

THE VALUE OF POLITICAL CONNECTIONS IN THE POST-TRANSITION PERIOD: EVIDENCE FROM THE CZECH REPUBLIC

Miroslav Palanský*

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Abstract

This paper analyzes a novel data set on all corporate political donations made in a post-transition country, the Czech Republic, between 1995 and 2014. Using these donations as a proxy for political connections, I assess the effect of being connected to a political party on the financial performance of the connected firms. In line with the theoretical predictions, I find that firms successfully use political connections to gain advantage over their non-connected peers. The results show that connected firms perform significantly better following the establishment of a connection, and that the effect is stronger for firms that work closely with the public sector. Furthermore, I present evidence that donations are not likely to represent actual measures of the level of connectedness, but rather an indicator of a connection itself, pointing to non-official channels of reciprocal relationships between business and politics, a result that is in line with the public perception of the post-transition era. I then develop a dynamic approach to matching connected firms with their non-connected but otherwise similar peers and conservatively estimate the effect of political connections on the connected firms' profitability at around 20 to 30 % higher than for the non-connected firms. I also find that non-connected firms that receive public money perform similarly to connected firms, again pointing to other sources of connections, such as personal ties, playing a significant role during this period.

JEL Classifications D72, H7, D22

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1 Introduction

Corporate political connections and their effects have recently become a widely discussed topic in both academia and media. From personal ties (friendships, relationships etc.)

*Institute of Economic Studies, Charles University. E-mail: miroslav.palansky@gmail.com.

to more 'economic' links, such as campaign contributions or the provision of discounted services, connections between firms and politicians imply increased risks of conflicts of interest, corruption, rent-seeking and discriminating political favors for the connected firms. Confirming this notion, some recent empirical literature has shown that firms that are somehow connected to political parties may enjoy significant benefits as compared to non-connected firms. These benefits may take on diverse shapes: from rather indirect channels, such as legislation skewed in favor of the connected firms, to more direct ones, such as influencing the outcomes of public procurement auctions. In this paper, I focus on one important type of political connections—direct corporate donations to political parties—and examine whether connected firms have performed better than non-connected firms during the post-transition period in the Czech Republic. I thus address fundamental policy questions such as: Do political connections ultimately lead to higher profits of connected firms as compared to the non-connected ones? Is the effect different for firms that work closely with the public sector? How important are connections between business and politics in a post-transition setting?

I develop several groups of empirical hypotheses to test the effects of political connections on firm performance. The first one is built around the notion that firms that donate to political parties have significantly better performance than other, non-connected firms following the establishment of the connection. In line with the previous literature, I find this effect to be significant in a fairly robust way. In the second part of the empirical analysis, I hypothesize that the more a firm donates to political parties, the better its performance within the group of donating firms, but I do not find a significant relationship between the monetary amount donated and the donating firm's performance. This suggests that corporate political donations shall rather be thought of as merely an indicator of closeness to the politicians rather than an actual measure of the level of political connectedness. Next, I distinguish whether the donation was made to the party in power (meaning being a part of the governing coalition at the national level) or to another party. This allows for a third group of hypotheses of whether donations to the parties present in the government at the time of the donation have a higher effect on economic performance of firms than donations to other parties. Perhaps somewhat surprisingly, I find that donating to the party present in the government is on average associated with lower financial performance, a result which points to the importance of lower-than-national levels of government, especially in public procurement and government grants, to which my results point as an important channel through which the advantage of the connected firms is obtained.

Furthermore, building on an approach common in the previous literature and extending it to fit the unbalanced panel nature of the data, I develop a dynamic matching procedure to pair connected firms with their non-connected but otherwise similar peers based on a number of firm-, industry- and time-specific characteristics. I find that connected firms perform significantly better, with conservative estimates of a difference of 20-30%. However, this effect diminishes in case we compare the connected firms with

non-connected firms that receive public procurement or grants. The results thus confirm the previous findings in that the connected firms seem to be able to exploit their connections successfully for own profit, nevertheless, firms closely tied with the public sector in other ways may also enjoy benefits as compared to other firms. I discuss these results in detail and provide an insight on the mechanisms of such benefits.

The remainder of this paper proceeds as follows. Section 2 summarizes the results of previous literature on the role of corporate political connections, with a particular focus on the scarce research on these effects during a transition or a post-transition period. In Section 3, I describe the empirical methodology used to examine the effects of these donations on firm performance in the Czech Republic and formulate specific hypotheses that are tested to find evidence for these effects. In Section 4, I present the used data sources—primarily, a novel, extended data set on political donations made in the Czech Republic between 1995 and 2014 and data on firm performance covering the same time period. Section 5 summarizes the results of the analysis and describes the performed robustness checks. Finally, in Section 6, I sum up my main results and discuss their implications.

2 Literature Review

Numerous studies in the recent past have suggested that firms connected to politicians seem to perform better than non-connected firms in various areas. Khwaja and Mian (2005) showed that Pakistani firms associated with politicians enjoy better access to credit; De Figueiredo and Edwards (2007) found significant influence of private money on regulatory outcomes in the US telecommunications industry; Goldman et al. (2013) found a significant positive effect of political connections of American S&P 500 firms on the allocation of public funds through procurement spending; similar results were obtained by Auriol et al. (2016), who focused on public procurement contracts in Paraguay; Claessens et al. (2008) successfully unveiled that connected firms substantially increased their bank leverage as compared to a non-connected control group after the 1998 and 2002 elections in Brazil; Cingano and Pinotti (2013) showed that in Italy, connected firms enjoy an increase in domestic sales following the establishment of the connection, pointing to potentially influenced outcomes of public procurement auctions. In Malaysia, Adhikari et al. (2006) showed that firms with political connections pay tax at significantly lower effective rates than other firms; Duchin and Sosyura (2012) showed that politically connected firms in the US are more likely to receive Troubled Asset Relief Program funds.

But do connections actually help firms make more profit than non-connected firms? Building on the theoretical framework outlined by Krueger (1974), Shleifer and Vishny (1994), Banerjee (1997), Acemoglu and Verdier (2000) and others, some researchers have used various case studies to show that connected firms in fact do perform better following the establishment of the connection as compared to non-connected firms. Moreover, negative effects of terminated or weakened connections on the performance of connected

firms have been observed as well. A seminal study by Fisman (2001), for example, showed that firms connected to Indonesian then-president Suharto experienced a significant drop in stock value following news about his worsening health. Cooper et al. (2010), Goldman et al. (2009) or Johnson and Mitton (2003) have all provided supporting evidence for the notion that political connections help add value to firms in terms of increased stock market value.

Data on stock market returns are easily available in many settings, even in some, at first sight, surprising ones. Ferguson and Voth (2008) examined the value of personal connections between firm officials and politicians established prior to the rise of the Nazi movement in the 1930's in Germany. Using official data published by the Berlin stock exchange, they estimated the effect of being connected to Hitler's NSDAP at between 5 to 8 % of the stock price. Francis et al. (2009) showed that in China, among firms that are in the process of going public, the connected ones reach higher offering prices, achieve less underpricing and lower fixed costs. Wu et al. (2012) presented the results of their analysis of Chinese connected firms as twofold: the connected firms enjoy significant tax benefits; and this may be one of the channels through which they reach better performance on the stock markets as compared to their non-connected peers.

Amore and Bennedsen (2013) found that even in a low-corruption environment such as Denmark, political connections boost firms' operating returns, and more so at local governmental levels. Moreover, connected firms that operate in sectors closely tied to the public sector perform even better, pointing to the findings of previous research focused on public procurement as one of the channels through which politicians may pay firms back for financial support. Li et al. (2008) found that the affiliation of Chinese firms with the Communist Party enhances the firms' financial performance. In some settings, however, the results are mixed or it is not clear whether political connections help firms perform better. Fan et al. (2007), for example, found that connected firms in China underperform the non-connected ones by almost 18 % as measured by the three-year post-IPO stock returns; the results of Aggarwal et al. (2012) suggested a negative relationship between corporate donations and stock returns in the United States. In general, the theory and some empirical results suggest that political connections are more likely to play a role in countries with weaker institutions (Faccio, 2006). Unlike most previous studies that focus on stock market returns as a measure of overall firm performance, in this paper I consider firm performance indicators based on financial profitability ratios as reported by individual firms rather than the largely perception-driven stock market returns. While accounting measures are far from being superior in capturing firm performance as compared to other, multidimensional measures, the choice of these firm performance indicators arises as a consequence of using all registered firms regardless of their ownership structure and legal status.

The other side of the coin to an analysis of this kind is the definition of political connections. Mainly due to unavailability of reliable data, the empirical literature defines political connections in different ways. The pioneering work by Faccio (2006) was the first

rigorous international study to focus on a large scale on personal ties between politicians and firms. Specifically, she identified a firm as connected if one of the company's large shareholders or top officers is a member of parliament, a minister, the head of state or a close relative of a top official. The results of her study showed that a firm's stock prices tend to increase significantly after a businessperson from the firm enters politics. Since then, numerous researchers tried to support these results using data on personal ties between politicians and firms in individual countries (Khwaja and Mian, 2005, Johnson and Mitton, 2003, Niessen and Ruenzi, 2010, Goldman et al., 2013, Kostovetsky, 2015).

Nevertheless, since it is impossible to correctly identify all relationships that politicians and firms establish over time, it is likely that variables constructed by using only politicians themselves or even including close relatives in fact underestimate the extent to which firms are connected to politics. Moreover, it is often difficult to obtain reliable personal information about politicians and firm officials (such as unique personal identifiers) to match them. Amore and Bennedsen (2013) overcome this issue by using official government data on identification numbers of whole families, however, obtaining such data in other countries is often impossible due to personal data protection laws. We are thus left with using available sources to construct proxies for connections.

One of the most commonly used proxies are campaign contributions and political donations to candidates or parties. Researchers who used proxies based on financial support to politicians include De Figueiredo and Edwards (2007), who used panel data on campaign contributions to politicians across US states; similarly, a number of studies, including (Snyder, 1990, Ansolabehere et al., 2004, Jayachandran, 2006, Cooper et al., 2010) or (Witko, 2011) focused on firm-level contributions to the US political campaigns. Claessens et al. (2008) constructed a novel data set of firm- and candidate-level campaign contributions in Brazil; the results reached by Hersch et al. (2008) suggest that firms view donations as a short-term investment, which supports the relevance of campaign contributions as a proxy for political connections.

There are two main advantages of using donations to political parties or candidates as indicators of being politically connected. First, they carry a time stamp, which enables us to focus only on effects that are pronounced around or after the establishment of such connections. Moreover, some firms may become connected to different parties over time (and more parties at the same time, with overlapping intervals). However, we shall stay aware that the connection may have well been established much sooner than the donation was made, and thus must treat the time stamp with caution. Second, as opposed to personal ties which can only serve as binary variables, using the actual value of donations enables capturing the economic importance of the connection. Once we control for firm-specific characteristics that may endogenously influence the amount of donations, we can estimate the average effect of an additional amount of donated money. On the other hand, a potential drawback of using declared political donations as a proxy for political connections is that at least in the Czech Republic, we observe relatively voluminous anecdotal evidence of financial support to political parties which was not officially declared in the

parties' annual reports and the actual connectedness thus may potentially be underestimated using this approach. Moreover, I do not consider other types of connections, which further strengthens the possibility of underestimation of the actual level of connectedness of Czech firms in this analysis.

The lack of reliable and voluminous data is a typical setback to the study of political connections. In this paper, I use a novel panel data set covering all political donations made in the Czech Republic between 1995 and 2014 as well as the best available data on economic performance of all registered firms in that time period.¹ The data thus covers the post-transition period following the establishment of market capitalism. According to the theoretical framework set by Rajan and Zingales (1995), economies in the early stages of capitalism are prone to be more relationship-based rather than market-based. As the economy develops, the role of connections is likely to decrease. This notion is supported by multiple studies focusing on empirical data in various stages of market-based capitalism (Adhikari et al. (2006), Faccio et al. (2006), Li et al. (2008)). The nature of my data set and the political background of the Czech Republic allows for a thorough analysis of the value of connections during the early stages of a capitalist economy, which, to my knowledge, has not been done before.

The Czech Republic is an appealing case study for several reasons. First, as described above and in more detail in Section 4, the availability of data is exceptional in both its volume and the covered time period. While most studies in this area focus on publicly listed firms, which raises concerns about self-selection, I draw on the universe of all registered firms in the Czech Republic. To the extent that the choice of corporate form (public vs. private) and the decision to compete for government contracts or favorable legislation are correlated, studies that exclude private companies from the analysis are likely biased. The data set on political donations² is exceptionally complete as well—political parties are obliged by law to disclose all received donations. A small caveat, as discussed above, is that some donations might not be declared in the official records. Second, the Czech Republic did not limit the amount of money donors may donate to political parties, and parties did not face any spending limits during the observed time period, which widens the potential for investment-motivated political donations. Third, taking into account various studies, surveys and individual cases presented in the media which suggest that corruption and rent-seeking is a relatively widespread phenomenon in the Czech Republic, the value of political connections is likely to be higher than in other countries (Lízal and Kočenda, 2001, Faccio, 2006, OECD, 2013).

¹While being the best available data on firm performance, the Magnus data are far from perfect. Indeed, as discussed in Section 3, the many missing observations prevent a fixed-effects model, leaving us with the dynamic matching, a second-best approach in this respect.

²For a comprehensive review of political financing in the Czech Republic, see for example the works of Šimral (2015) and Skuhrovec et al. (2015).

3 Methodology

In this section, I discuss the hypotheses tested in order to assess the effects of political connections on firm performance and the methodology used to test these. My identification strategy relies mainly on within-firm variation in performance, controlling for size of the firms, location, industry sector and other firm-specific characteristics. I first develop a cross-sectional model which aims to compare the performance of connected firms following the establishment of a connection with firms that are not connected. Second, I formulate models that distinguish between donating to the party present in the government at the time of the donation and donating to other parties. Third, I present a novel dynamic approach to matching connected firms with their similar, non-connected peers to account for sector-specific characteristics as well as time-varying conditions within the individual sectors. At the end of this section, I describe my approach to tackle the possible endogeneity of corporate donations.

3.1 Pooled Model

In my first model, I consider the universe of all firms in the Czech Republic and their reported financial results between 1993 and 2014. I hypothesize that on average, firms that are connected to political parties through donations perform significantly better than other, non-connected firms following the establishment of the connection. To test this hypothesis, I use cross-sectional data on firm performance and consider a firm connected in the year in which the donation was made and in two subsequent years. This approach follows from the notion that firms may view political campaign contributions as a form of short-term investment, as outlined by Hersch et al. (2008).

The reason why I build this approach around multiple financial years is that firms may be able to exploit their connections in different ways which vary in time that they take to project in the firms' financial reports (Acemoglu and Verdier, 2000). With the aim to capture these effects, I construct average measures of firm performance (ROE, ROA) over three consecutive years following the donation (including the year during which the donation was made). As an example, let us suppose that a political donation made during 2010 is paid off by an influenced public procurement contract signed in 2011 and finished in 2012. Then, the full effect of the donation pronounced through the added profit from the public procurement contract is not recorded in the financial result of the firm until the end of the financial year 2012.

To construct the averages, I apply Stata's `tssmooth ma` procedure for both firm performance variables while assigning equal weights to observations at time t , $t + 1$ and $t + 2$. This technique automatically disregards missing observations (not only in the inner part of the data set, but also on its edges defined by the boundaries of the examined time period, existence of firms and availability of data for each firm). Therefore, some data points, e.g. for years 2013 and 2014, are constructed as average values over two years and absolute values for one year, respectively.

Another issue to discuss here is whether to account for donations made to parties that were not in power during the year in which the donation was made. In this initial model, I do not differentiate between connections to parties in power and those not in power.³ The purpose is to first treat donations only as an indicator of closeness of the firm to politics. If a firm donates money to a political party, it is hypothesized to thereby express interest in playing a role in politics, possibly for own profit. In Section 3.2, I formulate models that differentiate between donations to individual parties.

My first model thus looks as follows:

$$Y_{Avg(t->t+2)} = \beta_1 * Y_{t-1} + \beta_2 * DDon_t + \beta_3 * X + \epsilon, \quad (1)$$

where $Y_{Avg(t->t+2)}$ is the average of a firm performance indicator (ROE and ROA) over the years t to $t + 2$; Y_{t-1} is the first lag of the firm performance indicator; Don_t is a dummy variable equal to 1 for firms that donated money to a political party in year t , and 0 otherwise. X is a set of firm-specific control variables. Specifically, we include *PubInd*, a binary variable equal to 1 in case the firm operates in an industry which supplies public procurement of value above the median of all industries, and 0 otherwise (Amore and Bennedsen, 2013); *PubSec*, a binary variable equal to 1 if the firm has supplied at least 1 public procurement contract or has received at least 1 European grant since 2006 (due to unavailability of data from previous years), and 0 otherwise; *LocSize*, a variable constructed by classifying cities in which firms are headquartered into 6 categories by population⁴; and *FirmSize_t*, a variable controlling for the size of the firm at time t , constructed as the natural logarithm of the firm's total assets reported in year t .

As an extension to this model, we replace $DDon_t$ by Don_t , which represents the value of the political donation made in year t :

$$Y_{Avg(t->t+2)} = \beta_1 * Y_{t-1} + \beta_2 * Don_t + \beta_3 * X + \epsilon \quad (2)$$

This allows for the economic importance of the donation to be pronounced in the model, but reduces our sample to only connected firms. We estimate this model to reveal whether donations can be thought of as actual measures of connectedness or only as a proxy variable. A significant positive estimate of β_2 in this model would suggest that higher donations may allow the donating firms to obtain more benefits from the politicians.

A possible drawback of this approach is that we may not be able to control for all firm characteristics which influence their profitability, such as managerial skills or particular market distortions that may significantly help firms succeed or fail. This issue could be partially solved by using a fixed-effect model with a varying intercept for each firm, however, our data set is not balanced and long enough to allow this technique. Furthermore,

³However, as explained in Section 3.4, these considerations are limited by the fact that different parties may be in power on different levels of government at the same time.

⁴Boundaries for the size categories are set at 5, 20, 80 and 200 thousand and 1 million inhabitants. Data on population are obtained from the Ministry of the Interior and are as of January 1, 2014.

this model is not robust to variation in favourability of the overall economic situation over time. In times of economic crises, the value of connection may be lower (as measured by the financial performance of the connected firms).

3.2 Party in Power Pooled Model

In this section, I exploit the importance of connections to political parties which are in power. I base my model on differentiating between donating to parties which are present in the government at the time of the donation and donating to other parties. Only connected firms are thus considered in this model. This approach partially solves the problem of endogeneity of political donations—since we are using firms that are connected through donations to parties which are not in the government as a control group, we overcome the issue of more successful firms being more likely to donate money to political parties. Nevertheless, there remains the issue of these firms being more likely to donate more money than less successful firms. I will deal with the remaining part of the endogeneity problem later.

Therefore, I build the model on the basis of the previous one but include a dummy variable $Power_t$ being equal to 1 when the donation was made to a party which was present in the government in year t ; and 0 otherwise.⁵ I again construct two models, the first one including a dummy variable indicating whether or not firm i has donated to a political party in year t and the second including the actual donated amount:

$$Y_{Avg(t \rightarrow t+2)} = \beta_1 * Y_{t-1} + \beta_2 * DDon_t * Power_t + \beta_3 * X + \epsilon \quad (3)$$

$$Y_{Avg(t \rightarrow t+2)} = \beta_1 * Y_{t-1} + \beta_2 * Don_t * Power_t + \beta_3 * X + \epsilon \quad (4)$$

where $Y_{Avg(t \rightarrow t+2)}$ is the average of a firm performance indicator (ROE, ROA) over the years t to $t + 2$; Y_{t-1} , Don_t , $Power_t$ and X represent the set of variables defined above and in the description of models formulated in Equation 1 and Equation 2.

3.3 Dynamic Matching

The models formulated so far share at least one common disadvantage—they do not account for time-varying effects. Therefore, in those models we compare financial results reported during the economic crisis with the ones achieved in times of economic growth. In this section, I develop an approach to matching politically connected firms to non-connected firms with similar characteristics and then comparing the financial and economic performance of both groups, following (Faccio, 2006, Dombrowsky, 2008, Boubakri et al., 2012b). The innovation of my approach lies in the dynamic character of the matching which allows to mitigate the risks of estimation bias due to variability of the effects

⁵This classification is somewhat tricky, because the composition of the government changes in time. For the purposes of this paper, I classify as a governing party in year t the ones that have been in power at least 6 months of year t .

of business cycles on different types of companies and industries.

Let us define that a firm is politically connected in year t if it donated money to a political party in year $t - 2$, $t - 1$ or t . As explained above, connections may take time to be exploited by firms and projected in their financial results. For each connected firm, I sum the value of all donations made during the three years. Then, I search for similar firms using four criteria. First, I only keep firms that are registered as the same type of a business entity. Second, I drop firms which operate in a different sector based on their two-digit NACE classification. Third, I filter out firms that operate in cities which are different in the size of their population by more than 40 %.⁶ The fourth and last criterion concerns the size of the firm. Following Faccio et al. (2006) or Dombrovsky (2008) I use total assets as a proxy for firm size and filter out firms which differ by more than 40 %. By design of the filter, there may be none or more than one similar firms for each connected firm. In the former case, I disregard the connected firm from the analysis (these are typically very large firms); in the latter, I take an average of the financial performance indicators across all matched non-connected firms. Using this matching procedure, I obtain pairs of connected and similar non-connected firms (or a set of non-connected firms) for each year.

I employ the matching procedure individually for each year. The dynamic nature of the matching has at least two advantages over simple matching used by Dombrovsky (2008) and Faccio et al. (2006). Firstly, it accounts for the fact that firm characteristics, and thereby also their potential to make profit, change significantly over time. For instance, two firms matched in year t may evolve significantly differently and therefore cannot be considered similar in year $t + 10$. Secondly, since I compare paired observations in each year individually, the changing overall economic situation does not distort the results.

In total, there are 4,876 observations for connected firms in the sample. Out of these, 4,477 were matched with at least one similar but non-connected firm. Some firms are identified as connected in multiple years. Counting unique firms only, we have 3,151 connected firms out of which 2,864 were matched. However, not all of these firms have reported their financial results in every year of their existence, which is why in the results, we report the number of observations used in each test.

I formulate the hypothesis tested in this section as follows: Firms that are connected to political parties through donations perform, on average, better than their non-connected but otherwise similar peers. In other words, I test whether there is a significant difference in ROE and ROA for connected and non-connected firms which are similar in terms of type of business entity, industry sector and location in which they operate and their size. To do so, I employ a paired t-test with the null hypothesis being that the means of the financial performance indicators of the two paired samples are equal. The rejection of the null hypothesis would suggest that there is a statistically significant difference in the profitability of donating and non-donating but otherwise similar firms.

⁶Data on population of cities as of January 1, 2014 is obtained from the Czech Statistical Office.

3.4 Endogeneity

An important concern in some of the models developed above is the possible endogeneity of campaign contributions—for example, firms that perform well may be more likely to donate money to politicians that worse-performing firms; some firms may be created primarily for political reasons rather than profit-making. Previous literature has dealt with this issue using several different approaches. Claessens et al. (2008) used a difference-in-differences specification, comparing firms connected to the winning party and those connected to the losing party. A possible drawback of this approach is that different parties may be in power on different levels of government, but connections may be exploited from more government levels simultaneously. I partially solve this issue in the Party-in-Power group of models (Section 3.2), by comparing the performance of firms that are connected to the parties present in the national government at the time with firms connected to other parties. It is important, however, to stay aware of the limitation of this model due to different parties being in power at different levels of government. As documented by Palanský (2014) for the case of the Czech Republic, public procurement is an ample example of a possible way to exploit connections at lower-than-national government levels.

Another approach was taken by Boubakri et al. (2012a), who employed a two-stage regression model to first construct an instrumental variable estimating the probability of political connectedness of firms based on their location, size and other firm-specific characteristics. In the second stage, this variable was used to estimate the effects of political connectedness. There are, however, at least two reasons why this methodology cannot be used in this case study on Czech data. First, the longitudinal character of our data set does not enable the estimation of political connectedness based on firm characteristics, because for some firms, they vary significantly in time. Second, especially for an individual country study, this approach is not likely to resolve the endogeneity issue, since better-performing firms are more likely to be larger in size, operate in relatively more capital-intensive industries, work closely with the public sector and so on.

Alternatively, some researchers use the technique of matching firms identified as connected with firms with similar characteristics and then apply the difference-in-differences approach (Agrawal and Knoeber, 2001, Faccio et al., 2006, Dombrovsky, 2008). In Section 3.3 I take an analogous (but extended in its dynamic character) approach to matching donating firms with similar, non-connected firms, and estimating the value of the connection as the difference between the performance of such matched firms.

4 Data

In this section, I describe the data sources used in the analysis and present some descriptive statistics. I use two main data sets. First, I use data on donations to political parties made by legal persons in the Czech Republic between 1995 and 2014. Second, I use data from a private database called Magnus, which is the most advanced data set on financial

results and other information focused on Czech firms. I merge the data from these two sources and add other information about firms—their operating sector, size, law form, location, public procurement and European funds obtained from the Magnus database, the Business Registry or EconLab’s internal firm database.

4.1 Political donations data

In the Czech Republic, information on the financing of political parties is available to the public in the form of lists attached to the parties’ annual reports. These are, however, only available in the physical form in the Parliamentary library, which makes computational analysis of the data incredibly tedious. EconLab⁷, a Czech NGO, collects this data every year and publishes it online on the website of the project PolitickeFinance.cz⁸, making it available for download and further analysis by other researchers as well as journalists and the general public. The database originally contained data for years 2006-2014. For the purposes of this paper, the database was extended to cover all annual reports of political parties which are available in the Parliamentary library, i.e. the time period 1995-2014. As of March 2016, the database contained 56,696 donations of total value of more than CZK 3,06 billion⁹. A simple summary of the database for parties currently present in the Chamber of Deputies of the Czech Parliament is provided in Table 1.

Table 1: Summary of the database of corporate political donations in the Czech Republic, 1995-2014, parties present in the Chamber of Deputies as of March 2014.

Party	Number of donations	Sum of donations	Total donations per year*
ANO 2011	611	47,748,468	15,916,155.87
ČSSD	914	1,032,348,235	51,617,411.75
KDU-ČSL	826	44,708,752	2,235,437.61
KSČM	93	1,557,351	77,867.57
ODS	6,818	448,874,113	22,443,705.66
TOP 09	486	82,534,317	13,755,719.53
Úsvit	1	30,000	15,000
TOTAL	9749	1,657,801,237	106,061,298

*Sum of donations divided by the number of years in which the party existed.

Source: Author based on data from PolitickeFinance.cz.

Donations vary significantly in value over time. Since the late 1990’s, their average value per year has increased markedly, as reported in Figure 1. I also include a line displaying the value of donations excluding the two largest non-monetary donations made by *Cíl, akciová společnost v Praze*¹⁰ to ČSSD in 2001 and 2003, respectively, because they

⁷<http://www.econlab.cz/>

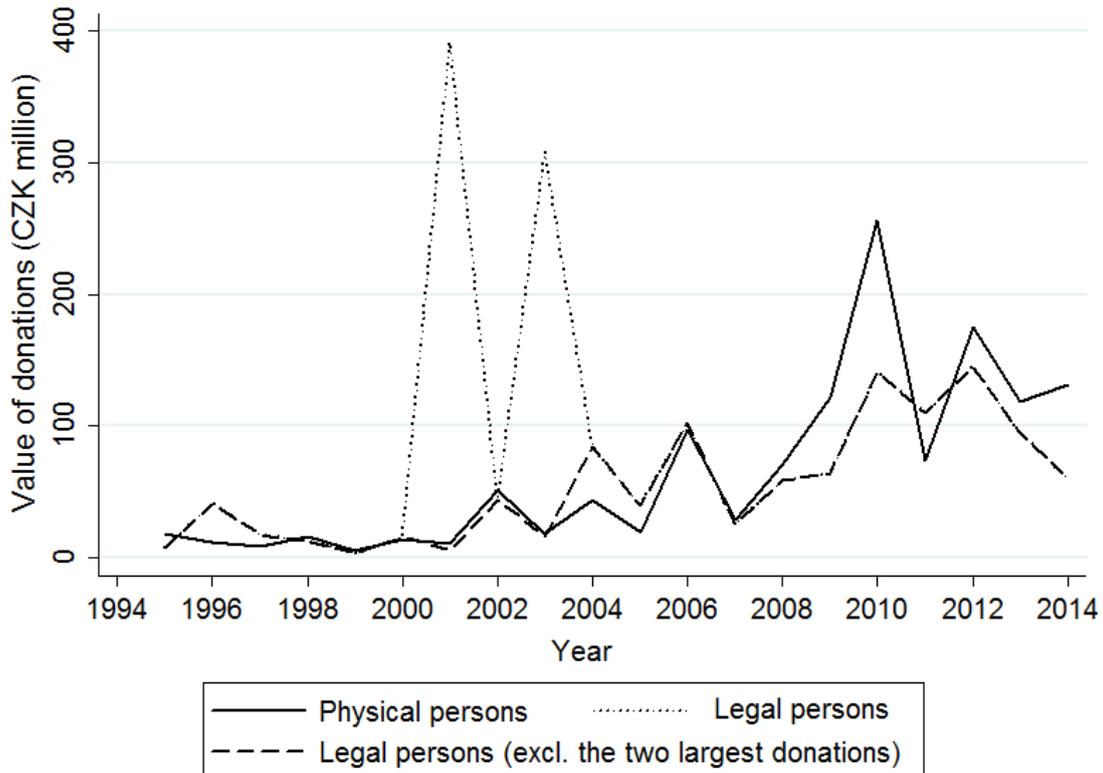
⁸English version available at: <http://www.politickefinance.cz/en>

⁹Approximately 113 million EUR in exchange rates as of March 2016

¹⁰*Cíl, akciová společnost v Praze* is a company owned entirely by ČSSD and its main aim is to print

exceed the next donations in value by more than 15 times.

Figure 1: Value of donations to Czech political parties over time.



Source: Author based on data from PolitickeFinance.cz.

The value of donations from both physical and legal persons has had an increasing trend. In the more recent years, the average total value of donations from physical persons slightly exceeds the value of legal persons' donations. We can clearly observe the peaks in years when major elections take place. The most important elections in the Czech Republic, those to the Chamber of Deputies, took place in 1992, 1996, 1998, 2002, 2006, 2010 and 2013. Two elections (1998 and 2013) were snap elections, in which the peak is not as significant. One larger peak is observed in 2012, which can be explained by the creation of ANO 2011, a party built by and around the current Czech Minister of Finance, Andrej Babiš, which relied markedly on large donations in the first year of its existence.

4.2 Firm performance data

Data on firms' financial performance was obtained from *Bisnode Czech Republic's* private database called Magnus, which is gathered continuously from various sources and in various ways, most notably by hand-collecting and cleaning data from the firms' annual financial reports. The downloaded data set contains all legal persons that have ever

and publish or sell advertisement materials. This company alone donated more than CZK 930 million to ČSSD over the examined time period.

operated in the Czech Republic. Financial data are available from the year 1993 onwards.

In our data set, we included three variables that describe the financial performance of firms: Assets, Equity and Earnings Before Taxes. After appending the individually downloaded files (which were numerous due to Magnus’s export limit of 10 thousand observations per query), I reshaped the data set to fit the definition of panel data, with the panel variable being the unique id of individual firms and the time variable spreading over the maximum of 21 years between 1993 and 2014. I chose to include the above-mentioned variables in the data set because they allow for the creation of the most commonly used indicators of financial performance of firms. Following Li et al. (2008), Amore and Bennedsen (2013) and others, I constructed two measures of firm performance: return on equity (ROE) and return on assets (ROA).

A few alterations to the data on Capital and Assets had to be made. Firstly, negative values of Assets, which were reported likely due to misguided accounting standards, are excluded from the analysis (this step reduces our sample by 0.14 % observations). Secondly, negative values of Capital, which were also most likely reported due to unusual accounting principles, are replaced by the ‘Registered capital’ which represents the reported initial capital of the company at the time of its foundation. This step alters approximately 21.75 % of observations. However, since Capital serves only as a scaling variable in the construction of ROE, the explanatory power of the variable is maintained. Third, since extreme outliers in the data set would cause our estimations to be biased, we winsorized both firm performance indicators. In doing so, we followed two approaches most common in the literature: (i) trimming the 1st and the 99th percentile values (Fuest and Riedel, 2010, Galema et al., 2008) and (ii) dropping observations which fall outside the $(-1, 1)$ interval (Beaver and Ryan, 2000). We present the results for the second winsorization, however, we perform all the estimations using both approaches and reach similar results.

The final data set contains 257,181 firms and 1,486,661 yearly observations, averaging 5.78 years of data per firm. This is caused not only by the fact that many firms have only existed for a few years, but also by other factors. Firms often do not publish their annual reports in the Business Registry even though they are obliged to do so by law. Some documents are also published in low quality which makes their inclusion in the Magnus database impossible.

4.3 Merging the data sets

The donations database contains a total of 7,916 corporate donations made by 5,188 legal persons. This is, however, somewhat misleading, because many political parties include self-employed physical persons in the list of donating legal persons. Merging the two data sets, 5,044 donations made by 3,203 different firms were matched with an id of an existing firm. The remaining, unmatched donors were dropped. I further add information about firms from other sources. Most importantly, I use EconLab’s hand-cleaned internal database of firms and their details, which is compiled from numerous different sources

and also contains information on public procurement and European grants obtained by each firm.

5 Results

This section sums up the results of tests outlined in Section 3. I present the results in three categories. First, I employ the OLS method to estimate pooled models formulated in Section 3.1 using as explanatory variables both a dummy variable for donating firms and the actual value of donations made by each firm and perform a series of tests to check the robustness of the results. Second, I add the effect of donating to a party which is in power at the time of the donation, as described in Section 3.2, in order to clarify whether the value of donations can be thought of as an actual measure of the level of connectedness or rather if we should view the donation as merely a proxy variable indicating closeness of the donating firms to politics. Third, I present the results of paired t-tests comparing the means of firm performance indicators for dynamically matched connected and non-connected firms (Section 3.3) and further divide the analysis for firms that work closely with the public sector and those that do not.

Panels (1) and (2) in Table 2 present the results of our initial pooled model with a dummy variable indicating a connection. Since the sample for this model is very large (reaches more than 850 thousand observations), I report 95 % confidence intervals instead of p-values (Lin et al., 2013, Disdier and Head, 2008). We observe that the fact that a firm is politically connected is associated with higher financial performance, with the lower bound of the confidence interval suggesting over a 1 percentage point difference in ROE and around a 0.33 percentage points difference in ROA. Other factors with positive coefficients are firm size and *PubSec*, a binary variable indicating whether the firm has signed at least one public procurement contract or has received at least one European grant. On the other hand, *PubInd* and *LocSize* show a negative sign pointing to a decrease in firm performance associated with these firm characteristics. Note that the nature of the relationship between *PubInd* and *PubSec* causes these estimates to suggest that operating in a public procurement-intensive industry has a negative effect on firm performance only if the firm has never supplied public procurement contracts nor receives European grants. The sum of these estimates points to a positive effect of cooperating with the public sector in general, results which will be further explored in the subsequent models.

The results of regressions which include the actual value of donations rather than a binary variable indicating a connection are presented in Panels (3) and (4) in Table 2. As the aim is to quantify the effect of donating more money (and not the fact that a firm donates), only donating firms are included in this model. The estimates of the effect of the donation value are not significant for neither of the firm performance indicators. These results suggest that the connections established through donations may be comparable regardless of the actual value of these donations—they are thus more likely to represent

a proxy variable for political connectedness rather than an actual measure of the level of connectedness.

Table 2: Results of the pooled models, OLS.

	(1) ROE	(2) ROA	(3) ROE	(4) ROA
L.ROE	.308*** [.306,.311]	.144*** [.142,.145]	.326*** (.017)	.15*** (8.1e-03)
PubInd	-1.31*** [-1.48,-1.13]	-1.41*** [-1.53,-1.3]	-.444 (1.06)	-1.82** (.593)
PubSec	3.03*** [2.89,3.17]	.981*** [.899,1.06]	2.87*** (.65)	.383 (.344)
LocSize	-.172*** [-.204,-.139]	-.257*** [-.278,-.237]	-.785** (.256)	-.793*** (.133)
FirmSize	.773*** [.754,.792]	.611*** [.597,.626]	-.228 (.195)	.033 (.123)
DDon	1.69*** (.214)	.671*** (.109)		
ln(Don)			-.239 [-.658,.179]	-.018 [-.232,.197]
Constant	-5.62*** [-5.99,-5.24]	-5.65*** [-5.94,-5.37]	17.6*** (4.02)	8.04*** (2.38)
Observations	855606	926944	3773	3956
R^2	0.170	0.106	0.172	0.140

95 % confidence intervals in brackets, robust standard errors in parentheses.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Interestingly, coefficients for the variable *PubInd* (and *PubSec*) switch significance and become lower (higher) when ROA is used as a dependent variable instead of ROE. These results suggest that the fact that a firm operates in a public procurement-intensive industry is associated with higher differences in ROA than ROE. I perform a series of tests to check the robustness of these results. First, I analyze the sensitivity of the model to the exclusion of individual variables. The results are presented in Tables 8 and 9 in Appendix for ROE and ROA, respectively, and suggest that the model is fairly robust in its specification—the inclusion of each additional variable increases the explanatory power of the model while not markedly altering the estimated effects or the significance of other variables. Second, I test whether the effects are different across industries. I divide the pooled model into 5 quintiles based on the volume of public procurement they have provided between 2006 and 2014. In Table 3 I present the results of estimating the model for these 5 groups individually. The effect of donations is especially high for firms operating in procurement-intensive industries, which is in support of the hypothesis tested in previous research that public procurement may be an important channel through

which firms exploit their political connections in the Czech Republic (Palanský, 2014). Estimates of the coefficients for the control variables remain fairly stable across groups, except for *LocSize*, which varies in both the coefficient sign and the level of significance, however, for ROA, a persistent negative and significant effect prevails.

Table 3: Results of the pooled model divided into 5 groups (by percentile) based on the volume of public procurement firms have provided between 2006 and 2014; ROE.

Percentile:	(0 – 20)	(20 – 40)	(40 – 60)	(60 – 80)	(80 – 100)
Dependent var.:	ROE	ROE	ROE	ROE	ROE
L.ROE	.322*** (2.6e-03)	.329*** (2.2e-03)	.295*** (2.5e-03)	.291*** (2.2e-03)	.251*** (5.1e-03)
PubSec	1.29*** (.152)	5.12*** (.163)	2.75*** (.143)	2.55*** (.142)	4.18*** (.242)
LocSize	.182*** (.04)	-.476*** (.031)	.084* (.038)	-.249*** (.031)	.065 (.075)
FirmSize	.51*** (.021)	.639*** (.018)	.86*** (.021)	1.14*** (.019)	.264*** (.04)
DDon	1.56* (.69)	2.23** (.787)	1.82** (.645)	1.01 (.648)	3.24*** (.826)
Constant	-3.91*** (.392)	-4.59*** (.311)	-8.6*** (.367)	-11.3*** (.335)	.06 (.731)
Observations	171787	239979	180068	228786	44670
R^2	0.170	0.185	0.164	0.167	0.119

95 % confidence intervals in brackets, robust standard errors in parentheses.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Our second family of models aims to shed more light on whether connections to parties present in the national government are more important than connections to other parties. To do so, I include in the model a binary variable indicating whether or not the donation was made to a party which was part of the government in the particular year. The results are presented in Table 4 and suggest, somewhat surprisingly, that being connected to the party in power is associated with lower financial performance in the years following the establishment of such connections. A possible explanation for the insignificance of this effect is that different parties are often in power at different levels of government. In the Czech Republic, lower-than-national levels of government administer public procurement of significant value. Therefore, if the previously reached results about public procurement being one of the most likely sources of added value to connected firms are in fact true, these results are far less surprising.

Within our sample of politically connected firms, firm size does not have a significant effect on performance, but size of the city in which the company operates does. This result suggests that connected firms that operate in smaller cities reach, on average, better financial results than those operating in bigger cities. Connections may thus play a bigger role in smaller cities, where they are arguably easier to exploit, not only through public

Table 4: Results of the party-in-power models, OLS.

	(1)	(2)	(3)	(4)
	ROE	ROA	ROE	ROA
L.ROE	.325*** (.017)	.15*** (8.1e-03)	.325*** (.017)	.15*** (8.1e-03)
PubInd	-.368 (1.05)	-1.74** (.59)	-.534 (1.05)	-1.82** (.593)
PubSec	3.1*** (.645)	.467 (.343)	2.83*** (.649)	.365 (.344)
LocSize	-.835*** (.251)	-.789*** (.131)	-.829** (.252)	-.788*** (.131)
FirmSize	-.29 (.19)	.021 (.119)	-.262 (.191)	.036 (.12)
DDon*Power	-4.69*** (.649)	-1.88*** (.347)		
Don*Power			-3.7e-07 (3.3e-07)	-2.8e-07* (1.3e-07)
Constant	18.9*** (3.9)	9.02*** (2.36)	16.1*** (3.87)	7.82*** (2.37)
Observations	3773	3956	3773	3956
R^2	0.183	0.147	0.172	0.141

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

procurement but also through other channels due to potentially lower public control.

In Table 5, I present the results of a paired t-test performed for connected firms and their matched peers (based on the matching procedure described in Section 3.3). They suggest that connected firms reach significantly better results, as measured by both ROE and ROA. Specifically, connected firms (ROEc, ROAc) report returns on equity on average between 3.2 and 5 percentage points higher and returns on assets on average between 1.56 and 2.56 percentage points higher than similar but non-connected firms (ROEnc, ROAnc).

Table 5: Results of a paired t-test of equal means of financial performance indicators for connected and non-connected (but otherwise similar) firms.

Variable	Obs.	Mean	Std. Err.	95% Conf. Interval	t-statistic	p-value	
ROEc	3951	19.323	0.454	18.432	20.214		
ROEnc	3951	15.181	0.201	14.787	15.576		
Difference	3951	4.142	0.472	3.216	5.067	8.775	0
ROAc	4395	7.662	0.247	7.177	8.146		
ROAnc	4395	5.601	0.103	5.400	5.802		
Difference	4395	2.061	0.255	1.561	2.561	8.081	0

I further proceed with the analysis of the differences between the connected and non-connected firms by dividing the non-connected, matched peers into those that do and those that do not work closely with the public sector (measured by *PubSec*, a binary variable equal to 1 if the firm has supplied at least 1 public procurement contract or has received at least 1 European grant since 2006; and 0 otherwise). For the purposes of this paper, I will call such firms 'public firms'. Table 6 shows that the average difference between the profitability of connected firms and the non-connected public firms is not significantly different from 0, while for non-connected, non-public firms, we reject the null hypothesis at the 1 % level of significance. Conservative estimates given by the lower bounds of the 95 % confidence interval point to a difference of over 4 percentage points in returns on equity and around 2 percentage points in returns on assets.

The results from the dynamic matching procedure thus point to similar results reached with the first two groups of models. I find relatively robust evidence for the hypothesis that connected firms outperform, on average, their non-connected peers, however, only in case the non-connected matched firms do not work closely with the public sector. These results suggest that working closely with the public sector may represent a substitute to being connected through political donations, pointing to the limitations of using political donations as a proxy for connections.

I perform one more test to analyze this issue wherein I include only non-public connected firms and compare them with their non-public, non-connected peers. The results, presented in Table 7, show that the significance of the differences persists, which suggests that these are driven by the connectedness itself. Therefore, firms that do not receive public procurement nor European grants may be able to use other channels to exploit their connections. Conservative estimates of the difference amount to around 2.9 percentage

Table 6: Results of a paired t-test of equal means of financial performance indicators for connected and non-connected (but otherwise similar) firms, public vs. non-public firms.

Variable	Obs.	Mean	Std. Err.	95% Conf. Interval	t-statistic	p-value	
ROEc	3393	19.782	0.483	18.835	20.730		
ROEnc, PubSec1	3393	19.825	0.283	19.271	20.379		
Difference	3393	-0.043	0.536	-1.093	1.008	-0.080	0.532
ROEc	3753	19.291	0.470	18.369	20.213		
ROEnc, PubSec0	3753	14.073	0.226	13.630	14.515		
Difference	3753	5.219	0.498	4.243	6.194	10.487	0
ROAc	3801	7.754	0.260	7.244	8.265		
ROAnc, PubSec=1	3801	7.568	0.150	7.274	7.863		
Difference	3801	0.186	0.295	-0.393	0.765	0.630	0.264
ROAc	4196	7.610	0.256	7.107	8.113		
ROAnc, PubSec=0	4196	5.097	0.109	4.884	5.310		
Difference	4196	2.513	0.265	1.993	3.033	9.477	0

Table 7: Results of a paired t-test of equal means of financial performance indicators for connected and non-connected (but otherwise similar) firms, non-public firms only.

Variable	Obs.	Mean	Std. Err.	95% Conf. Interval	t-statistic	p-value	
ROEc, PubSec=0	2047	17.848	0.681	16.513	19.184		
ROEnc, PubSec=0	2047	13.558	0.303	12.964	14.152		
Difference	2047	4.290	0.705	2.908	5.673	6.086	0
ROAc, PubSec=0	2382	7.128	0.391	6.361	7.896		
ROAnc, PubSec=0	2382	4.885	0.146	4.598	5.171		
Difference	2382	2.244	0.394	1.471	3.017	5.692	0

points (22.38 %) for ROE and nearly 1.5 percentage points (32.02 %) for ROA.

6 Conclusion

In this paper, I analyze political connections and their effect on the performance of the connected firms. I identify the connected firms using data on all corporate donations to Czech political parties made between 1995 and 2014. My principal hypothesis is that connected firms on average outperform the non-connected but otherwise similar firms. The motivation behind this hypothesis lies in providing further evidence of the added value that political connections may bring to firms, specifically in the post-transition period when political connections are likely to play a significant role. I focus on the overall effect on profitability rather than individual channels through which the added value may be generated.

The results suggest that for Czech firms, being connected to political parties through donations does pay off. Drawing on the universe of all firms ever registered in the Czech Republic, I conservatively estimate the effect associated with being politically connected at 1.06 percentage points in return on equity and 0.331 percentage points in return on

assets. I do not find a significant effect of the size of the donation itself within the group of connected firms, which suggests that donations are likely to play the role of a proxy for closeness of firms to politicians rather than an actual measure of the level of connectedness. I further argue that the effect of donating is stronger for firms that work in the more public procurement-intensive industries, pointing to public procurement as one of the likely channels through which the investment represented by the donations may yield profit for the connected firms. Moreover, the results generally suggest that firms in smaller cities may be more likely to succeed in exploiting their connections to politicians.

I further examine the value of political connections using a novel, dynamic approach to matching connected and non-connected firms. Based on several firm-level characteristics, I match connected firms with their non-connected peers for each year individually, which allows to capture time-specific effects of the overall economic situation and the changing state of firm characteristics over time. I find that connected firms reach, on average, better results than the non-connected but otherwise similar firms. I conservatively estimate the effect at 3.2 and 1.5 percentage points (21.75 % and 28.9 %) in terms of returns on equity and returns on assets, respectively. I proceed by comparing connected firms with non-connected firms that receive public procurement and European grants (which I call 'public firms') and I do not find significant differences in financial performance of these two groups of firms. However, comparing non-public connected firms and non-public non-connected firms, the results again point to positive effects of being connected, even though slightly weaker.

This paper contributes to the literature on the significance of corporate political connections and the added value they might bring to the connected firms. Using a case study of a newly capitalized country, the Czech Republic in its post-transition period, brings a novelty to this body of research and provides corroboration of theoretical considerations of the palpable importance of personal relationships of businessman and politicians on business outcomes in such settings.

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Appendix

Table 8: Sensitivity analysis, pooled model, ROE.

	(1)	(2)	(3)	(4)	(5)	(6)
	ROE	ROE	ROE	ROE	ROE	ROE
L.ROE	.321*** [.319,.323]	.321*** [.318,.323]	.316*** [.314,.318]	.316*** [.314,.318]	.308*** [.306,.311]	.308*** [.306,.311]
PubInd		-1.53*** [-1.7,-1.35]	-1.59*** [-1.76,-1.42]	-1.5*** [-1.68,-1.33]	-1.31*** [-1.48,-1.13]	-1.31*** [-1.48,-1.13]
PubSec			4.99*** [4.86,5.12]	4.95*** [4.82,5.08]	3.05*** [2.91,3.19]	3.03*** [2.89,3.17]
LocSize				-.221*** [-.254,-.189]	-.173*** [-.205,-.14]	-.172*** [-.204,-.139]
FirmSize					.775*** [.756,.794]	.773*** [.754,.792]
DDon					1.69*** [1.06,2.31]	1.69*** [1.06,2.31]
Constant	4.56*** [4.51,4.61]	5.98*** [5.81,6.14]	5.5*** [5.33,5.67]	6.36*** [6.16,6.57]	-5.64*** [-6.01,-5.26]	-5.62*** [-5.99,-5.24]
Observations	870575	860849	860849	860849	855606	855606
R ²	0.160	0.161	0.165	0.165	0.170	0.170

95 % confidence intervals in brackets. * p < 0.05, ** p < 0.01, *** p < 0.001.

Table 9: Sensitivity analysis, pooled model, ROA.

	(1)	(2)	(3)	(4)	(5)	(6)
	ROA	ROA	ROA	ROA	ROA	ROA
L.ROA	.317*** [.315,.32]	.317*** [.314,.32]	.314*** [.311,.317]	.313*** [.311,.316]	.308*** [.305,.31]	.308*** [.305,.31]
PubInd		-1.42*** [-1.53,-1.3]	-1.44*** [-1.56,-1.33]	-1.35*** [-1.46,-1.23]	-1.28*** [-1.39,-1.16]	-1.28*** [-1.39,-1.16]
PubSec			3.03*** [2.95,3.11]	2.98*** [2.91,3.06]	1.75*** [1.67,1.83]	1.74*** [1.66,1.82]
LocSize				-261*** [-281,-241]	-253*** [-273,-233]	-252*** [-272,-233]
FirmSize					.558*** [.544,.572]	.557*** [.543,.571]
DDon					.973*** [.627,1.32]	.973*** [.627,1.32]
Constant	1.53*** [1.5,1.56]	2.83*** [2.72,2.94]	2.54*** [2.43,2.65]	3.57*** [3.44,3.71]	-5*** [-5.27,-4.73]	-4.99*** [-5.26,-4.72]
Observations	1111563	1100505	1100505	1100505	1100505	1100505
R ²	0.144	0.145	0.148	0.148	0.153	0.153

95 % confidence intervals in brackets. * p < 0.05, ** p < 0.01, *** p < 0.001.