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The Value of Political Connections in the Post-Transition Period: Evidence from the Czech Republic

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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 relationship between being connected to a political party and 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 in the years around 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 firms that donations seem to represent actual measures of the level of connectedness, and firms that have contributed more outperform other connected firms. I then develop a dynamic approach to match connected firms with their non-connected but otherwise similar peers and conservatively estimate that being politically connected is associated with 20 to 30 % higher profitability than that of non-connected firms. I also find that non-connected firms that receive public money perform similarly to connected firms, suggesting that other sources of connections, such as personal ties, have played a significant role during the post-transition period in the Czech Republic.

Keywords: political connections, political donations, firm performance, rent-seeking
JEL: D72, H7, D22

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Outly, Michal Soltes, Tereza Malirova, Martin Gregor, four anonymous referees and seminar participants at Charles University for comments and suggestions. Any remaining errors are mine. An online appendix, raw data and code are available at http://miroslavpalansky.cz/connections2018.

1 Introduction

Corporate political connections and their effects have been a widely discussed topic in both academia and media for some time. From personal ties (friendships, relationships etc.) 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. Indeed, 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 influenced outcomes of public procurement auctions. In this paper, I focus on one important and so far little studied type of political connections—direct corporate donations to political parties—and assess whether connected firms have realized higher profits than non–connected firms during the post-transition period in Czechia. I thereby 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 multiparty parliamentary 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 perform significantly better 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. Second, I exploit the monetary nature of my proxy for political connections and hypothesize that the more a firm donates to political parties, the better its performance within the group of donating firms. I find a significant relationship between the monetary amount donated and the donating firm's performance, suggesting that the value of corporate political donations can be thought of as an actual measure of the level of political connectedness. Next, I distinguish whether the donation was made to the party in power (meaning being part of the governing coalition at the national level) or to a non-governing party. This allows for a third group of hypotheses which assess whether donations to the parties present in the government have a higher effect on economic performance of the donating firms than donations to other parties. Perhaps somewhat surprisingly, I find that donating to the party present in the national government is on average associated with inferior financial performance, a result which could at least partly be explained by the relatively high importance of subnational levels of government in Czechia coupled with the fact that during the observed time period, it has often been the case that political parties present in the national government have fared poorly in regional elections. Moreover, lower-tier government levels in Czechia are especially important in allocating public procurement tenders and government grants, two mechanisms to which my results point as important channels through which the advantage of the connected firms is pronounced.

Fourth, building on an approach common in the previous literature and extending it to fit the unbalanced panel nature of the used 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. Thereby I overcome the self-selection problem which arises when using financial donations to political parties as a proxy for the connectedness of firms. I find that connected firms perform significantly better, with my preferred, conservative estimates of a difference of 20-30% in reported returns on assets. However, this effect diminishes in case we compare the connected firms with firms that are not connected, but 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 justify them with elaborating on the most likely mechanisms of such benefits.

I present the contribution of this paper as threefold. First, as far as I know, I am the first to focus systematically on the effects of corporate donations to political parties on financial performance of the donating firms. Second, I study the effects of political connections in a post-transition period, a setting that has so far been largely ignored in the empirical literature, although there is a considerable amount of rather theoretical work suggesting that the value of political connections in such environments is substantial. Third, this work adds to the scarce literature on the value of political connections in a multiparty parliamentary democracy with relatively high fiscal and political decentralization.

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 identification of gaps in this research which I aim to fill with the present work. In Section 3, I describe the empirical methodology used to examine the effects of corporate donations on firm performance in Czechia 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 Czechia between 1995 and 2014, and data on financial performance of all firms registered in Czechia during that 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

A growing body of research suggests that firms connected to politicians enjoy significant benefits 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 telecommuni-

cations legislation; 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) for Paraguay; Claessens et al. (2008) unveiled that connected firms had 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 enjoy 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 political 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) 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) and 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 politically 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. More recently, Lehrer (2017) documented a positive impact of connections on cumulative abnormal returns of stocks of gas and oil firms in Israel following the 2015 elections, although the study found no robust effect for other firms.

Research focusing on other indicators of firm performance is scarcer mainly due to data limitations, but there are several comprehensive case studies available. Amore and Bennedsen (2013) found that even in relatively low-corruption economies such as Denmark, political connections boost firms' operating returns, and more so at local govern-

mental levels. Moreover, connected firms that operate in sectors closely tied to the public sector perform better still, 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 their 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, Li et al., 2008, Boubakri et al., 2008).

In this paper I contribute to the literature on the effects of political connections by focusing on profitability of connected firms in Czechia, a post-transition country that can be assumed to have weaker institutions than other developed countries.[1] One of the advantages of considering firm performance indicators based on financial profitability ratios as reported by individual firms rather than the more usual stock market returns is that they are less perception-driven, a concern that can be relevant for the study of the effect of political connections on stock market returns, as connections are never perfectly observable. 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 also 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 the effects of political connections on business outcomes 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. Numerous researchers corroborated on these results using data on personal ties between politicians and firms in individual countries (Johnson and Mitton, 2003, Khwaja and Mian, 2005, Leuz and Oberholzer-Gee, 2006, Niessen and Ruenzi, 2010, Goldman et al., 2013, Kostovetsky, 2015).

Nevertheless, since it is impossible to correctly identify all personal 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

[1] For example, likely the most widely used measure of institutional quality, the Worldwide Governance Indicators (see **?** for methodology), includes an indicator on "Control of corruption" which consistently places Czechia in the bottom 10 of OECD countries.

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 family members, 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 between business and politics.

One potential proxy for such connections are campaign contributions and political donations to candidates or parties. Researchers who used proxies based on financial support to individual 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) exploited a novel data set of firm– and candidate—level campaign contributions in Brazil. However, little attention has so far been given to contributions to political parties. An exception is a recent paper by Baltrunaite (2016), whose results suggest that firms that donate money to political parties in Lithuania are more successful in public procurement auctions. Although there are reasons to think that connections to a political party may be more efficient than connections to individual candidates (Miettinen and Poutvaara, 2014, 2015), I know of no study that would assess whether firms that are connected to political parties through financial contributions perform better financially. The present paper fills this gap in the literature.

There are two main advantages of using monetary contributions 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. Similarly, the benefit a firm may obtain from being connected may accrue at a different time than the contribution, and we 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, the data allows to estimate the average effect of an additional amount of donated money. Indeed, 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. On the other hand, a potential drawback of using declared political donations as a proxy for political connections is that at least in Czechia, 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 the present 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 Czechia between 1995 and 2014 as well as the best available data on economic performance of all registered firms in that time period from the Magnus database.[2] 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 Czechia 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.

Czechia 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 Czechia. 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 donations[3] is exceptionally comprehensive as well—political parties are obliged by law to disclose all received donations, and so any potential undeclared donations were made illegally. Second, Czechia did not limit the amount of money donors may donate to political parties, and parties did not face any spending limits during the analyzed time period[4], 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 Czechia, the value of political connections is likely to be higher than in other countries (Lízal and Kočenda, 2001, Faccio, 2006, OECD, 2013). Fourth, Czechia is a multiparty parliamentary democracy with a relatively high and growing level of decentralization, a setting in which the effect of corporate contributions to political parties on firm performance has so far not been explored.

[2]While being the best available data on firm performance, the Magnus database is far from perfect, as discussed in Section 3.

[3]For a comprehensive review of political financing in Czechia, see for example the works of Šimral (2015) and Skuhrovec et al. (2015).

[4]Starting from 2017, the donations are capped at CZK 3 million per person (natural or legal) per year.

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.

I construct the averages for both firm performance variables by assigning equal weights to observations at time $t-1$, t and $t+1$. In so doing I disregard 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 the year 2014, are constructed as average values over two years only. I run additional robustness checks using three different periods around the time of the donation: (i) $t \to t+2$; (ii) t only (i.e. no smoothing); and (iii) $t-2 \to t$.

However, I prefer the smoothing period $t-1 \rightarrow t+1$ because it allows both the potential lagged and leading reaction to connections to be pronounced in the model.

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.[5] 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, likely for own profit. In Section 3.2, I formulate models that differentiate between donations to individual parties.

My first model thus looks as follows:

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

where $Y_{Avg(t-1->t+1)}$ is the average of a firm performance indicator (ROE and ROA) over the years $t-1$ to $t+1$; Y_{t-2} is the second 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 population[6]; $FirmSize_t$, 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; and $Leverage_t$, the ratio of liabilities to assets at time t. Lastly, γ_t are year-fixed effects and δ_t are sector-fixed effects (at the 2-digit NACE level).

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:

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

This allows for the economic importance of the donation to be pronounced in the model, but reduces our sample to only connected firms. I estimate this model to test the hypothesis that corporate donations to political parties can be regarded as actual measures of the level of connectedness (and not 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

[5] However, 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.

[6] Boundaries 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.

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, this model is not robust to variation in favourability of the overall economic situation over time. In times of economic crises, the value of connections 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 as compared to connections to other parties. Only connected firms are thus considered in the models presented in this section. 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 in the following section.

I build the models in this section 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 national government in year t; and 0 otherwise.[7] I again construct two models, the first one including a dummy variable indicating whether or not firm i has donated money to a political party in year t and the second including the actual donated amount:

$$Y_{Avg(t->t+2)} = \beta_1 * Y_{t-1} + \beta_2 * Power_t + \beta_3 * X + \gamma_t + \delta_s + \epsilon \tag{3}$$

$$Y_{Avg(t->t+2)} = \beta_1 * Y_{t-1} + \beta_2 * Don_t * Power_t + \beta_3 * X + \gamma_t + \delta_s + \epsilon \tag{4}$$

where $Y_{Avg(t->t+2)}$ 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

[7] This classification is somewhat tricky, because the composition of the government changes following the elections (and not on January 1). 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.

non-connected firms with similar characteristics and then comparing the financial and economic performance of both groups, following (Faccio, 2006, Dombrovsky, 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 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 %.[8] 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

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

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.

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 Czechia 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 Czechia, 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. EconLab[9], a Czech NGO, collects this data every year and publishes it online on the website of the project PolitickeFinance.cz[10], 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 billion[11]. A simple summary of the database for parties currently present in the Chamber of Deputies of the Czech Parliament is provided in Table 1.

[9] `http://www.econlab.cz/`

[10] English version available at: `http://www.politickefinance.cz/en`

[11] Approximately 113 million EUR in exchange rates as of March 2016

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.

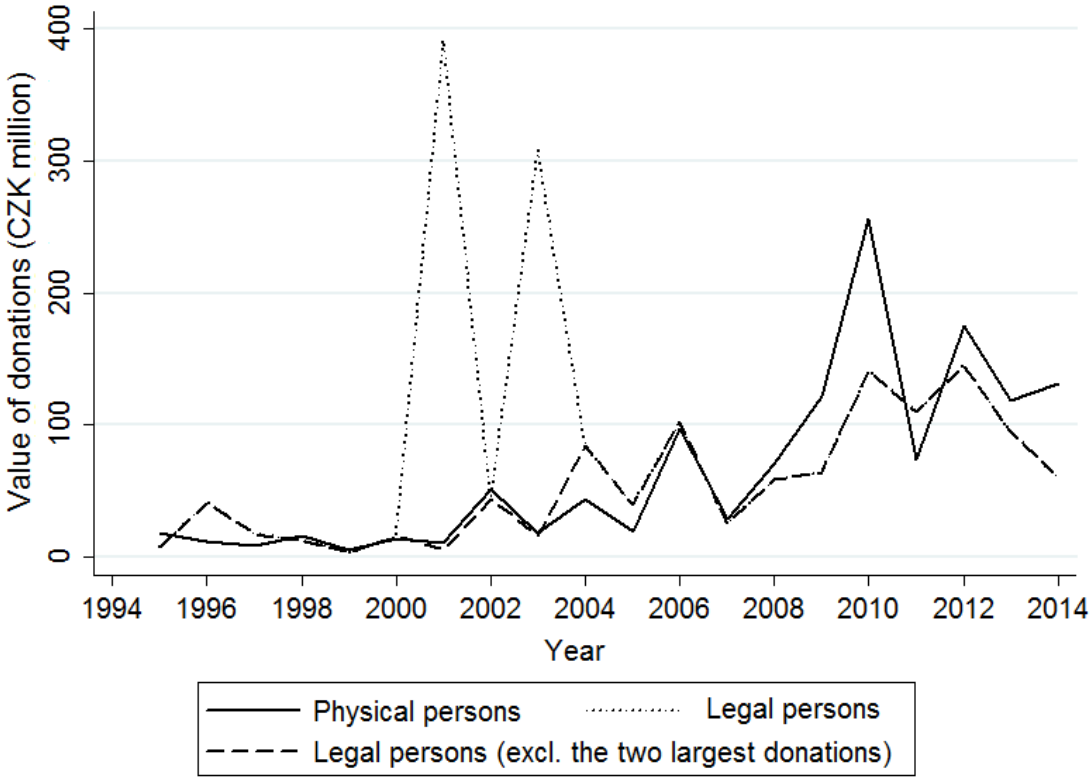
Party	**Number of donations**	**Sum of donations**	**Total donations per year***
ANO 2011	611	47,748,468	15,916,155.87
ČSSD	914	1,032,348,235	51,617,411.75
KDU-ČSL	826	44,708,752	2,235,437.61
KSČM	93	1,557,351	77,867.57
ODS	6,818	448,874,113	22,443,705.66
TOP 09	486	82,534,317	13,755,719.53
Úsvit	1	30,000	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. The increased importance of private money in politics during the transition and post-transition periods is well documented by Šimral (2015). In Figure 1 include a line displaying the value of donations excluding the two largest non-monetary donations made by *Cíl, akciová společnost v Praze*[12] to ČSSD in 2001 and 2003, respectively, because they exceed the next donations in value by more than 15 times.

[12] *Cíl, akciová společnost v Praze* is a company owned entirely by ČSSD and its main aim is to print and publish or sell advertisement materials. This company alone donated more than CZK 930 million to ČSSD over the examined time period.

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 during the examined time period. 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 Czechia, 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. Political party financing in Czechia has been recently under more scrutiny from non-governmental organizations and academics who have analyzed potential risks of conflicts of interests at both the national and local level (Skuhrovec et al., 2015, Palanský, 2014).

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

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. This may seem relatively significant, however, since Capital serves in our models 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, I trim both firm performance indicators—return on equity and return on assets. In doing so, I follow an approach common in the literature: dropping observations which fall outside the $\langle -1, 1 \rangle$ interval[13] (see, for example, Beaver and Ryan (2000)). As a robustness check, I additionally test my models using 2 other trimming criteria (at the 1^{st} and the 99^{th} percentile values and at the 5^{th} and 95^{th} percentile values) and also 3 winsorizations (at the same boundaries as for trimming). I am inclined to use trimming rather than winsorization for my preferred results, due to the most likely reason that outliers are present in the data, which is misreporting or nonstandard reporting practices of one of the two variables used to construct the firm performance indicators. For the same reason, I consider it more appropriate to use trimming at the outside of the $\langle -1, 1 \rangle$ rather than using percentiles as trimming boundaries.

The final data set contains 257,181 firms and 1,486,573 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. Despite these issues, the Magnus database presents the best available data on the financial performance of Czech firms. The database is summarized in Table 2.

[13]For clearer interpretation, I multiply the profitability ratios by 100 and thus, in effect, trim observations that fall outside the $\langle -100, 100 \rangle$ interval.

Table 2: Descriptive statistics of the database of firm results

Variable	Obs	Mean	Std. Dev.	Min	Max
ROE	1,486,573	-3306.86	1,340,211	-1.39E+09	2.85E+07
ROA	1,485,704	-48.5615	11,316.57	-9,172,700	2,915,000
ROE, trimmed at $\langle -100, 100 \rangle$	1,210,407	8.851	32.748	-100	100
ROA, trimmed at $\langle -100, 100 \rangle$	1,430,093	2.228	21.71	-100	100
Earnings before tax	1,495,157	4,454,425	1.88E+08	-3.04E+10	6.49E+10
Leverage	1,487,268	0.585	0.364	0	1
Assets	1,492,473	1.32E+08	5.28E+09	0	2.40E+12

4.3 Other data

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 identification number of an existing firm. The remaining, unmatched donors were dropped. Regarding data on firms, I use some information from the Magnus database itself (sector, total assets, and leverage ratios). I further add information about firms from other sources. Most importantly, I use EconLab's hand-cleaned internal database of firms and their details (size, location), which is compiled from numerous different sources and also contains information on public procurement and European grants obtained by each firm since 2006 (unfortunately, no data on public procurement and EU grants is available prior to 2006).

After merging the data sources needed for this analysis, we can inspect the basic characteristics of the connected firms. I find that 40.85% of the connected firms in my sample have supplied at least one public procurement contract or received EU grants since 2006. Given the anecdotal evidence and individual case studies, it is likely that access to public funds plays an important role in the creation of extra profit for the politically connected firms in Czechia.

5 Results

This section sums up the results of tests outlined in Section 3. I present the results in three categories. First, I 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 3 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 0.7 percentage point difference in ROE and around 0.13 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 I explore further in the subsequent models.

I conduct a series of tests to check the robustness of these results. In Table 9 I compare the impact of using six different trimming or winsorization criteria, and I obtain expected results. Due to high outliers, the coefficients for the binary variable indicating a connection are higher for criteria that affect lower numbers of observations, and even more so for winsorized samples as compared to trimmed samples. Table 10 then shows the results of the estimation of model represented by Equation 1[14] when using different smoothing periods for the return on equity, as described in Section 3. I observe that the results are fairly robust to this choice, with the estimated coefficient for the binary variable indicating a connection ranging between 0.7 and 1.5 percentage points in the return on equity. This suggests that the connections are likely to show a certain degree of persistence before and after the monetary contribution is made, or, alternatively, that the firm performance indicators can react with lags or leads to connections. The following model investigates this issue further.

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 3. As the aim of this part of the analysis is to quantify the effect of donating more money (and not the fact that a firm donates), only donating firms are included in these models. The estimates of the effect of the donation value are positive and significant for both firm performance indicators. These results suggest that the connections established through corporate donations to political parties may be regarded as a form of short-term investment. Due to arguments about potential endogeneity of the donated amount, I do not aim to establish causality with this part of analysis, but rather focus on describing the

[14]Complete results of the robustness checks for all models are available upon request.

existing empirical relationship. My subsequent models are designed to deal with specific parts of the endogeneity issue.

Table 3: Results of the pooled models, OLS.

	(1) ROE	(2) ROA	(3) ROE	(4) ROA
Lag (2) of ROE	.259***		.241***	
	[.256,.261]		(15)	
Lag (2) of ROA		.228***		.205***
		[.225,.23]		(9.38)
PubInd	8.69	.51	-8.72*	-8.36***
	[-.012,17.4]	[.,.]	(-2.39)	(-4.01)
PubSec	1.83***	.592***	1.75*	.577
	[1.69,1.98]	[.508,.677]	(2.47)	(1.58)
LocSize	-.062***	-.172***	-.855***	-.453**
	[-.098,-.025]	[-.194,-.151]	(-3.35)	(-3.06)
FirmSize	1.14***	.97***	-.52*	-.23
	[1.11,1.16]	[.954,.987]	(-2.54)	(-1.89)
Leverage	-2.11***	-9.28***	5.58***	-11.1***
	[-2.28,-1.94]	[-9.38,-9.18]	(3.74)	(-13.8)
DDon	1.31***	.463**		
	[.71,1.92]	[.131,.795]		
ln(Don)			.661**	.312**
			(3.23)	(2.77)
Constant	-21.6***	-14.8***	20.3*	20.4***
	[-23.7,-19.5]	[-16,-13.6]	(2.25)	(4.03)
Year-fixed effects	Yes	Yes	Yes	Yes
Sector-fixed effects	Yes	Yes	Yes	Yes
Observations	687807	887781	3423	3922
R^2	0.189	0.212	0.221	0.252

95 % confidence intervals in brackets, robust t-statistics in parentheses.
* p < 0.05, ** p < 0.01, *** p < 0.001.

I perform a series of tests to check the robustness of these results. First, I analyze the sensitivity of the model to the inclusion of additional individual variables. The results are presented in Tables 12 and **??** 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 altering the directions of the estimated effects. Second, I test whether the effects are different across industries with different intensity of cooperation with the public sector. I divide the pooled model into 5 quintiles based on the volume of public procurement they have supplied between 2006 and 2014. In Table 4 I present the results of estimating the model for these 5 groups individually. The effect of donations is especially high for firms operating in most

procurement–intensive industries (i.e. in the highest quintile), 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).

Table 4: 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.

	(1) ROE	(2) ROE	(3) ROE	(4) ROE	(5) ROE
Lag (2) of ROE	.26***	.272***	.258***	.249***	.196***
	(96.2)	(115)	(99.9)	(107)	(35.9)
PubSec	.815***	2.8***	1.69***	1.84***	1.78***
	(5.14)	(16.2)	(11.2)	(12.4)	(6.21)
LocSize	.264***	-.155***	-.065	-.184***	-.14
	(5.9)	(-4.49)	(-1.58)	(-5.41)	(-1.53)
FirmSize	.883***	1***	1.23***	1.44***	1.17***
	(34.4)	(47.2)	(49.3)	(63.9)	(18)
Leverage	-2.18***	-3.96***	-.897***	-1.6***	2.8***
	(-10.9)	(-25.8)	(-4.79)	(-9.56)	(6.36)
DDon	.638	1.76*	2.24***	-.282	2.57**
	(.996)	(2.37)	(3.42)	(-.456)	(3)
Constant	-16.7***	-19.7***	-31.7***	-26.1***	-24.8***
	(-13.7)	(-23)	(-17.8)	(-40.5)	(-16.2)
Year-fixed effects	Yes	Yes	Yes	Yes	Yes
Sector-fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	139946	190020	147851	181717	29242
R^2	0.191	0.208	0.179	0.178	0.149

Robust t-statistics in parentheses.

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

My 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 5 and suggest, somewhat surprisingly, that being connected to the party in power is associated with rather lower financial performance in the years following the establishment of such connections, although most of the coefficients are not significant. A possible explanation for the insignificance of this effect is that different parties are often in power at different levels of government. In Czechia, subnational levels of government (in which it is often the case that different parties are in power than in the national government) administer public procurement and public grants of significant value, and coupled with the results about public procurement being one of the most likely sources of added value to connected firms (Palanský, 2014), these results are far

less surprising. To investigate this point more thoroughly, I perform a short additional test. Similarly to Palanský (2014), I exploit the substantial shift in political power in the regional governments following the 2008 elections. I restrict the sample to the two election periods surrounding this election and ask whether firms connected to the party that was in power at the regional level have fared better than firms connected to other parties. I report the results in panel (5) of Table 5. They are in support of my argument and suggest that between 2004 and 2012, being connected to the party in power at the regional level was associated with superior financial performance of such connected firms.

Table 5: Results of the party-in-power models, OLS.

	(1) ROE	(2) ROA	(3) ROE	(4) ROA	(5) ROE
Lag (2) of ROE	.242***		.242***		.211***
	(15)		(15)		(11.13)
Lag (2) of ROA		.205***		.206***	
		(9.38)		(9.39)	
PubInd	-5.9	-7.22***	-6.95	-7.51***	-7.65*
	(-1.6)	(-3.45)	(-1.89)	(-3.6)	(-1.69)
PubSec	1.94**	.649	1.89**	.628	3.07***
	(2.73)	(1.78)	(2.66)	(1.72)	(3.58)
LocSize	-.75**	-.394**	-.738**	-.382**	-1.017***
	(-2.96)	(-2.7)	(-2.91)	(-2.6)	(-3.35)
FirmSize	-.365	-.166	-.387	-.164	-.337
	(-1.83)	(-1.37)	(-1.93)	(-1.36)	(-1.42)
Leverage	5.59***	-11.1***	5.53***	-11.1***	5.3***
	(3.74)	(-13.8)	(3.7)	(-13.8)	(2.96)
Power	-1.77*	-.504			-1.53
	(-2.37)	(-1.21)			(-1.52)
Don*Power			-5.4e-07	-7.5e-07	
			(-.328)	(-1.08)	
Local Power					2.299**
					(2)
Constant	24.6**	22.5***	25.4**	23.6***	
	(2.7)	(4.44)	(2.93)	(4.7)	
Year-fixed effects	Yes	Yes	Yes	Yes	Yes
Sector-fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	3423	3922	3423	3922	2418
R^2	0.220	0.251	0.219	0.251	0.2207

Robust t-statistics in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

In Table 6, 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 6: 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 7 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.

Table 7: 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, PubSec=1	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, PubSec=0	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

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.

Table 8: Results of a paired t-test of equal means of financial performance indicators for connected and non-connected (but otherwise similar) firms, non-public and public firms separately.

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
ROEc, PubSec=1	1849	21.163	0.601	19.9842	22.3418		
ROEnc, PubSec=1	1849	16.209	0.288	15.6441	16.7737		
Difference	1849	4.9541	0.6374	3.704	6.2041	7.7725	0
ROAc, PubSec=1	1956	8.39	0.2812	7.8384	8.9415		
ROAnc, PubSec=1	1956	6.0831	0.1498	5.7893	6.3769		
Difference	1956	2.3069	0.3095	1.6999	2.9139	7.4538	0

I perform one more test to analyze this issue wherein I separate the exercise into only public (and only non-public) connected firms and compare them with their public (non-public), non-connected peers. The results, presented in Table 8, suggest that within the sample of firms that do work closely with the public sector, the connected ones fare significantly better than non-connected ones. Similarly, within the sample of firms that do not work closely with the public sector, I find 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 points (22.38 %) for ROE and nearly 1.5 percentage points (32.02 %) for ROA.

Overall, the matching exercise shows higher differences in financial performance between connected and non-connected firms than the baseline models. I argue that this is due to the fact that in the dynamic matching analysis, only firms that are similar to (and thus can be matched with) connected firms are included. The connected firms thus seem to outperform their non-connected, but otherwise similar peers on average to a larger extent than other firms.

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 0.7 percentage points in return on equity and 0.13 percentage points in return on assets. Furthermore, I find a relatively significant and positive 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 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 suggests that firms in smaller cities and those connected to parties in power at the lower tiers of government 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.

Potential areas for further research include finding other proxy variables to estimate the firms' connectedness. For Czech firms, this side of the analysis could be potentially be further strengthened by matching firm officials (whose information can be obtained from the Business Registry) and electoral candidates (both successful and unsuccessful) in municipality elections to identify the connected firms. A drawback is that personal

identification numbers are not provided in neither data source, which makes pairing less reliable. On the other side of the problem, one of the possibilities is to observe only listed firms and focus on their stock market returns as performance indicators for which better data are available, especially in that such data sets would be more balanced and the fixed effects framework could be used to mitigate the risks of omitted variable bias. The analysis could also potentially focus on specific channels through which connections may pay off—for example, public procurement or national grants. Increased data availability in the future may bring about the possibility to use better methods to estimate the effects of corporate political connections in the Czech Republic.

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Appendix

Table 9: Results of the pooled models using different trimming procedures, OLS.

	(1) ROE, trimmed at $\langle -1, 1 \rangle$	(2) ROE, winsorized at $\langle -1, 1 \rangle$	(3) ROE, trimmed at 1st and 99th percentile	(4) ROE, winsorized at 1st and 99th percentile	(5) ROE, trimmed at 5th and 95th percentile	(6) ROE, winsorized at 5th and 95th percentile
Lag (2) of ROE, trimmed at $\langle -1, 1 \rangle$	.259***					
	[.256,.261]					
Lag (2) of ROE, winsorized at $\langle -1, 1 \rangle$		.209***				
		[.207,.211]				
Lag (2) of ROE, trimmed at 1st and 99th percentile			.192***			
			[.187,.197]			
Lag (2) of ROE, winsorized at 1st and 99th percentile				.223***		
				[.218,.227]		
Lag (2) of ROE, trimmed at 5th and 95th percentile					.219***	
					[.216,.222]	
Lag (2) of ROE, winsorized at 5th and 95th percentile						.218***
						[.215,.22]
PubInd	8.69	15.9**	-2.06	57.5***	7.37	20.2*
	[-.012,17.4]	[5.71,26.1]	[.,.]	[26.2,88.9]	[-9.16,23.9]	[2.73,37.6]
PubSec	1.83***	4.14***	15.2***	23.7***	4.83***	10.6***
	[1.69,1.98]	[3.93,4.35]	[14.4,15.9]	[22.5,24.9]	[4.57,5.09]	[10.2,11]
LocSize	-.062***	-.471***	-2.51***	-4.84***	-.596***	-1.75***
	[-.098,-.025]	[-.523,-.42]	[-2.72,-2.31]	[-5.13,-4.54]	[-.668,-.523]	[-1.86,-1.64]
FirmSize	1.14***	1.76***	2.36***	-1.97***	2.86***	2.06***
	[1.11,1.16]	[1.73,1.8]	[2.24,2.49]	[-2.17,-1.76]	[2.81,2.9]	[1.99,2.13]
Leverage	-2.11***	-17.3***	-90.6***	-107***	-35.1***	-60.7***
	[-2.28,-1.94]	[-17.5,-17.1]	[-91.4,-89.7]	[-108,-106]	[-35.5,-34.8]	[-61.2,-60.3]
DDon	1.31***	2.43***	8.07***	14.9***	2.81***	6.26***
	[.71,1.92]	[1.56,3.3]	[4.94,11.2]	[10.2,19.6]	[1.81,3.81]	[4.61,7.91]
Constant	-21.6***	-26.5***	6.14	83.1***	-41.7***	-12.2***
	[-23.7,-19.5]	[-29.2,-23.7]	[-3.1,15.4]	[65.1,101]	[-45.4,-38]	[-17.6,-6.78]
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Sector-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	687807	941117	902977	941117	793326	941117
R^2	0.189	0.183	0.145	0.143	0.220	0.220

95 % confidence intervals in brackets.

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

Table 10: Results of the pooled models using different smoothing periods, OLS.

	(1) ROE, smoothed $t-1 \rightarrow t+1$.	(2) ROE, smoothed $t \rightarrow t+2$.	(3) ROE, smoothed $t-2 \rightarrow t$.	(4) ROE at t
Lag (2) of ROE	.259***			
	[.256,.261]			
Lag of ROE		.292***		.351***
		[.29,.294]		[.348,.354]
Lag (3) of ROE			.243***	
			[.24,.245]	
PubInd	8.69	5.96	8.5	9.08
	[-.012,17.4]	[-1.86,13.8]	[-1.07,18.1]	[-1.49,19.7]
PubSec	1.83***	2.31***	1.52***	1.48***
	[1.69,1.98]	[2.17,2.45]	[1.36,1.68]	[1.31,1.65]
LocSize	-.062***	-.068***	-.067**	-.096***
	[-.098,-.025]	[-.101,-.034]	[-.108,-.027]	[-.137,-.056]
FirmSize	1.14***	.893***	1.32***	1.16***
	[1.11,1.16]	[.872,.913]	[1.3,1.35]	[1.13,1.18]
Leverage	-2.11***	-.125	-4.26***	-2.04***
	[-2.28,-1.94]	[-.277,.026]	[-4.45,-4.07]	[-2.21,-1.86]
DDon	1.31***	.728*	1.54***	.962*
	[.71,1.92]	[.121,1.34]	[.9,2.19]	[.225,1.7]
Constant	-21.6***	-17.8***	-24.4***	-22.4***
	[-23.7,-19.5]	[-19.8,-15.8]	[-26.7,-22.1]	[-24.7,-20]
Year-fixed effects	Yes	Yes	Yes	Yes
Sector-fixed effects	Yes	Yes	Yes	Yes
Observations	687807	862134	558837	862134
R^2	0.189	0.190	0.190	0.187

95 % confidence intervals in brackets.

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

Table 11: Sensitivity analysis, pooled model, ROE

	(1) ROE	(2) ROE	(3) ROE	(4) ROE	(5) ROE	(6) ROE	(7) ROE
DDon	7.15***	4***	4***	2.7***	2.69***	1.33***	1.31***
	[6.5,7.8]	[3.41,4.6]	[3.4,4.59]	[2.1,3.3]	[2.09,3.29]	[.73,1.94]	[.71,1.92]
Lag (2) of ROE		.275***	.275***	.272***	.272***	.261***	.259***
		[.273,.277]	[.273,.277]	[.27,.275]	[.27,.274]	[.258,.263]	[.256,.261]
PubInd			8.43	8.53	8.49	5.2e-03	8.69
			[-.314,17.2]	[-.27,17.3]	[-.312,17.3]	[-4.6e+03,4.6e+03]	[-.012,17.4]
PubSec				4.11***	4.11***	1.84***	1.83***
				[3.97,4.25]	[3.98,4.25]	[1.69,1.99]	[1.69,1.98]
LocSize					-.043*	-.069***	-.062***
					[-.08,-6.5e-03]	[-.106,-.033]	[-.098,-.025]
FirmSize						1.1***	1.14***
						[1.08,1.12]	[1.11,1.16]
Leverage							-2.11***
							[-2.28,-1.94]
Constant	-3.39***	-1.67*	.201	-.975	-.789	-21.6***	-21.6***
	[-4.7,-2.08]	[-3.2,-.138]	[-1.83,2.24]	[-3.01,1.06]	[-2.83,1.25]	[-23.7,-19.5]	[-23.7,-19.5]
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1198024	692812	691842	691842	691842	687832	687807
R^2	0.042	0.175	0.175	0.178	0.178	0.188	0.189

95 % confidence intervals in brackets.

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

Table 12: Sensitivity analysis, pooled model, ROA

	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA	(7) ROA
DDon	4.12***	2.46***	2.46***	1.7***	1.67***	.789***	.463**
	[3.76,4.48]	[2.12,2.79]	[2.12,2.79]	[1.37,2.04]	[1.33,2]	[.449,1.13]	[.131,.795]
Lag (2) of ROA		.278***	.278***	.276***	.276***	.268***	.228***
		[.275,.281]	[.275,.281]	[.273,.279]	[.273,.278]	[.265,.27]	[.225,.23]
PubInd			.163	.204	.127	.063	.51
			[.,.]	[-2.1e+04,2.1e+04]	[.,.]	[-2.4e+03,2.4e+03]	[.,.]
PubSec				2.44***	2.45***	1.04***	.592***
				[2.36,2.52]	[2.37,2.53]	[.95,1.12]	[.508,.677]
LocSize					-.189***	-.229***	-.172***
					[-.211,-.168]	[-.25,-.207]	[-.194,-.151]
FirmSize						.73***	.97***
						[.714,.745]	[.954,.987]
Leverage							-9.28***
							[-9.38,-9.18]
Constant	-2.89***	-2.08***	.179	-.51	.311	-13.4***	-14.8***
	[-3.69,-2.09]	[-2.98,-1.17]	[-.994,1.35]	[-1.69,.667]	[-.873,1.49]	[-14.6,-12.1]	[-16,-13.6]
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1416675	889171	887895	887895	887895	887895	887781
R^2	0.033	0.163	0.163	0.165	0.166	0.174	0.212

95 % confidence intervals in brackets.

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

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