67**	**-1.49**	**-1.74**
Robust SE	*0.17*	*0.29*	*0.27*	*0.54*	*0.18*	*0.18*
T test P value	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Constant						
Coefficient	**4.73**	**4.86**	**5.31**	**5.50**	**3.89**	**4.71**
Robust SE	*0.16*	*0.15*	*0.17*	*0.52*	*0.15*	*0.16*
T test P value	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Industry fixed effect	NO	NO	NO	NO	NO	NO
Number of observations	9241	1268	1693	2473	3807	9241
R-squared	0.0018	0.0045	0.0088	0.0010	0.0034	0.0015

Note. Table showing results of OLS regression. Results reveal that there is decrease in the number of applicants in the calls for procurement, which were won only by politically connected firms. Source: Compilation by authors', using data from PMB (2008) and Dombrovsky (2008) data.

Appendix J: Regression Results (Equation 2)

Table J1

Effect on Number of Applications of Political Connections (Controlling for Industry)

Dependent variable		Number of applicants				
Time-period	2002-2005	2002	2003	2004	2005	2002-2005
Dummy						70% of contract
Coefficient	**-1.08**	**-0.91**	**-1.09**	**-0.80**	**-0.78**	**-0.94**
Robust SE	*0.10*	*0.27*	*0.28*	*0.17*	*0.13*	*0.12*
T test P value	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Constant						
Coefficient	**4.64**	**4.83**	**5.22**	**5.34**	**3.81**	**4.63**
Robust SE	*0.14*	*0.14*	*0.15*	*0.46*	*0.13*	*0.14*
T test P value	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Industry fixed effect	YES	YES	YES	YES	YES	YES
Number of observations	9241	1268	1693	2473	3807	9241
R-squared (Adjusted)	0.0105	0.0615	0.2007	0.0513	0.0808	0.0419

Note. Table showing results of OLS regression. Results reveal that there is decrease in the number of applicants in the calls for procurement, which were won only by politically connected firms after controlling for industry at CPV 2 digit level. Source: Compilation by authors', using data from PMB (2008) and Dombrovsky (2008) data.

Appendix K: Regression Results (Equation 3)

Table K1

Effect on Number of Applications of Political Connections (Controlling for the Value of the Call and Industry)

Dependent variable	Number of applicants					
Time-period	2002-2005	2002	2003	2004	2005	2002-2005
Dummy						70% of contract
Coefficient	**-1.07**	**-0.89**	**-1.09**	**-0.79**	**-0.78**	**-0.94**
Robust SE	*0.10*	*0.27*	*0.28*	*0.17*	*0.13*	*0.12*
T test P value	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Sum						
Coefficient	**$1.44*10^{-7}$**	**$3.11*10^{-7}$**	**$5.49*10^{-8}$**	**$1.07*10^{-6}$**	**$1.72*10^{-7}$**	**$1.45*10^{-7}$**
Robust SE	*$1.20*10^{-7}$*	*$3.08*10^{-7}$*	*$1.02*10^{-7}$*	*$9.78*10^{-7}$*	*$1.47*10^{-7}$*	*$1.20*10^{-7}$*
T test P value	*0.23*	*0.31*	*0.59*	*0.27*	*0.24*	*0.228*
Constant						
Coefficient	**4.62**	**4.77**	**5.20**	**5.21**	**3.78**	**4.61**
Robust SE	*0.14*	*0.14*	*0.15*	*0.48*	*0.13*	*0.14*
T test P value	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Industry fixed effect	YES	YES	YES	YES	YES	YES
Number of observations	9241	1268	1693	2473	3807	9241
R-squared (Adjusted)	0.0420	0.0633	0.2005	0.0511	0.0808	0.0419

Note. The industry fixed effects are captured by CPV two digit level. Source: Compilation by authors', using data from PMB (2008) and Dombrovsky (2008) data.

Appendix L: Regression Results (Procedure Comparison)

Table L1

Effect on Number of Applications of Political Connections (Comparison across Different Procedures)

Dependent variable		Number of applicants		
Procedure		Open Contest	Negotiation Procedure	Exceptions
Time period			2002 -2005	
Dummy				
	Coefficient	**-1.19**	**-0.35**	**-0.40**
	Robust SE	*0.14*	*0.13*	*0.07*
	T test P value	*0.00*	*0.00*	*0.00*
Constant				
	Coefficient	**5.53**	**1.74**	**2.27**
	Robust SE	*0.19*	*0.07*	*0.17*
	T test P value	*0.00*	*0.00*	*0.00*
Industry fixed effect		YES	YES	YES
Number of observations		6629	1073	1190
R-squared (Adjusted)		0.0398	0.2560	0.1204

Note. Effect on number of applications from politically connected calls (controlling industry). The following OLS regressions indicate the decrease in the number of applicants in the calls for procurement, which were won by politically connected firms in all procedures. The industry fixed effects are captured by CPV two digit level. Source: Compilation by authors', using data from PMB (2008) and Dombrovsky (2008) data.

Appendix M: Regression Results (Robustness Analysis)

Table M1

Regression Results Including All Four Model Specifications

Dependent variable	Number of applicants					
Time-period	2002-2005	2002-2005	2002-2005	2002-2005	2002-2005	2002-2005
Dummy						
Coefficient	**-1.88**	**-1.16**	**-1.17**	**-1.27**	**-0.49**	**-0.48**
Robust SE	0.18	0.10	0.11	0.15	0.13	0.11
T test P value	0.000	0.00	0.000	0.000	0.000	0.000
Constant						
Coefficient	**4.81**	**4.70**	**4.68**	**5.60**	**1.81**	**2.29**
Robust SE	0.17	0.14	0.15	0.19	0.08	0.18
T test P value	0.000	0.000	0.000	0.000	0.000	0.000
Sum						
Coefficient			**$1.52*10^{-7}$**			
Robust SE			$1.17*10^{-7}$			
T test P value			0.195			
Industry fixed effect	NO	YES	YES	YES	YES	YES
Number of observations	9241	9241	9241	6629	1073	1190
R-squared	0.0024	0.0423	0.0424	0.0485	0.29354	0.1369
Model/Subsample	**1**	**2**	**3**	Open contest	Negotiation	Exception

Note. Firm is classified as connected if it has donated during 2002-2005. Source: Compilation by authors',
using data from PMB (2008) and Dombrovsky (2008) data.