

Political Connections and Firm Value: Evidence from the Regression Discontinuity Design of Close Gubernatorial Elections

Quoc-Anh Do, Yen-Teik Lee, Bang Dang Nguyen

▶ **To cite this version:**

Quoc-Anh Do, Yen-Teik Lee, Bang Dang Nguyen. Political Connections and Firm Value: Evidence from the Regression Discontinuity Design of Close Gubernatorial Elections. 2013. hal-03460972

HAL Id: hal-03460972

https://sciencespo.hal.science/hal-03460972

Preprint submitted on 1 Dec 2021

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Laboratoire interdisciplinaire d'évaluation des politiques publiques

LIEPP Working Paper

Evaluation of Democracy Research Group
March 2013, nº15

Political Connections and Firm Value: Evidence from the Regression Discontinuity Design of Close Gubernatorial Elections

Quoc-Anh Do

Associate Professor at the Department of Economics and LIEPP, Sciences Po

quocanh.do@sciences-po.org

Yen-Teik Lee

Singapore Management University

yt.lee.2006@smu.edu.sg

Bang Dang Nguyen

University of Cambridge

b.nguyen@jbs.cam.ac.uk

Sciences Po | LIEPP
27 rue Saint-Guillaume
75337 Paris Cedex 07
Tel : 01 45 49 83 61
www.sciencespo.fr/liepp

© 2013 by Quoc-Anh Do, Yen-Teik Lee and Bang Dang Nguyen. All rights reserved.

Political Connections and Firm Value: Evidence from the Regression Discontinuity Design of Close Gubernatorial Elections

Quoc-Anh Do *
Sciences Po

Yen-Teik Lee **
Singapore Management University Lee Kong Chian School of Business

Bang Dang Nguyen ***
University of Cambridge Judge Business School

This draft: March 2013

ABSTRACT

Using the network of university classmates among corporate directors and politicians and the regression discontinuity design of close gubernatorial elections from 1999 to 2010, we identify the positive and significant impact of social-network based political connections on firm value. Firms connected to elected governors increase value by 1.36% on average surrounding the election date. Political connections are more valuable in a state with a higher level of regulation and corruption, in smaller firms, and in firms dependent on external finance. Firms connected to election winners invest more, earn better operating performance, hold more cash, and enjoy better long-term stock performance.

Keywords: Political connection; firm value; social network; close election; gubernatorial election; regression discontinuity design.

JEL Classifications: G3, G28, G30, G34, G38.

We thank D'Maris Coffman, Chris Parsons, Kelsey Wei, and seminar participants at the Sim Kee Boon Institute for Financial Economics, the University of Bristol, the American Economic Association 2013 Meeting, the 2013 UNC-Duke Corporate Finance Conference, the 2012 Asia-Pacific Economic Association Meetings in Singapore, the 2012 Cambridge-Penn-Tinbergen Annual Finance Conference, the 2012 Financial Management Association meeting, and the 2012 SMU-ESSEC Workshop on Financial Economics, for helpful comments. We are grateful to Diego Garcia and Øyvind Norli for generously providing us with the data on the geographic operational diversity of U.S. firms. Do acknowledge financial support from the Sim Kee Boon Institute for Financial Economics at Singapore Management University. Nguyen acknowledge financial support from the University of Cambridge through an University Travel Grant and Cambridge Judge Business School. All errors remain our own.

* Department of Economics & LIEPP, Sciences Po, Paris 75007, France. Tel: (+33) 1 4549 8358; E-mail: quocanh.do@sciences-po.org.

** Department of Finance, Lee Kong Chian School of Business, Singapore Management University, Singapore 178899. E-mail: yt.lee.2006@smu.edu.sg.

*** Finance and Accounting Group, Judge Business School, University of Cambridge, Cambridge CB2 1AG, U.K. Tel: (+44) 1223 760 740; Fax: (+44) 1223 339 701; E-mail: b.nguyen@jbs.cam.ac.uk.

1. INTRODUCTION

Do political connections impact firm value? The answer to this question wields crucial implications for shareholder value, corporate governance, institutional design, and incentive mechanisms for politicians and firms. Although abundant anecdotal evidence in the media suggests positive benefits of political connections, it remains a challenging task to prove, disprove, or generalize the relationship between political connections and firm value. As with many topics in corporate finance, any study of political connections will have to overcome the endogeneity issue which prevents the precise identification and quantification of their impact.[1] In the U.S., the rarity of direct links of ownership or concurrent employment between corporations and politicians due to the strict regulations and disclosure regime, as well as a high level of transparency, makes it even more challenging to identify potential political connections and gather sufficient data and observations for empirical studies.

Addressing these challenges, we investigate the value of political connections in the U.S., where institutions rank among the best, and the line between politics and business among the clearest.[2] Any significant result we might find should, therefore, represent an underestimation of the value of political connection in other parts of the world having a lower quality of institutions and governance. To this purpose, our paper proposes a few innovations.

First, we define political connections broadly by following a social network approach, as proposed by Bertrand et al. (2008), Cohen, Frazzini, and Malloy (2008), Fracassi (2009), Do et al. (2012), and Nguyen (2012). A firm is connected to a politician if one of its directors shares the same educational background with a politician. The connections from the network of classmates and alumni are clearly and unambiguously defined based on publicly available information on educational backgrounds of all politicians and directors. This network's coverage is broad enough to be representative of the population of politicians and directors and to avoid obvious and specific political connections that are subject to latent conflicts of interest, making it possible to generalize the empirical results. Alumni and classmate networks also play an important role in the American society. Educational institutions received as much as $41.67 billion in 2010, or

[1] See Roberts and Whited (2010) for a comprehensive overview of the endogeneity issues in empirical corporate finance and their solutions, including Regression Discontinuity Design.

[2] The United States ranks in the first decile in control of corruption, rule of law, and regulatory quality and government effectiveness in the World Bank's World Governance Indicators (Kaufman et al. 2011) in 2000-2008.

14% of all charitable donations, second only to religious organizations (the Giving USA Foundation, 2011.)[3]

Second, we propose a new identification strategy. We study a sample of firms connected to candidates in close gubernatorial elections. Because the outcomes of such close elections are almost random, we can apply a Regression Discontinuity Design framework to investigate the impact of political connections on the value of connected firms. We rely on the recent literature on Regression Discontinuity Design applied to the events of close elections. Lee (2008) shows that close elections can be considered a Regression Discontinuity Design (RDD), a natural experiment that produces near-randomized-trial identification with extremely good internal validity. That is, a connection to a politician elected to office by a small margin is nearly identical to a connection to one defeated by a small margin, and can be considered as a randomized experiment around the threshold. Moreover, Lee and Lemieux (2010) also show that the estimated effect is a Weighted Average Treatment Effect (WATE), thus being generalizable to the sample of all politicians with a nonzero chance of experiencing a close election. The strength of RDD more than offsets a potential weakness of traditional event studies, in that we correctly estimate the value of connection even if the market misestimates the probability of event. Event-study techniques are still used in our approach only to improve estimation efficiency, and are not essential to the results. This empirical design has been widely used in labor, political, and development economics (see Lee and Lemieux, 2010), but only recently in corporate finance (examples include Chava and Roberts, 2008; Kerr, Lerner, and Schoar, 2010; and Cuñat, Gine, and Guadalupe, 2012.)

Third, we suggest a solution to overcome homophily, a common and thorny issue in studies of social networks. Homophily, as first defined by sociologists, refers to the phenomenon that people sharing the same characteristics are more likely to join the same network, thus confounding the effect of connections with the effect of shared characteristics.[4] Recent works using the social network of educational backgrounds (Cohen, Frazzini, and Malloy, 2008;

[3] We abstract from connections based on political contributions (e.g. Cooper et al. 2011) because it is difficult to establish clear links between firms and specific politicians. Firms may not make direct contributions. They can only initiate independently-run political action committees (PACs), which channel donations from employees to both major parties, larger PACs, and usually smaller amounts to specific candidates. In our study, we do control for total contributions from all sources.

[4] See McPherson, Smith-Lovin, and Cook (2001).

Fracassi 2009; Nguyen 2012) have distinguished between former classmate networks and alumni networks to highlight the effect of connections as opposed to that of shared characteristics. By including both politicians and directors, we are able to push this methodology further: we introduce school fixed effects, thus identifying the effect of political connections by variations over time (school fixed effects are unidentifiable in earlier works based solely on the connections of businessmen). Because we find that our results remain sensibly similar when controlling for school fixed effects, we can ascertain that the discovered effects come from political connections, not homophily.

The RDD equation provides an estimate of the stock-market value of a new connection to a politician in the gubernatorial race: the treatment is one that suddenly elects a firm's connected politician as governor, as opposed to leaving him where he is. As shown in Lee and Lemieux (2010), the Regression Discontinuity Design in close elections produces a consistent, unconfounded estimate of the effect of the treatment. This estimate is in fact as good as a randomized experiment around the vote share threshold of 50%, and can account for all confounding factors prior to the event, be they observable or unobservable. Therefore, instead of running regressions trying to control for all relevant covariates, we can focus our empirical work on a single regression, while varying the subsample used in the regression. In the terminology of Lee and Lemieux (2010), we estimate the WATE, where the weight of each observation is the probability that a politician experiences a very close election. While some politicians are less likely to have that experience than others, the inclusion of highly visible politicians such as Janet Napolitano in our sample suggests that our estimate can cover a broad share of the population of politicians and is therefore generalizable. Taken together, our estimate identifies a treatment effect that can shed light on social connections between governors and corporate directors.

We obtain data on gubernatorial elections from 1999 to 2010 from the Federal Election Commission, from which we filter in only elections of a winning margin within 5% between the winner and the loser. We manually collect details of all politicians' educational backgrounds from the web archives of their campaigns, a process made difficult by the search for less prominent defeated candidates. On the director side, we obtain past education history for directors of public firms in the U.S. from BoardEx of Management Diagnostics Limited. We then form all pairs between close-election candidates (elected or defeated) and directors who graduated from the same educational institution (same campus) within one year of each other, and link each pair

to the stock performance of the firm around the date of the politician's close election.[5] Each observation thus matches a firm's cumulative abnormal return on the event window to the win or loss status of the candidate who shares an educational background with a director of the firm.

Our study results in a number of findings. First, we find consistent and robust results that political connections are valuable to firm value. Firms connected to the winner in a close gubernatorial election experience a positive and significant average cumulative abnormal return (CAR) of 1.36% over and above the CAR of firms connected to the loser. The effect is robust to alternative specifications in the event windows and in the market models, and across sub-samples. Second, we find that the value of political connections vary across states and firms. Political connections are more valuable in a state with a higher level of regulation, higher level of corruption, and higher population concentration in the state's capital. Political connections are also more valuable in small firms, in firms that rely more on external finance, and in firms with some activities in the politician's state prior to the election. Third, we find that political connection wield real impact on firm behavior. Following close elections, firms connected to the winner invest significantly more than do firms connected to the loser. They become more profitable and hoard more cash. Their stock prices also perform better over the long term.

Our paper contributes to finance literature in several ways. First, we propose a new approach to measuring political connections based on social networks of candidates to governorship and directors of listed firms. This approach allows us to have a relatively sizable sample of U.S. firms for our study and to avoid obvious and specific connections. We thus enrich the recent finance literature that provides evidence on the impact of social ties on numerous finance issues (Barber et al. 1995; Barber and Palmer, 2001; Cohen, Frazzini, and Malloy, 2008; Hochberg, Ljungqvist, and Lu, 2007, 2010; Schmidt, 2008; Allen et Babus 2009; Kuhnen, 2009; Jackson 2009; Do et al. 2012; Nguyen 2012.)

Second, we propose a solution to the identification problem. Extant literature studies extensively the value of political connections through events that happen independently of political connections. Knight (2007), Goldman, Rocholl, and So (2008, 2009), and Mattozzi (2008) exploit close elections in presidential races in the U.S.; Roberts (1990), Jayachandran (2006), Fisman et al. (2006), and Blanes i Vidal et al. (forthcoming) use news and events related to prominent American politicians; while Fisman (2001), Johnson and Mitton (2003),

[5] We do not construct links between people previously working in the same firm, as only a few in our sample of politicians have previously worked in a publicly listed firm.

Bunkanwanicha and Wiwattanakantang (2009), Ferguson and Voth (2008), and Imai and Shelton (2010) treat politically important events in Indonesia, Malaysia, Thailand, Nazi Germany, and Taiwan. This strategy avoids the direct reverse causation channel, but, as discussed by Snowberg, Wolfers, and Zitzewitz (2007, 2008), many caveats persist, notably the unobserved prior probability of each event. The use of prediction markets as a helpful fix is unfortunately only limited to important events such as American presidential elections; it thus restricts the scope and undermines the generalizability of such analysis. Other studies using non-political firm-related events such as appointments of directors (Faccio, 2006; Goldman, Rocholl, and So, 2009), bailouts (Faccio, Masulis, and McConnell, 2006), IPOs (Fan, Wong, and Zhang, 2007; Francis, Hasan, and Sun, 2009) are subject to the endogeneity concern that these events are partly triggered by certain unobservable characteristics of the firms. Other papers, such as Khwaja and Mian (2005); Dinç (2005); Leuz and Oberholzer-Gee (2006); Bertrand et al. (2008); Claessens, Feijen, and Laeven (2008); Li et al. (2008); and Boubakri, Cosset, and Saffar (2009), rely on fixed effects and/or difference-in-difference strategies and thus are prone to biases induced by time-varying characteristics of firms or politicians/political parties.

While prior papers have carried out various robustness checks to verify the causality channel, few treat the endogeneity of connections. The possibility of unobserved firm characteristics affecting both corporate outcomes and political connections are extremely hard to rule out. As detailed in the following section, our framework deals adequately with both the endogeneity of the connected politician and the selection bias in networks due to homophily, providing a powerful internal validity of the empirical results. Moreover, the estimated effect is a WATE across the sample of all politicians susceptible to experiencing a close election, and across sampled firms, which are comparable to Compustat's universe. The discovered results are therefore also externally valid. That is, it is possible to generalize the conclusions to the population of all firms and politicians.

Our third contribution is the finding of a consistent positive impact of political connection on firm value in the U.S. This result complements international evidence of the value of political connection in extant literature (e.g., Fisman, 2001; Faccio, 2006; Faccio et al 2006), and enrich evidence from the U.S. (e.g., Goldman, Rocholl, and So, 2008). Our finding is also consistent with recent research from Do et al. (2012), who find that firms lose benefits when the connected politician moves from state to federal politics.

The remaining paper is organized as follows. Section 2 details the methodology. Section 3 provides data description. Section 4 reports the empirical results. Section discusses the

channels and interpretations of the results. Section 6 studies the real impact of political connections on firms. Section 6 reports robustness checks. Section 8 concludes.

2. IDENTIFICATION AND EMPIRICAL DESIGN

An estimation of the impact of political connections on firm value should overcome a reverse causation channel when a well-performing firm may be able to help its connected politicians win elections, or an omitted variable bias when connected firms and politicians are affected by the same unobservable factor, such as a shift in public opinion. The reverse causation and endogeneity bias are best eliminated with a randomization of the assignment of a politician to office. If the politician is chosen randomly, no concern exists about either the reverse causation of firm value changes or the influence of some omitted variables. It is, however, extremely difficult to find a randomized experiment on political connection. Lee's (2008) pioneering work on Regression Discontinuity Designs (RDD) shows that the event of winning close to the vote threshold of 50% is randomized between the winner and the loser as in a randomized experiment, and that conditional on the election being close, the incidence of winning or losing is independent of all observable and unobservable characteristics of the politician before the election. The RDD thus allows an estimation of the average treatment effect of connections to elected politicians versus defeated politicians without any reverse causation or omitted variable bias, ensuring the internal validity of the results. Results from the RDD are also externally valid and generalizable. Lee and Lemieux (2010) point out that the RDD estimate is not only informative for close elections but also for all elections. The estimate can be interpreted as a weighted average treatment effect of being politically connected, where each politician's weight is her ex ante likelihood to be in a close gubernatorial election, which is nontrivial for most American politicians. Even very powerful politicians can be subject to close gubernatorial elections, as Arizona's Janet Napolitano experienced in 2002.

Our identification strategy has a key advantage in comparison with event studies. Traditional event studies rely on the event's exogeneity and the accuracy of the market's prior beliefs, unavailable except in prediction markets (see discussions in Fisman, 2001, and Snowberg et al., 2008). In contrast, our design is always valid even if the market's prior belief is largely incorrect. Indeed, suppose that the market believes in a winning probability of 65% instead of the correct probability of 50%. For $100 of perceived value of winning, the pre-event connection will be priced by the market, incorrectly, at $65. The post-event market reaction to a realized win is $35, and that to a realized loss is negative $65. An event study focused on election wins may

report the underestimated value of $35.[6] However, RDD estimation still produces, correctly, the difference of $35-(-$65) = $100, exactly the right value of having a connection to an elected politician. (See the appendix and Lee and Lemieux, 2010, for more details.)

In addition to the cross-sectional identification by RDD, time-series identification from event-study market models is used to calculate stocks' Cumulated Abnormal Returns (CARs). However, while the use of CARs improves estimation efficiency by reducing market noises, it is not essential to our results, thanks to the near-random nature of RDD assignments.

We design two main econometric specifications to estimate the effect of political connection. Each observation represents a connection between a close-election top-two candidate and a connected firm's director through a specific university program for a given election year. The dependent variable is a connected firm's cumulated abnormal return (*CAR*) in a window around the election day. We thus combine the strength of event studies with RDD to reduce market noses in stock returns. The treatment variable is an indicator for whether a firm is connected to the winner in a close race.

Following Lee and Lemieux (2010), the first specification that we mainly use is an OLS regression of the outcome variable (*CAR*) on the treatment variable (*WinLose*), controlling for the vote shares of elected politicians and defeated politicians, where the sample is limited to all races with a vote margin smaller than 5%. That is, we obtain the OLS estimate $\hat{\beta}$ in the following equation, where VS_i stands for vote share:

$$CAR_i = \beta WinLose_i + \delta_W VS_i \mathbf{1}_{\{VS_i \geq 50\%\}} + \delta_L VS_i \mathbf{1}_{\{VS_i < 50\%\}} + \varepsilon_i.$$

The treatment variable *WinLose* is an indicator that is equal to one if a firm is connected to the winner and to zero if a firm is connected to the loser in a close election. Standard errors are calculated from the OLS regression, and are clustered at the politician level for each election. In our robustness checks, we also include a cubic polynomial of the vote shares, as well as other levels of clustering.

We also perform robustness checks using nonparametric regressions of the outcome variable on the treatment variable on two separate subsamples, of elected politicians and of

[6] A more sophisticated study may report $35/50% = $70, assuming market's prior at 50%. Without knowledge of the market's belief, no event study could estimate the correct value of $100.

runners-up. Predictions of the outcome variable are calculated at the threshold of 50% for each sample, and their difference is reported. Technically, we run nonparametric local (cubic) polynomial regressions of the equation:

$$CAR_i = F(VoteShare_i) + \varepsilon_i$$

on the subsample where $VoteShare_i < 50\%$ to estimate the function $\hat{F}_-(.)$ and on the subsample where $VoteShare_i > 50\%$ to obtain $\hat{F}_+(.)$. The estimated effect is calculated as $\hat{F}_+(50\%) - \hat{F}_-(50\%)$.[7]

Our connections based on all pairs of classmates might raise doubts about the realistic nature of those connections, as in real life most people have only a small number of friends even among classmates (see, for instance, Leider et al. 2009). Yet classmate connection levels should not be a concern to the significance of our results. The measurement errors in this case imply that the effect of real friendships is nuanced by many non-friends classmate connections, thus produces an attenuation bias that reduces the absolute size of the estimate and its statistical significance. The effect of real friendships can thus be even larger than those found in this paper. On the other hand, classmate connections can be primordial in the development of relationships after college or graduate school by providing the conditions for common communication and mutual trust as well as common access to the same social network. Former classmates are thus more likely to later develop a strong connection, even if they were not close friends while in college or graduate school. Several recent papers have shown the strength of this measurement of connections in many contexts (e.g., Cohen, Frazzini, Malloy, 2008; Fracassi, 2009; and Nguyen, 2012).

While the links between firms and elected governors are identified as an almost-random treatment in our context, this definition of social network still tolerates the problem of homophily (e.g., McPherson, Smith-Lovin, and Cook, 2001). Future politicians and directors sharing similar characteristics and preferences may have been drawn together at the same university. Decades later, the elected politician may enact policies in favor of these same characteristics, on which the connected firms can profit, without passing through the social

[7] The standard error of this estimate is calculated as the standard error of the difference of two independent variables, $\hat{F}_+(50\%)$ and $\hat{F}_+(50\%)$, as the two subsamples are completely separate from one another. The standard errors for $\hat{F}_+(50\%)$ and $\hat{F}_-(50\%)$ come from nonparametric regressions.

network channel. In a nutshell, unobservable factors could determine these connections, politician's preferences, firms' activities, and stock price reaction to elections. For instance, if a politician and a director went to a university that specializes in military studies, then the election of the former has the potential to affect the latter's firm value through new defense policies, rather than through the social network. Thus, identification problems of the effect in question emerge when certain unobservables influence both the outcomes at the firm level and the explanatory variable of political connection. While the RDD does identify the effect of "political connection" as we define it, this effect may not be the fruit of social network mechanisms but may instead result from common characteristics. Our empirical framework allows for a simple solution. The common, time-invariant characteristics of school cohorts can be captured by school fixed effects. The estimated effect is then identified across years and by individuals who went to more than one school. As reported later, our results are not affected by the inclusion of school fixed effects. Our results are thus robust after controlling for the potential impact of homophily.

In summary, our research design identifies and consistently estimates the WATE of being connected to a candidate to a gubernatorial election, where the effect is averaged with weights over the sample of all politicians who stand a chance of experiencing a close election, and all firms in Compustat.

3. DATA DESCRIPTION

We construct our sample using data from several sources. First, we collect the gubernatorial election results from the Federal Election Committee (FEC) website. For each election, we identify the candidates finishing first (the winner) and second (the loser) and calculate the margin of votes between them. A close election is specified by a margin of votes of less than 5%. As reported in Panel A of Table 1, we identify 35 close gubernatorial elections in the U.S. between 1999 and 2010. The average Win/Loss margin across all elections is 2.70%. Panel B reports characteristic of connected firms in our sample and compares them to firms in the Compustat universe. The sample's firm average market capitalization is $2.98 billion, with a maximum of $259.91 billion and a median of $0.52 billion, which are fairly comparable to average Compustat firms ($2.41 billion, $467.09 billion, and $0.25 billion, respectively). Our average firm has a market-to-book ratio of 3.95 (Tobin's Q of 2.03) and age of 9.90 years, as compared to a market-to-book ratio of 4.79 (Tobin's Q of 2.28) and age of 8.32 years for an average Compustat firm.

[*Insert Table 1 Here*]

Panel C reports the time series of close gubernatorial elections and of connected firms per year. The average annual number of gubernatorial elections is 13.08 (with a maximum of 37, and minimum of 2). The average annual number of close gubernatorial elections is 2.92 (with a maximum of 11, and minimum of 0). Our sample of connected firms includes 63 firms per year, on average, with a maximum of 263 firms, and a minimum of 1 firm. Our sample represents 1.01% of the total number of listed firms and 2.15% of the total market capitalization in the Compustat dataset.

We hand-collect the biographical record of these elections using Marquis *Who's Who* biographies, which contain active and inactive biographies from the *Who's Who* publications. Our scope of search includes biographies in (i) *Who's Who in American Politics*, (ii) *World Almanac of U.S. Politics*, and (iii) *The Almanac of American Politics*. For each candidate, *Who's Who* biographies provide a brief vita, including the candidate's employment history, all undergraduate and graduate degrees attained, the year in which those degrees were awarded, and the awarding institution. Most of the biographies for our sample are available in *Who's Who*. To complete our biographies, we use politicians' archived websites, and other sources on the World Wide Web. We retain entries for which we can positively identify the politician.

Next, we obtain biographical information and past education history for directors and senior company officers from BoardEx of Management Diagnostics Limited. The data details the relational links among board directors and senior company officers for both active and inactive firms by cross-referencing these directors' and officers' employment histories, educational backgrounds, and professional qualifications. In particular, the data contains current and past roles of each official in a company, with start and end date (year), all undergraduate and graduate degrees attained, the year in which those degrees were awarded, and the awarding institution. We restrict our sample to board directors in U.S. publicly listed firms.

We construct our social network measure through educational institutions. We define a political connection as a link between a firm's director and an election candidate who both graduate from the same university program within a year. We thereby match institutions and degrees on *Who's Who* biographies and BoardEx. Following Cohen, Frazzini, and Malloy (2008), we group the degrees into six categories: (i) business school (Master of Business Administration), (ii) medical school, (iii) general graduate (Master of Arts or Master of Science), (iv) Doctor of Philosophy, (v) law school, and (vi) general undergraduate. To identify a politician's alumni

network, we relax the restriction on year of graduation. Finally, we match our data to stock return data from the Center for Research in Security Prices (CRSP).

Panel D reports the distribution of common educational backgrounds of corporate directors and gubernatorial candidates in our sample. Degrees for undergraduate studies seem to be the most important to the connection of directors and politicians: 69.12% of politicians and 86.94% of directors are connected through their undergraduate studies, having graduated from the same school/university within one year. The figures are 16.18% and 4.81% for law school; 5.88% and 6.02% for business school. Doctoral degrees appear to be insignificant in connecting politicians to directors. Only 2.94% of politicians and 1.37% of directors are connected through Ph.D. programs.

4. EMPIRICAL RESULTS

In this section, we report our main empirical results of our regression discontinuity design as well as the results on the impact of political connections on firm value across many sub-samples.

4.1. POLITICAL CONNECTIONS AND FIRM VALUE IN A REGRESSION DISCONTINUITY DESIGN

Table 2 presents our estimation of the impact of political connection on firm value by relating stock price Cumulated Abnormal Returns (CAR) of connected firms around the election day to the win/lose status of the connected politician. Each observation pairs a firm's director to a candidate in a close gubernatorial election, both of whom graduate from the same university program within a year (Cohen, Frazzini, and Malloy, 2008). We calculate CAR for every connected firm during a standard 3-day event period, from day -1 to day +1. The event day (day 0) is the election day reported by the Federal Election Commission, which is always a trading day. We first follow a conventional event study method to calculate the abnormal returns resulting from close elections by assuming a single-factor model with the beta estimated from the pre-event window, and later use other methods of CAR estimation as robustness checks. We exploit the RDD of close elections in which the winning margin is within a 5% vote share. We control for the vote shares separately for winners and losers, as suggested by Lee and Lemieux (2010), to obtain the effect at the exact threshold of 50%.

[*Insert Table 2 Here*]

We find an overall average significant and positive effect of connection to a close election's winner on CARs. Columns 1 and 2 report that firms connected to the winners exhibit

CARs which are 3.23% and 1.77% higher than CARs of firms connected to the losers at the 1% and 3% winning margin, respectively. All the coefficients are statistically significant at the 1% level. Column 3 shows our benchmark specification (vote share margin of 5% or less, controlling separately for winners' and losers' vote shares). We obtain a positive estimate of 1.36%, significant at the 5% level. In regression reported in Columns 4 to 6, we controls for election characteristics (dummy variables for the party, gender, incumbency, Senate/House race) and firm characteristics (market capitalization, Tobin's Q, return on asset, and leverage), respectively. We find positive estimates of 1.63%, 1.48%, and 1.76%, respectively, significant at the 5% level, which are of comparable magnitudes to our estimate in column 3.

If a strong homophily factor pertains in the formation of the school networks that we consider, including fixed effects for educational institutions, however, may substantially affect the main estimate, as discussed in the previous section. Controlling for school fixed effects, column 8 of Table 2 produces an estimate of 1.38%, significant at 1%, which is similar in magnitude to our main estimate in column 3. It implies that network homophily is relatively irrelevant to our treatment.

In columns 7 and 9, we control for the year fixed effect and the industry fixed effect respectively. We obtain positive estimates of 1.25% and 1.54%, significant at the 5% level, which are of similar magnitude and statistical significance to our benchmark's estimate in column 3.

It is worth noting that columns 4 to 10 generate comparable results to those in column 3 after controlling for many other factors, year fixed effect, school fixed effect, and year and industry fixed effect. This outcome is expected from RDD regression framework under which the main estimate should not be affected by "irrelevant covariates."[8] Indeed, when the treatment is comparable to a randomized experiment, any additional control variable must be independent of the treatment, thus its inclusion should not significantly alter the estimate of the treatment effect. Unobservable characteristics of the election year or the industry seem to be irrelevant covariates and thus do not alter much our main estimate. Our main results are not driven by any year-specific or industry-specific unobservables.

Although polls' methods and timing might raise questions about the quality of their predictive power, the existence of pre-election polls might mitigate our results, if they can exactly predict election outcomes. We thus browse all the polls before our close elections and control

[8] In fact, RDD accounts for all observable and unobservable characteristics, as discussed in the appendix.

for poll predictions. Column 10 repeats our main regression, as in column 3, controlling for poll predictions. We obtain an estimate of 1.26% on the WinLose dummy, comparable to the estimate of 1.36% in column 3. When we retain polls with prediction margins of 5% or less, the corresponding sample includes 338 connected firms. We run the same regression and report results in column 11 of Table 2. We find an estimate of 1.84%, significant at the 5% level. Overall, the existence of poll prediction does not affect our RDD results.

The large variation in the cross-sectional distribution of CARs might bias our results. As a check, we exclude all CARs exceeding 30% in absolute value from our sample and re-run our benchmark regression. Column 12 shows an estimate of 1.66%, significant at 1%, which is larger than the estimate of 1.36% in column 3.

In summary, Table 2 provides evidence that firms connected to the winner in a close gubernatorial election between 1999 and 2010, as compared to firms connected to the loser, experience significant gain in firm value. Our regression discontinuity design results are robust and consistent when we control for politicians' characteristics, firm size, election year, industry and school fixed effects. Our estimated average CAR of 1.36% for our sample of U.S. firms appears to be slightly smaller, but comparable in magnitude to Faccio (2006), who reports an average CAR of 1.43% from a cross-country sample of firms experiencing an event of new political connection. Meanwhile, our estimate is significantly smaller in magnitude than the estimate from Goldman, Rocholl, and So (2009), who report a difference in CARs of 8.97% between Republican-connected and Democrat-connected firms following the 2000 U.S. presidential election.

4.2. CANDIDATE CHARACTERISTICS AND THE VALUE OF POLITICAL CONNECTIONS

The previous section provides evidence of an overall positive impact of network-based political connections on firm value. In the following sections, we investigate if this effect varies. Based on prior literature, we advance the following predictions:

Prediction 1: Candidate characteristics may determine the value of political connections.

Prediction 2: In states with stronger institutional checks and balances, firms receive fewer benefits from their state-level political connections.

Prediction 3: Firm with activities in the connected politician's state should benefit more from the connections.

Prediction 4: Firm characteristics may determine the value of political connections.

We will test those predictions on various subsamples along the lines of candidate characteristics, institution quality measures, career backgrounds of politicians, and firm size and activities. We run the benchmark regression in each subsample and compare the estimates. The following subsections detail the corresponding results.

We start by investigating whether the positive impact of political connections varies with the candidates' characteristics. Our identification strategy is based on close gubernatorial elections from 1999 to 2010. As the politicians come from different backgrounds, serve different missions, and wield potentially different forms of influence, we might expect the value of a firm's connection to different politicians to vary. We thus divide our samples into subsamples of firms depending on characteristics of politicians. Table 3 summarizes our results.

[*Insert Table 3 Here*]

We first explore whether a candidate's position as incumbent or challenger in a close election and her prior political experience affect our results by partitioning the sample accordingly. Regression results in columns 1 and 2 show that firms connected to the winner experience significant gain of value, independently of whether the winner is a challenger or an incumbent. However, the effect appears larger for firms connected to incumbents (1.9%) than for firms connected to challengers (1.2%). In column 3, in which we run regression on a sub-sample of firms connected to politicians who are both challengers in close elections (the incumbent might retire for good or move to a federal office), we find an estimate coefficient of 1.46%, significant at the 5% level. This indicates that, in close elections that involve two new candidates, firms connected to the winning challenger experience an increase in firm value of 1.46% in comparison to firms connected to the losing challenger. Connections to the winner of a close election thus enhance firm value.

Our measure of social networks is based on the network between directors and politicians. As non-executive directors and executive directors are supposed to assume different tasks, we repeat our tests in subsamples of connections through non-executive directors and executive directors. We find that, as reported in columns 4 and 5, firms connected to a politician through one of its non-executive directors experience a significant gain of value (1.36%), while the impact is positive but not significant in firms connected to a politician through an executive director.

To investigate whether the value of political connection depends on the politician's party affiliation, we further explore the subsamples of firms connected to the Democrats and the

Republicans, respectively, in columns 6 and 7. In both cases, the estimates are positive (2.01% and 0.18%, respectively) but only statistically significant at the 5% level for a subsample of firms connected to Democratic candidates. This result seems to indicate that connections to a Democratic candidate create more value to firms.

The impact of political connection on firm value may also depend on the importance of the networks. We investigate this direction by checking the estimates across different network sizes. We sort the educational institutions by the number of observations in the sample, as it is important to look at the number of prominent graduates that rise to the top in business and politics, and not just at any graduate from the same year. Intuitively, when a network is better represented in the sample, its links are arguably stronger in Granovetter's (1974) sense, in that each pair shares more common connections. Such a network has a higher measure of network closure, according to Karlan et al. (2009), and is more conducive to agreements that require commitments between pairs in the network. Karlan et al. (2009) show, in contrast, that a low closure network provides better incentives for information sharing. Columns 8 and 9 report estimates of 2.22% and 0.82%, significant at the 5% level, for both subsamples of connections that are below (small network) and above (large network) the median number of observations, respectively. It appears that political connections are valuable in both small and large networks. Consistent with extant literature on social networks (for example, Granovetter, 1974), the value of political connections is greater in smaller networks.

Politicians with or without political and professional experience at the federal level might contribute differently to firm value. We collect information on the positions candidates have held up to election and classify two categories of politicians whose main occupation in the election year was in a public office at federal level or not. Columns 10 and 11 of Table 3 report the benchmark estimates by the corresponding subsamples that distinguish between firms connected to candidates coming from positions at the federal level (for instance, in a senator's office) and others. We find positive estimates of 3.56% and 1.32%, significant at the 5% and 10% levels, respectively. The results indicate that the magnitude of the value of political connections is higher for candidates with federal experience.

In summary, Table 3 shows that our finding—that connections to a politician in a close election induce a significant gain in firm value—appears to be consistent and robust across several subsamples of firms connected to candidates with different characteristics. While the impact of political connections on firm value is generally positive and significant, the magnitude

seems to be larger for firms connected to incumbent candidates, to non-executive directors, to Democratic candidates, and candidates from federal offices.

4.3. STATE'S REGULATION, CORRUPTION, INSTITUTIONAL QUALITY, AND THE VALUE OF POLITICAL CONNECTIONS

Apart from politicians' backgrounds, a state's characteristics might also impact the value of political connections. States with better checks and balances should be associated with lower value of political connections. This is our Prediction 2. Table 4 reports variations on the value of political connections as a function of various state characteristics.

[*Insert Table 4 Here*]

Columns 1 and 2 distinguish between politicians' states having more or less than median regulations. The index of regulation by state is measured for 1999 in Clemson University's Report on Economic Freedom, http://freedom.clemson.edu. This report combines information on labor and environmental regulations and regulations in specific industries such as insurance. As expected, we find a positive estimate, significant at the 1% level, in states with more regulations, where the potential is greater for politicians to grant benefits to connected firms on a discretionary basis. The estimate is still positive, but insignificant for states with a lower level of regulations.

In columns 3 and 4, we use an alternative proxy for the level of state regulations from Heritage Foundation. This variable measures the level of state economic freedom. We classify states into two categories (low vs. high economic freedom) based on the median of this index. We obtain positive estimates of 4.82%, significant at the 5% level, and of 0.68%, insignificant, respectively, for the two sub-samples. The results appear to support our Prediction 2 that the value of political connections is significantly higher in more-regulated states.

In columns 5 and 6, we divide our sample into subsamples according to whether a state's government employment is beyond or below the median national level and re-run our benchmark regression. We find a positive estimate of 3%, significant at the 1% level, and a positive and insignificant estimate, respectively, for these two subsamples. This result indicates that political connections are more valuable to firms in states with more government employment.

Columns 7 to 8 divide states by levels of corruption. The most commonly used measure of state-level corruption comes from Glaeser and Saks (2006), who extract actual conviction data from the Department of Justice's "Report to Congress on the Activities and Operations of the

Public Integrity Section" to form a measure of the ratio of convicted corruption cases by population size, averaged from 1976 to 2002 to remove periodical noises. Results also support our intuition: political connections are more valuable in more corrupt states than in less corrupt states. The effect is clearly stronger in magnitude and statistically significant (1.86%, significant at the 1% level) in more corrupt states, and positive but insignificant in less corrupt states.

As actual conviction cases only amount to a small fraction of real corrupt deals, in columns 9 and 10, we use an alternative measure of corruption based on Saiz and Simonsohn's (2008) approach of "downloading wisdom from online crowds." We use the dataset of all newspapers gathered in Newslibrary.com to search for the word "corruption" close to the state name, then normalize the resulting number of search hits by that for the state name alone. We find that the value of political connections is positive and significant in more corrupt states, while it is non-significant in less corrupt ones. The estimate on more corrupt states is 2.28%, fairly comparable to the estimate of 1.86% from column 7.

While the RDD correctly identifies the value of political connections, it is harder to ascertain that its variation across states is caused by the differences in institutional quality. While we avoid direct reverse causation by using some measures calculated before 2000, the results are still exposed to endogenous selection by unobservables, such as historical or cultural factors, that may cause both institution quality and the value of political connections across states. In columns 11 and 12 we control for this problem by using GCISC, a measure of population concentration around the state capital city in 1970. As shown by Campante and Do (2012), this measure is strongly predictive of state-level corruption across American states (higher concentration around state capital implies better media coverage of state politics and, therefore, less corruption). This measure is highly persistent over time and, arguably, not directly affected by unobservable determinants of corruption. The results from columns 11 and 12 support our prediction. The estimated effect is positive (2.59%) and statistically significant (at the 1% level) among states of lower-than-median population concentration, and positive and insignificant for other states.

In sum, Table 4 provides evidence that the estimated value effect of political connection is of higher magnitude in more corrupt states, in states with more regulations and worse institutions, with a higher level of government employment, and with higher population concentration in its capital. These results support our Prediction 2.

4.4. FIRM CHARACTERISTICS AND THE VALUE OF POLITICAL CONNECTIONS

We now study firm characteristics as potential determinants of the relationship between political connections and firm value, and detail results in Table 5.

[*Insert Table 5 Here*]

Columns 1 and 2 report regression results on two subsamples of firms whose market capitalization is respectively above or below the median level in our sample. The difference between those results indicates that smaller politically connected firms experience greater gain of value when the connected politician wins a gubernatorial election (gain of 1.22% for smaller firms, significant at 10%, as compared with an insignificant effect among larger firms.) Put differently, political connections are more important for small firms. Larger firms may be connected to many politicians, and the financial benefit of connection to one more politician may only represent a small fraction of the firm's value; hence, for larger firms, the effect should be smaller.

Another potential benefit of political connections is easier access to finance, as shown by Khwaja and Mian (2005). We test this conjecture by investigating whether the value of political connection is associated with a firm's dependence on external finance. We construct Rajan and Zingales's (1998) measure of dependence on external finance by 3-digit SIC industries as the industry average of (CapEx – Cashflow from Operations)/CapEx, then divide our sample into industries with above and below median scores. Columns 3 and 4 of Table 5 report our standard regression results on these two sub-samples. Connected firms relying more on external finance exhibit a coefficient on the *WinLose* dummy of 1.56% and significant at the 5% level; in contrast, for connected firms with less dependence on external finance, the estimated effect is positive but insignificant at conventional levels. Firms that are financially independent seem not to be affected after election results.

The estimated effect appears to be particularly strong when determinants are interacted. For example, columns 5 and 6 show that small connected firms in more corrupt states experience more positive stock price reaction than do large firms in more corrupt states. The estimates are 2.95%, significant at the 1% level, and 0.54%, insignificant, respectively. This result supports our Prediction 2.

The benefits of political connections at the state level might be larger for a firm with important operations in a state. A more direct test of this conjecture should be based on the firm activities at the state level. Unfortunately, systematic data on firm activities by state and year, measured either by sales or investment, are unavailable. We surmount this difficulty by providing

a new measure of firm activities by state and year. We follow Saiz and Simonsohn's (2008) idea of "downloading wisdom" by searching each company's name through local newspapers in the connected politician's state within each year, using Newslibrary.com; we then normalize the number of search hits on firms by the search hits for the neutral keyword "September" across the same set of newspapers. The resulting hit rate is used as a proxy of a firm's activities within a state in a year before an election. We run our regressions on subsamples of connected firms without and with some state-level activities as reported in columns 7 and 8. We find that firms connected to the winner with some state-level activities prior to the election enjoy positive and significant stock price reaction over firms connected to the loser with no state-level activities prior to the election. The WinLose coefficients are 1.46%, significant at the 5% level, and 0.72%, insignificant, respectively.

Our results show that social-network based political connections significantly enhance firm value. One might ask if and how investors are aware of these connections. Note that our framework does not require that all investors know about the connection. Reaction from a limited number of interested investors might be sufficient to drive our results. To put it differently, we may under-estimate the true impact of political connections. As further evidence of the interest from investors on close elections, we divide our sample into two subsamples of firms with below- and above-zero abnormal trading activity around the election day, following Campbell and Wasley's (1996) approach, and re-run our benchmark regression. Results are reported in columns 9 and 10. In terms of CARs, firms with a positive abnormal trading activity that are connected to winners outperform firms with a positive abnormal trading activity that are connected to losers by 2.14% surrounding the election window. The impact on firms with no abnormal trading activity is insignificant.

In summary, the examination of firm characteristics, as shown in Table 5, provides further evidence that certain firms benefit from political connections more than others. The evidence provides support to our Prediction 3 and Prediction 4.

5. CHANNELS, MECHANISMS, AND INTERPRETATIONS OF THE RESULTS

To the best of our knowledge, our paper is among the first to study the value of political connection at local (state) levels. Our primary objective is not to study a concrete channel that explains the value impact of political connections, but to focus on an identification strategy to establish robust results and to provide evidence that political connections do change firm behavior. Our understanding is that one cannot provide exhaustive answer to these questions.

This Section will thus discuss the question of the channels in the literature and in our context, with further evidence.

5.1. THE VALUE OF POLITICAL CONNECTIONS: THE CHANNELS

As discuss in Section 1, prior literature already provide several channels and mechanisms that make political connections valuable to firms, with each paper focusing on one channel. For example, Faccio, Masulis, and McConnell (2006) provide evidence that politically connected firms have preferential financing in that they are more likely to receive financial bailouts. A low or free cost of financing will certainly reduce a firm's cost of capital and thus increases firm value. Goldman, Rocholl, and So (2008) show that S&P500 firms that are politically connected to the winning party in a House, Senate or Presidential election are more likely to experience an increase in government procurement contracts.

In our paper, we indirectly investigate several channels that might explain our finding of the significant value of political connection. For example, columns 3 and 4 of Table 5 show that the value of political connections is greater for firms more dependent on external financing (leverage). It is consistent with the argument and evidence from the literature that political connection facilitates corporate financing and create value for firms (Faccio et al, (2006), Fan et al. (2007) etc.).

Corruption at state level seems to be another major channel. Columns 7 to 12 of Table 4 show that, using different proxies for corruption, the value of political connection is positively related to the level of state corruption. This evidence is consistent with well-known political science common view that state and local politics in the U.S. is more corrupted (thus more valuable) than federal politics. Our result indicates that political connections might create value to connected firms through illegal and corrupted ways as well. Local politicians might have more leverage, for example, in handing local contracts to connected firms. We obtain similar results on states that have a high level of regulation which might make connections more crucial in obtaining political favors.

Another piece of evidence in terms of channel from our paper is that columns 9 and 10 from Table 5 show that firms connected to the winner that experience abnormal trading activities surrounding close elections are associated with a significantly higher CAR in comparison to firms connected to the loser. This indicates that a number of investors do pay attention to the election outcomes and trade on connected firms.

5.2. INTERPRETATION OF OUR RESULTS AND FURTHER TESTS OF THE CHANNELS

One might still be skeptical on why stock prices of a connected firm in one state are affected by the outcome of a close gubernatorial election of a connected politician in another state which might be far away. Apparently, such connected firms should not be impacted. Why should these politicians care about currying favors to connected firms outside their states?

To address this question, the best and most direct way is to look at each connected firm's operations, such as sales or the number of the firm's employees in the state where there is a close election of a connected politician. As mentioned in our paper, unfortunately these detailed corporate operations by states are not readily available. We thus need to find robust proxies.

Our paper thus follows Saiz and Simonsohn (2008) approach of calculating the number of times a firms is reported in local newspapers normalized by the number of search hits for the neutral keyword "September" and use it as a proxy for a connected firm's activities in a state. Columns 7 and 8 of Table 5 show that among firms with some activities at state level, firms connected to the winner in a close election are associated with a significantly higher CAR. Political connections are thus more valuable to a connected firm if this firm is headquarter elsewhere but has, for example, a factory, or important sales in a state where the connected politician runs for the gubernatorial election. This proxy could be noisy, but we can improve by exclude common corporate names such as Apple or normalize by the number of citations in the New York Times for example.

One potential alternative that we are trying is to rely on corporate headquarters and test if political connections are more valuable if the close election takes place in the same state of a connected firm's headquarter. The cost to this approach is that the number of observation and the power of the empirical test will significantly be reduced. We will present the results in an improved version of the paper.

Another proxy for corporate activities by state is from a recent paper by Garcia and Norli (2012). Their proxy is the number of times that a state's name is cited in the form 10-K filed with the SEC. This measure appears to be robust in predicting that investment in truly local companies outperforms investment in less local firms. We will present the results in an improved version of the paper.

6. REAL IMPACT OF POLITICAL ON FIRMS

Previous sections provide evidence that political connections create value for connected firms. However, we do not show the channels of this value creation. In this section, we investigate whether political connections enhance firm value through its real impact on corporate behavior and outcomes, starting with investment decisions, operating returns, cash holding, and long-term performance. Although close elections offer quasi-exogenous changes in political connections that allow us to observe many potential effects on the behavior of politically connected firms, we cannot exhaust all potential channels.

6.1 POLITICAL CONNECTIONS AND CORPORATE INVESTMENTS

Political connections might impact corporate behavior. Although we cannot comprehensively provide evidence on every aspect of connected firm, we test this conjecture on one of the most important corporate decisions, which is investment. We run OLS regressions of the change in firm investments among the politically connected firms around close gubernatorial elections in the U.S. between 1999 and 2010 on a WinLose dummy. Firm investing activities in a given year are measured as the sum of a firm's capital expenditure and research and development. Table 6 summarizes our results.

[*Insert Table 6 Here*]

Columns 1 to 7 show respectively the results with windows from one year before to five years after the election year. Columns 1 and 2 report that, in the year before and in the election year, firms connected to the winner show no difference in terms of investments in comparison to firms connected to the loser. This evidence provides support of the randomness of our sample.

Our most interesting finding is that, one year after a close election, as column 3 shows, firms connected to the winners in close elections invest 34.4% more than do firms connected to the losers. The impact is significant at the 1% level. Two years and three years after the election, as reported in columns 4 and 5, the impact on investment is insignificant. Corporate investments significantly decrease in the fourth year, as reported in column 6, and then significantly increase by 42.7% in the fifth year, as reported in column 7. Results from column 6 might be explained by the inherent uncertainty of the following election, while post-election increase in corporate investment in column 7 might happen in the same way as in column 3 when the uncertainty is over.

Overall, results from Table 6 show that political connections impact firm investment level, which is one of the most important corporate decisions. Firms connected to winners in

close gubernatorial elections significantly increase capital investments immediately following the elections (year 1) and in the next election cycle (year 5). Political connections thus wield real impact on corporate decisions, such as investment decisions. Our finding is consistent with cross-country evidence from Julio and Yook (2012) who show that firm-level investment is reduced before and during national election years.

6.2. POLITICAL CONNECTIONS AND OPERATING PERFORMANCE

Prior sections have provided evidence that political connections are valuable to firm value based on short term stock price reactions following election results. In this sub-section, we investigate whether these connections translate into better operating performance. We re-run our benchmark regression with change in operating performance as the dependent variable. Firm operating return on assets is measured as operating income before depreciation normalized by total assets at the start of the year. Results are reported in Table 7.

[*Insert Table 7 Here*]

It appears that connections to the winner of a close gubernatorial election only translate to better operating performance in the medium term. Columns 1 and 2 show that no difference exists in operating performance between firms connected to the winner or the loser of a close election in the year before, and in the year of, election. This evidence provides support of the randomness of our sample.

Columns 3 and 4 exhibit the same results for the first and the second year post-election. In contrast, columns 5 to 7 show that firms connected to the winner start having better operation performance than do firms connected to the loser from the third year following a close election. The impact is not significant in the third year and is statistically significant in the fourth and fifth years. In term of operating income, results from columns 6 and 7 show that connected firms to election winners outperform firms connected to election losers by 25.6% and 33.7% in the in the fourth and fifth years following a close election.

In sum, results from Table 7 indicate that it takes time for political connections to be translated into operating performance following the elections. The explanation might be that politically connected firms might enjoy more favorable business with the government, as reported in Goldman, Rocholl, and So (2008) that ultimately improves post-election operating performance. By contrast, the market might anticipate this impact right after the election and incorporate immediately the information into the share price. This might explain the impact of political connection on stock price that we find in Tables 2 to 5.

6.3. POLITICAL CONNECTIONS AND CORPORATE CASH HOLDING

Cash reserve is considered in the literature as an important indicator of corporate governance. A high level of cash reserve might incite managers to waste corporate resources by practicing empire-building investments (Jensen, 1988). Our data allow us to investigate if political connections impact connected firms' corporate cash reserve following close elections. We run OLS regressions of the change in firm's cash reserve ratio among the politically connected firms around close gubernatorial elections between 1999 and 2010. A firm's cash reserve ratio in a given year is measured as the cash balance normalized by total assets. Table 8 reports our results.

[*Insert Table 8 Here*]

Column 1 shows that in the year before the election year, firms connected to the winner show no difference in terms of investments than do firms connected to the loser. Again, this evidence provides support of the randomness of our sample. Column 2 reports, however, that firms connected to the winner hoard significantly more cash just ahead of the election. As columns 3 and 4 show, during the first two years after a close election, no significant difference in cash holding exists between firms connected to the winner and firms connected to the loser of a close election. In contrast, columns 5 and 6 report estimates of 0.88 and 0.93, respectively, both significant at the 1% level. Thus, firms connected to the winner start hoarding significantly more cash (88% and 93%, respectively) than do firms connected to the loser from year 3 to year 4 following the elections. Five years after a close election, when a new electoral cycle begins, again no significant difference in cash holding exists between firms connected to the winner and firms connected to the loser, as column 7 shows.

In sum, results from Table 8 suggest that firms connected to the winner of a close election start hoarding cash three and four years after a close election. One potential explanation might be that they fear uncertainty from another close election happening again in the following election.

6.4. POLITICAL CONNECTIONS AND LONG TERM PERFORMANCE

Tables 2 to 5 report evidence that political connections are valuable to firm value based on post-election short-term stock price reactions. In this sub-section, we investigate whether political connections wield the same impact on long-term stock performance. We re-run our benchmark regression with change in long-term stock performance as the dependent variable. Raw stock returns are cumulated over various time horizons, from six months before to five years after the election year. Results are reported in Table 9.

[*Insert Table 9 Here*]

Columns 1 to 3 show insignificant impact of political connections on stock price performance six month before, and one year and two years following, close elections, respectively. However, over the period of three years after election, stock returns' of connected firms to the winner outperform stock returns' of firms connected to the loser by 7.23% (significant at the 5% level). After four and five years, the impact is again insignificant.

In sum, Table 9 highlights some influence of political connections on long-term stock returns. However, the impact is only most significant for a period of three years after the elections.

7. ALTERNATIVE SPECIFICATIONS AND ROBUSTNESS CHECKS

7.1. ALTERNATIVE SPECIFICATIONS OF THE EVENT STUDY

The focus of our analysis is on the three-day event window, from -1 to +1. As this event window specification is simply one among several possibilities, we reproduce our main result using two alternative windows (-2 to +2), and (0 to +2). In both cases we obtain sensibly similar results.

In our paper, cumulated abnormal returns are estimated based on the one-factor market model around the election day (Day 0). The market model is estimated using daily data over a 255-day (-315,-61) period. As a further check, we calculate the CARs using different methods, including the cumulative daily stock (raw) returns, Fama-French's three-factor model (Fama and French, 1993), and the four-factor model (Carhart, 1997). We then use these CARs in our RDD regressions, as in Table 2. We find estimates mostly similar to those reported in Table 2, either including or excluding school fixed effects. Results are available upon request.

7.2. NONPARAMETRIC TESTS

We further test the robustness of our result with nonparametric estimations, as described in section 2, using local cubic polynomial regressions, Gaussian kernels and a bandwidth of 0.005. We find an estimated effect of 1.64%, significant at 1%. Figures 1A and 1B report the plots with 95%-confidence intervals, respectively with and without the bins containing observations, and with clear markers of bins above and below the threshold. They visualize the outcome variable, CAR(-1,+1), estimated as a nonparametric function of vote share, where each half of the graph represents the fitted function of vote shares greater or less than 50% (i.e. for elected or defeated politicians, respectively). The bands represent confidence intervals at 95%.

[*Insert Figures 1A and 1B Here*]

We see a large gap at exactly 50% of vote share. Furthermore, visual evidence of an inverted "Z" shape of CAR with respect to vote share can be seen: as vote share increases around 50%, CAR first decreases, then jumps sharply at the threshold of 50%, and then decreases again. According to Cuñat, Gine, and Guadalupe's (2012) event-based explanation, this Z shape is predictable in a model where the market internalizes available information before election and anticipates the gap at 50% if the prior probabilities of winning or losing are markedly different from 50%.

However, the robustness of the Z shape depends on the relatively strong hypothesis that no confounding factors can possibly bias the non-parametric estimation in the whole range of vote shares between 48.5% and 52.5%. This hypothesis is not consistent with the further increase at around 52% vote share in the two figures. Such increase is likely due to cross-sectional heterogeneities, coming from innate characteristics of elections with results at the level of 52%-48%, in traditional event studies, such heterogeneities could only be dealt with by controlling for observable characteristics. In contrast, RDD identification holds on the cross-section of stocks, and thus does not require the strong hypothesis of no confounding factors.

The RDD results can be sensitive to the choice of nonparametric specification, most importantly in terms of the bandwidth chosen in the nonparametric regression (Imbens and Kalyanaraman, 2012). We choose a prudent approach in using a wide range of bandwidths in our nonparametric estimation procedure. The results are shown in Figure 2.

[*Insert Figure 2 Here*]

The estimated effect remains stable, and always significant at 5%, across all choices of bandwidth. For our benchmark choice of 0.005, the effect is 1.64%; it slowly decreases towards 1.37% for very large bandwidths, i.e. almost identical to the parametric results. For bandwidths smaller than 0.005, the estimate becomes noisier, but also much stronger. In sum, Figure 2 clearly confirms the result that firms make significant gains in value following the elections of their connected governors.

7.3. CHECKS OF RANDOMNESS

As part of our regression discontinuity design, we check the near-randomness of winning or losing a close election induced by close elections for U.S. Senate and Congress between 1999 and 2010, as highlighted by Lee (2008), and report supporting results in Table 10. Each column serves to show that a dependent variable's distribution is continuous at the cutoff point of 50%

vote share. These dependent variables are those used as control variable in Tables 1 to 5 in the main text.

[*Insert Table 10 Here*]

Panel A of Table 10 shows results for politicians' characteristics, such as gender, age, incumbency, poll win margin, and party affiliation. We do not find any significant relationship between politicians' characteristics and the win/loss dummy.

Panel B of Table 10 reports regressions of director characteristics such as age, gender, and executive/nonexecutive role on the WinLose dummy. Similar to the results from Panel A, none of the regressions in Panel B provides significant estimates.

Panel C of Table 10 shows regressions of state characteristics we have used in previous tables, such as regulation, economic freedom, government employment, and corruption on the win/loss dummy. We do not find any statistically significant estimates.

Panel D exhibits regression results of different firm characteristics we have used in previous tables, such as firm size, leverage, and Tobin's Q on the WinLose dummy. Again, none of them provide significant estimates.

In summary, our randomness robustness checks show that our results are found only in specifications where the treatment matters, and not in tests with irrelevant event windows or irrelevant vote share thresholds. Consequently, political connection must be the causal factor behind these results.

8. CONCLUSIONS

This paper investigates the impact of social network-based political connection on firm value. We use the Regression Discontinuity Design (RDD), a method that avoids endogeneity problems and errors in market beliefs, to identify the connection to a politician elected to be state's governor in the U.S. in a closely contested race. The estimate of the Weighted Average Treatment Effect (WATE) during the period 1999 to 2010 shows an average positive and significant cumulative abnormal return of 1.36% surrounding the election date. The results are robust to various specifications, parametric and nonparametric, throughout different measures of outcome variables, with different definitions of social network, and across many subsamples. We also find that political connections are more valuable in a state with a higher level of regulation and corruption, in smaller firms, and in firms dependent on external finance. Firms connected to

election winners invest significantly more, earn better operating performance, hold more cash, and enjoy better long-term stock performance than do firms connected to the losers following the elections.

Our contribution to finance literature is threefold. First, we propose a new approach to measure political connections based on social networks of candidates to governorship and directors of listed firms. This approach allows us to have a relatively sizable sample of U.S. firms for our study and to avoid obvious and specific connections. Second, we propose a solution to the identification problem. Our framework deals adequately with both the endogeneity of the connected politician and the selection bias in networks due to homophily, providing a powerful internal validity of the empirical results. Moreover, the estimated effect is a WATE across the sample of all politicians susceptible to experiencing a close election, and across sampled firms, which are comparable to Compustat's universe. The findings are therefore also externally valid. That is, it is possible to generalize the conclusions to the population of all firms and politicians. Our third contribution is the finding of a consistent positive impact of political connections on firm value in the U.S. This result complements international evidence of the value of political connection from the existing literature (e.g., Fisman, 2001; Faccio, 2006; Faccio et al 2006), and enrich evidence from the U.S. (e.g. Goldman, Rocholl, and So, 2009). Our result is also consistent with recent evidence from Do et al. (2012) who find that firms lost benefits when the connected politician moves away from state politics, and who conjecture that political connections at local level should be very valuable.

Overall, our study identifies the value of political connections through social networks in the United States and uncovers its variation across different states and firms. We provide evidence that political connections at the state level particularly enhance firm value.

REFERENCES

Allen, F., Babus, A. 2009. Networks in finance, in *The Network Challenge*, ed. P. Kleindorfer and J. Wind, Philadelphia, PA: Wharton School Publishing, 367-82.

Barber, B., D. Palmer, J. Wallace. 1995. Determinants of conglomerate and predatory acquisitions: Evidence from the 1960s. *Journal of Corporate Finance* 1, 283-318.

Barber, B., D. Palmer. 2001. Challengers, elites, and owning families: A social class theory of corporate acquisitions in the 1960s. *Administrative Science Quarterly* 46, 87-120.

Bertrand, M., Kramarz, F., Schoar, A. Thesmar, D. 2008. Politicians, firms and the political business cycle: evidence from France. Unpublished paper.

Blanes i Vidal, J., Draca, M., Fons-Rosen, C. *forthcoming.* Revolving door lobbyists. *American Economic Review.*

Boubakri, N., Cosset, J., Saffar, W. 2009. Politically connected firms: an international event study. Unpublished paper.

Bunkanwanicha, P., Wiwattanakantang, Y. 2009. Big business owners in politics. *Review of Financial Studies* 22(6), 2133-68.

Campbell, C., Wasley, C. 1996. Measuring Abnormal Daily Trading Volume for Samples of NYSE/ASE and Nasdaq Securities Using Parametric and Nonparametric Test Statistics. *Review of Quantitative and Finance and Accounting* 6(3), 309-326.

Campante, F. R., Do, Q.-A. 2012. Isolated Capital Cities, Accountability and Corruption: Evidence from US States. Unpublished Paper.

Carhart, M. 1997. On persistence in mutual fund performance. *Journal of Finance* 52 (1), 57-82.

Chava, S., Roberts, M. 2008. How does financing impact investment? The role of debt covenants. *Journal of Finance* 63(5), 2085-121.

Claessens, S. Feijen, E. Laeven, L. 2008. Political connections and preferential access to finance: the role of campaign contributions. *Journal of Financial Economics* 88(3), 554-80.

Cohen, L. Frazzini, **A. Malloy, C.** 2008. The small world of investing: board connections and mutual funds returns. *Journal of Political Economy* 116(5), 951-79.

Cooper, M. J., Gulen, H., Ovtchinnikov, A.V. 2010. Corporate political contributions and stock returns. Journal of Finance 65(2), 687-724.

Cuñat, V., Gine, M., Guadalupe, **M.** 2012. The vote is cast: the effect of corporate governance on shareholder value. *Journal of Finance* 67 (5), 1943-1977.

Do, Q.-A., Lee, Y., Nguyen, B. D., Nguyen, K. 2012. Out of sight, out of mind: the value of political connections in social networks. Unpublished working paper.

Dinç, I. 2005**.** Politicians and banks: political influences on government-owned banks in emerging markets. *Journal of Financial Economics* 77(2), 453-79.

Faccio, M. 2006. Politically connected firms. *The American Economic Review* 96(1), 369-86.

Faccio, M., Masulis, R., McConnell. **J.** 2006. Political connections and corporate bailouts. *Journal of Finance* 61(6), 2597-635.

Fama, E. F., French, K. R.1993. Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics* 33(1), 3-56.

Fan, J. P.H., Wong, T. J., Zhang, **T.** 2007. Politically connected CEOs, corporate governance, and post-IPO performance of China's newly partially privatized firms. *Journal of Financial Economics* 84(2), 330-57.

Ferguson, T., Voth, H. 2008. Betting on Hitler – the value of political connections in Nazi Germany. *Quarterly Journal of Economics* 123(1), 101-37.

Fisman, D., Fisman, R., Galef, J., Khurana, R. 2006. Estimating the value of connections to Vice-President Cheney. Unpublished paper.

Fisman, R. Estimating the value of political connections. 2001. *The American Economic Review* 91(4), 1095-102.

Fracassi, C. 2009. Corporate finance policies and social networks. Unpublished paper.

Francis, B., Hasan, I., Sun, X. 2009. Political connections and the process of going public: Evidence from China. *Journal of International Money and Finance* 28(4), 696-719.

Garcia, D., Norli, O. 2012. Geographic dispersion and stock returns. *Journal of Financial Economics* 106(3), 547-565.

Giving USA Foundation. *Giving USA 2011: The Annual Report on Philanthropy for the Year 2010*, 2011. Chicago: Giving USA Foundation.

Glaeser, E., Saks, R. 2006. Corruption in America. *Journal of Public Economics* 90(6-7), 1053-72.

Goldman, E., Rocholl, J., So, J. 2008. Political connections and the allocation of procurement contracts. Unpublished paper.

Goldman, E., Rocholl, J., So, J. 2009. Do politically connected boards affect firm value?" *Review of Financial Studies*, 22(6), 2331-60.

Granovetter, M. 1974. *Getting a Job: a Study of Contacts and Careers.* Cambridge, Mass.: Harvard University Press.

Hochberg, Y., A. Ljungqvist, Y. Lu. 2007. Whom you know matters: Venture capital networks and investment performance. *Journal of Finance* 62 251-301.

Hochberg, Y., A. Ljungqvist, Y. Lu. 2010. Networking as a Barrier to Entry and the Competitive Supply of Venture Capital. *Journal of Finance* 65 829-859.

Imai, M., Shelton, C. 2010. Elections and political risk: new evidence from political Markets in Taiwan. Unpublished paper.

Imbens, G., Kalyanaraman, K. 2012. Optimal bandwidth choice for the regression discontinuity estimator. Review of Economic Studies 79(3) 933-959.

Jackson, M. 2009. *Social and Economic Networks.* Princeton, New Jersey: Princeton University Press.

Jayachandran, S. 2006. The Jeffords Effect. *Journal of Law and Economics* 49(2), 397-425.

Jensen, M. C. 1988. Agency costs of free cash flow, corporate finance, and the market for takeovers. *American Economic Review* 76, 323-329.

Johnson, S. Mitton, T. 2003. Cronyism and capital controls: evidence from Malaysia. *Journal of Financial Economics* 67(2), 351-82.

Julio, B. Yook Y. 2012. Political uncertainty and corporate investment cycles. *Journal of Finance*, 67(1), 45-84.

Karlan, D., Mobius, M., Rosenblat, T., Szeidl, A. 2009. Trust and social collateral. *Quarterly Journal of Economics* 124(3), 1307-61.

Kaufman, D., Kraay, A., Mastruzzi, M. 2011. The Worldwide Governance Indicators (WGI): 1996-2010. Unpublished paper, 2011.

Kerr, W., Lerner, J., Schoar, A. 2010. The consequences of entrepreneurial finance: a regression discontinuity analysis. Unpublished paper.

Khwaja, A. I., and Mian, A. 2005. Do lenders favor politically connected firms? Rent provision in an emerging financial market. *Quarterly Journal of Economics* 120(4), 1371-411.

Knight, B. 2007. Are policy platforms capitalized into equity prices? Evidence from the Bush/Gore 2000 Presidential Election. *Journal of Public Economics* 91(1-2) 389-409.

Kuhnen, C. M., 2009. Business networks, corporate governance and contracting in the mutual fund industry. *Journal of Finance* 64(5) 2185-2220.

Lee, D. S. 2008. Randomized experiments from non-random selection in U.S. House elections. *Journal of Econometrics* 142(2), 675-97.

Lee, D. S., Lemieux, T. 2010. Regression discontinuity designs in economics. *Journal of Economic Literature* 48(2), 281-355.

Leider, S., Möbius, M., Rosenblat, T., Do, Q.-A. 2009. Directed altruism and enforced reciprocity in social networks. *Quarterly Journal of Economics* 124(4), 1815-51.

Leuz, C., Oberholzer-Gee, F. 2006. Political relationships, global financing, and corporate transparency: Evidence from Indonesia. *Journal of Financial Economics* 81(2), 411-39.

Li, H., Meng, L., Wang, Q., Zhou, L.-A. 2008. Political connections, financing and firm performance: Evidence from Chinese private firms. *Journal of Development Economics*, 87(2), 283-99.

Mattozzi, A. 2008. Can we insure against political uncertainty? Evidence from the U.S. Stock Market. *Public Choice* 137(1-2), 43-55.

McPherson, M., Smith-Lovin, L., Cook, J. 2001. Birds of a feather: homophily in social networks. *Annual Review of Sociology* 27, 415-44.

Nguyen, B. D. 2012. Does the rolodex matter? Corporate elite's small world and the effectiveness of boards of directors. *Management Science* 58 (2), 236-252.

Rajan, R. G., Zingales, L. 1998. Financial dependence and growth. *American Economic Review* 88(3), 559-86.

Roberts, B. E. 1990. A dead senator tells no lies: seniority and the distribution of federal benefits. *American Journal of Political Science* 34(1), 31-58.

Roberts, M. R., Whited, T. M. 2010. Endogeneity in empirical corporate finance. *Handbook of the Economics of Finance* Vol. 2, 1-98.

Saiz, A., Simonsohn, U. 2008. Downloading wisdom from online crowds. Unpublished paper.

Schmidt, B. 2008. Costs and benefits of "friendly" boards during mergers and acquisitions. Working paper, University of Southern California.

Snowberg, E., Wolfers, J., Zitzewitz, E. 2007. Partisan impacts on the economy: evidence from prediction markets and close elections. *Quarterly Journal of Economics* 122(2), 807-29.

Snowberg, E., Wolfers, J., Zitzewitz, E. 2008. How prediction markets can save event studies. Unpublished paper.

ECONOMETRIC APPENDIX

As shown by Lee and Lemieux (2010), suppose that the cumulative abnormal returns averaged over firms connected to a candidate *i*, CAR_i, is a function of the treatment variable, namely win/lose status, all observable characteristics W_i as well as unobservables U_i. The vote share of each candidate is also a function of W_i and unobservables V_i (while we assume linearity for simplicity, the results are much more general):

$$CAR_i = WinLose_{\ i}\beta + W_{\ i}\gamma + U_i,$$
$$VoteShare_i = W_i\delta + V_i.$$

Assume that conditional on W and U, the density of V is continuous. This assumption amounts to say that each candidate cannot fully determine the exact vote share (partial influence on vote share is still allowed.) Therefore $f_{VoteShare|W,U}(x|W,U)$, the probability density of vote share conditional on W and U, is continuous. Then the joint distribution of W and U conditional on vote share is also continuous in vote share, since:

$$\Pr[W = w, U = u|VoteShare = x] = f_{VoteShare|W,U}(x|W,U)\frac{\Pr[W = w, U = u]}{f_{VoteShare}(x)}$$

Because of this continuity, all observed and unobserved predetermined characteristics will have identical distributions on either side of the threshold $VoteShare = 50\%$:

$$\lim_{x\downarrow 50\%} \Pr[W = w, U = u|VoteShare = x] = \lim_{x\uparrow 50\%} \Pr[W = w, U = u|VoteShare = x]$$

We can thus define and estimate the treatment effect as:

$$\beta_{RDD} \overset{\text{def}}{=} \lim_{VoteShare\downarrow 50\%} E(CAR_i|Win) - \lim_{VoteShare\uparrow 50\%} E(CAR_i|Lose)$$
$$= E(CAR_i(Win) - CAR_i(Lose)|VoteShare = 50\%).$$

It can be estimated by approximating CAR_i from both sides of the 50% threshold of vote share. This procedure controls for both observable and unobservable characteristics, using the observed vote share, not the vote share predicted by polls or markets (the observable part.)

Moreover, if we let the effect be heterogeneous across observations, i.e., $\beta(W_i, U_i)$ with W_i representing all observable and unobservable characteristics of each observation *i*, then the estimate can be rewritten as follows:

$$\beta_{RDD} = \int \beta(W,U)\frac{f(50\%|W,U)}{f(50\%)}dG(W,U),$$

where $G(W,U)$ is the cumulative joint distribution of *(W,U)*, and the weight $\frac{f(50\%|W,U)}{f(50\%)}$ represents the ex-ante likelihood of the characteristics *(W,U)* to produce a close election. β_{RDD} is thus a Weighted Average Treatment Effect across all possible observations.

Figure 1A

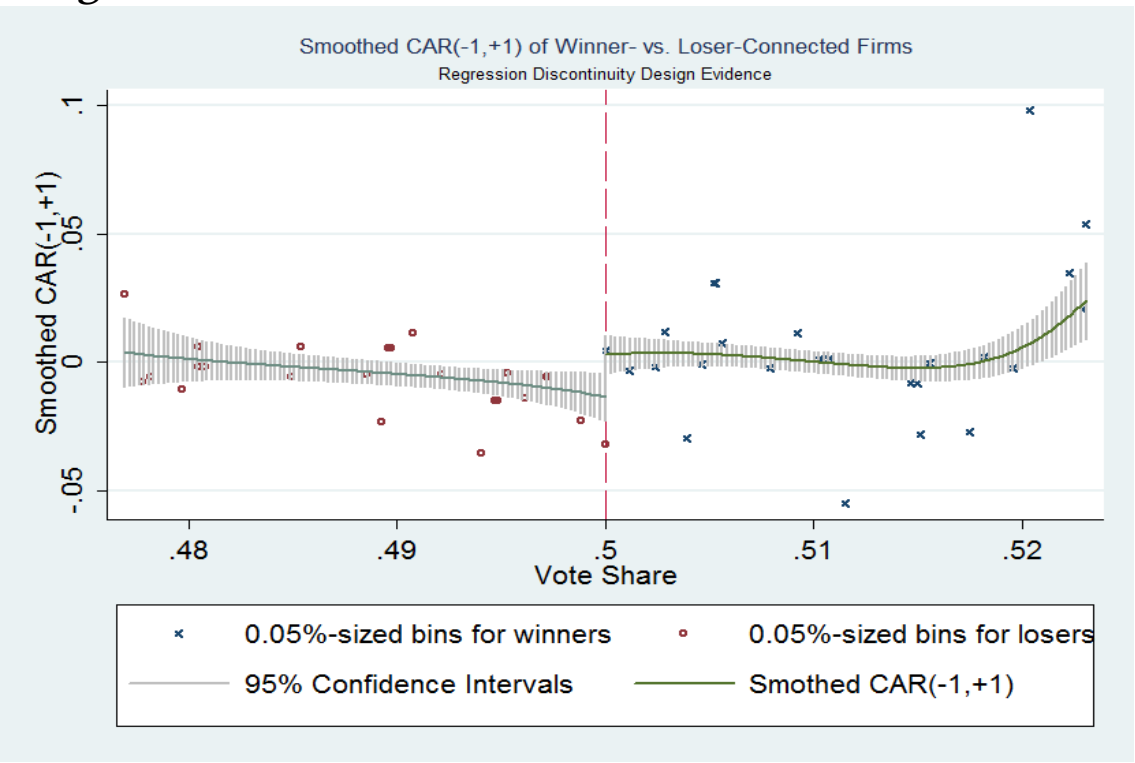


Figure 1B

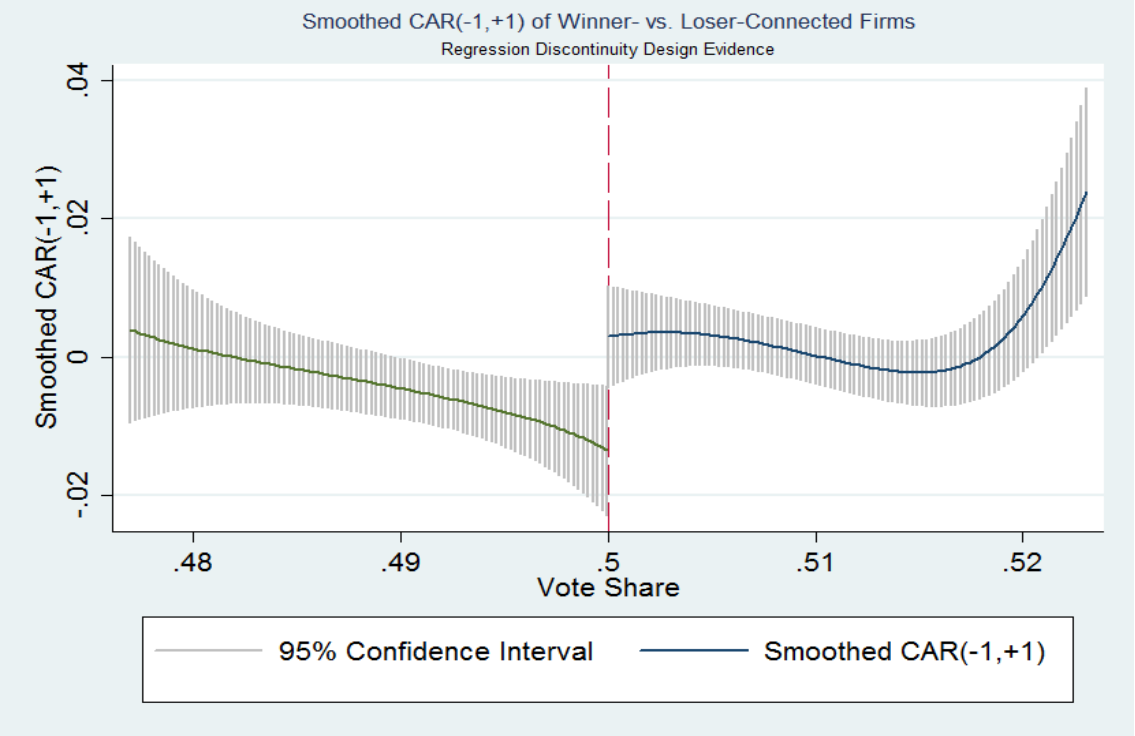


Figure 2

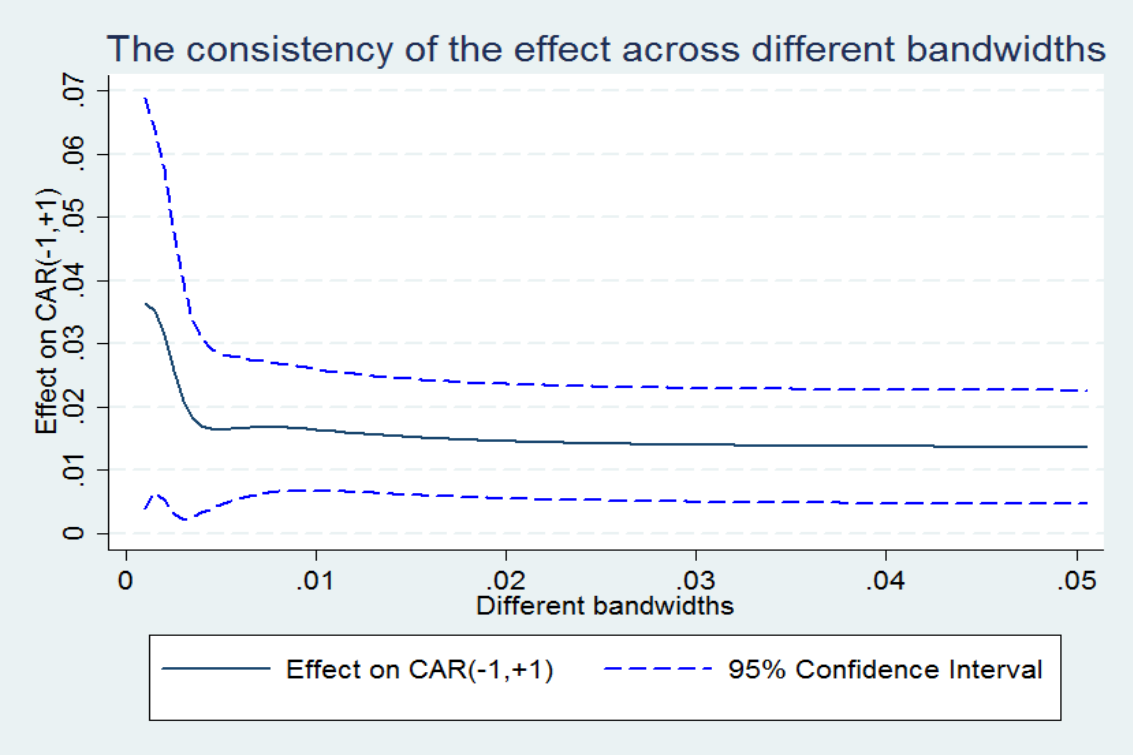

The consistency of the effect across different bandwidths
Effect on CAR(-1,+1)
0
.01
.02
.03
.04
.05
.06
.07
0
.01
.02
.03
.04
.05
Different bandwidths
Effect on CAR(-1,+1)
95% Confidence Interval

Table 1: Descriptive Statistics

This table reports the descriptive statistics for our sample. Panel A shows the distribution of close gubernatorial elections at 5% vote margin by election year. Panel B shows characteristics of connected firms in our sample. We define a political connection as a link between a firm's director and an election candidate who graduate from the same university program within a year. The market value of equity is the firm's market capitalization (in millions) measured at the fiscal year end. Common Equity is the firm's book value of equity (in millions). Market-to-Book Ratio is the ratio of the firm's market value of equity to book value of equity. Capital Expenditure is the firm's capital expenditure (in millions). Age is the firm's age. Leverage is the ratio of total debt to total assets. Tobin's Q is the ratio of the sum of book value of total assets and market value of equity less book value of stockholders' common equity to total assets. Payout is the sum of dividends paid and shares repurchased (in millions). Tangibility is the ratio of net property, plant, and equipment to total assets. ROA is the ratio of operating income before depreciation to start-of-period total assets. R&D is the ratio of the firm's research and development expenditure to start-of-period total assets. Cash Reserve Ratio is the ratio of the firm's cash and short-term investments to start-of-the-period total assets. Panel C shows the time-series pattern of elections and firms for our sample. Panel D shows the distribution of degrees and graduation years of politicians and directors in our sample.

A. Close Elections at 5% Vote Margin

Election Year	Number of Elections	Average Margin
1999	1	0.011
2000	3	0.026
2002	11	0.028
2003	1	0.039
2004	4	0.024
2006	3	0.025
2008	1	0.035
2009	1	0.038
2010	10	0.019
	35	0.027

B. Firm Characteristics

	Sample					Compustat Universe				
	Min	Mean	Median	Max	SD	Min	Mean	Median	Maximum	SD
Market Cap (in $million)	7.61	2980.63	515.03	259906.49	16433.43	0.01	2411.79	252.72	467092.88	11123.87
Common Equity (in $million)	2.36	1170.82	201.17	52817.00	4687.69	0.00	1039.54	120.49	224234.30	5554.22
Market-to-Book Ratio	0.18	3.95	2.19	96.08	8.55	0.00	4.79	1.96	7071.35	278.29
Capital Expenditure (in $million)	0.00	113.18	11.17	8620.08	579.87	0.00	147.54	6.66	39260.61	951.27
Age	0.07	9.90	9.37	42.30	6.32	0.00	8.32	7.17	61.71	6.50
Leverage	0.00	0.26	0.22	0.97	0.25	0.00	0.27	0.21	1.00	0.27
Tobin's Q	0.32	2.03	1.47	16.37	1.67	0.10	2.28	1.41	111.51	3.34
Payout (in $million)	0.00	77.10	1.52	2079.58	248.87	-112.08	76.20	0.22	16018.95	463.51
Tangibility	0.00	0.19	0.11	0.88	0.21	0.00	0.22	0.13	0.99	0.23
ROA	-2.31	-0.02	0.03	0.46	0.23	-43.73	-0.06	0.02	6.22	0.48
R&D	0.00	0.13	0.06	0.93	0.17	-0.01	0.12	0.07	7.48	0.20
Cash Reserve Ratio	0.00	0.27	0.18	0.96	0.26	0.00	0.24	0.15	1.00	0.25

C. Time Series (1999-2010)

	Mean	Median	Minimum	Maximum	Q1	Q2	Stdev
Elections per year	13.08	7	2	37	2.75	17.25	14.49
Closed elections per year	2.92	1	0	11	0.75	3.25	3.78
% of elections	21.28	27.15	0.00	50.00	6.25	33.33	16.98
Firms per year	63	24	1	268	7	46	95
% of CRSP common stock universe							
% of stocks	1.01	0.40	0.02	3.96	0.10	1.11	1.43
% of total market value	2.15	0.40	0.00	9.06	0.15	2.19	3.48

D. Distribution of Degrees and Graduation Years

Degree	Politicians	Directors
Business School	5.88	6.02
Graduate	5.88	0.86
Ph.D.	2.94	1.37
Law School	16.18	4.81
Undergraduate	69.12	86.94

Graduation Years	Politicians	Directors
<1950	0	19.77
1950-59	0	0
1960-69	17.65	23.71
1970-79	63.24	46.56
1980-89	17.65	9.79
>=1990	1.46	0.17

Table 2: Political Connections and Firm Value in a Regression Discontinuity Design

This table reports OLS regressions of the Cumulative Abnormal Returns among the politically connected firms around close elections for U.S. governors between 1999 and 2010. A firm is connected to a politician if one of its directors shares the same educational background with a politician. Each observation pairs a firm's director to the winner or the loser in a close election, who furthermore graduates from the same university program within a year (Cohen, Frazzini, and Malloy, 2008). Average abnormal returns are estimated based on the market model around the election day (Day 0). The market model is estimated using daily data over a 255-day (-315,-61) period. The independent variable *WinLose* is an indicator that is equal to one if a firm is connected to the winner and to zero if a firm is connected to the loser in a close election.. A close election is specified by the margin of votes between the top two candidates, with a 5% margin referring to the subsample of elections with less than 5% vote margin. Vote Share (Winners) and Vote Share (Losers) refer to the vote shares of winners and vote shares of losers, respectively. Column 4 controls for dummy variables representing election characteristics (year, state, election turnout of the politician involved, etc.). Column 5 controls for dummy variables representing politicians' characteristics (gender, age, party's affiliation, and election turnout of the politician involved.) Column 6 controls for firm characteristics (market value, Tobin's Q, return on asset, and leverage.) Columns 7, 8, and 9 control, respectively, for year, school, and industry fixed effects. Column 10 controls for pre-election poll prediction. Column 11 includes observations whose poll margin is within 5%. Column 12 excludes observations with CAR of 30% or higher. Standard errors in square brackets are corrected for clustering by politicians in each election. *, **, and *** denote statistical significance at 10%, 5%, and 1%, respectively.

	Dependent Variables: CAR (-1,1)											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Subsample	1% Margin	3% Margin	5% Margin	5% Margin	5% Margin	5% Margin	5% Margin	5% Margin	5% Margin	5% Margin	Poll Margin<=5%	Outliers Excluded
WinLose	0.0323	0.017705	0.0136	0.0163	0.0148	0.0176	0.0125	0.0138	0.0154	0.0126	0.0184	0.0166
	[0.00560]***	[.006478]***	[0.00560]**	[0.00620]**	[0.00605]**	[0.00509]**	[0.00575]**	[0.00429]***	[0.00570]***	[0.00622]**	[0.00711]**	[0.00548]***
Vote Share (Winners) & Vote Share (Losers)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls				Election Controls	Politician Controls	Firm Controls	Year FE	School FE	Industry FE	Poll Prediction		
R-squared	0.026	0.014	0.005	0.040	0.063	0.019	0.017	0.110	0.070	0.005	0.009	0.007
Observations	167	378	586	586	586	525	586	586	571	532	338	583

Table 3: Politicians' Characteristics and the Value of Political Connections

This table reports OLS regressions of the Cumulative Abnormal Returns among the politically connected firms around close elections for U.S. governors between 1999 and 2010. A firm is connected to a politician if one of its directors shares the same educational backgrounds with a politician. Each observation pairs a firm's director to the winner or the loser in a close election, who furthermore graduates from the same university program within a year (Cohen, Frazzini, and Malloy, 2008). Average abnormal returns are estimated based on the market model around the election day (Day 0). The market model is estimated using daily data over a 255-day (-315,-61) period. The independent variable *WinLose* is an indicator that is equal to one if a firm is connected to the winner and to zero if a firm is connected to the loser in a close election. A close election is specified by the margin of votes between the top two candidates being less than 5%. Vote Share (Winners) and Vote Share (Losers) refer to the vote shares of winners and vote shares of losers, respectively. Columns 1 to 7 show, respectively, results on the subsamples of incumbents, challenger candidates, challenger-only election candidates, non-executive directors, executive directors, Democratic candidates, and Republican candidates. Columns 8 to 9 examine subsamples of institutions that are the alma mater of less or more than 32 individuals (sample's median) in the sample. Columns 10 and 11 report regression results on candidates from the federal offices, and not from federal offices, respectively. Standard errors in square brackets are corrected for clustering by politicians in each election. *, **, and *** denote statistical significance at 10%, 5%, and 1%, respectively.

	Dependent Variables: CAR (-1,1)										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Subsample	Incumbent	Challenger	Challenger-only elections	Non-Executive Director	Executive	Democrats	Republicans	Small Networks	Large Networks	From Federal Offices	Not From Federal Offices
WinLose	0.0190	0.0122	0.0146	0.0136	0.00551	0.0201	0.00182	0.0222	0.0082	0.0356	0.0132
	[0.00446]***	[0.00542]**	[0.00601]**	[0.00454]***	[0.0181]	[0.00938]**	[0.00505]	[0.00898]**	[0.00317]**	[0.0143]**	[0.00732]*
Vote Share (Winners) & Vote Share (Losers)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.094	0.003	0.004	0.005	0.020	0.004	0.002	0.009	0.0021	0.022	0.003
Observations	58	528	469	477	109	318	197	336	250	92	436

Table 4: State's Regulation, Corruption, Institution Quality, and the Value of Political Connections

This table reports OLS regressions of the Cumulative Abnormal Returns among the politically connected firms around close governorship elections in the U.S. between 1999 and 2010. Each observation pairs a firm's director to the winner or the loser in a close election, who furthermore graduates from the same university program within a year (Cohen, Frazzini, and Malloy, 2008). Average abnormal returns are estimated based on the market model around the election day (Day 0). The market model is estimated using daily data over a 255-day (-315,-61) period. The independent variable *WinLose* is an indicator that is equal to one if a firm is connected to the winner and to zero if a firm is connected to the loser in a close election. A close election is specified by the margin of votes between the top two candidates being less than 5%. Vote Share (Winners) and Vote Share (Losers) refer to the vote shares of winners and vote shares of losers, respectively. Columns 1 to 12 show, respectively, results on the subsamples of above or below median of the following measures: the index of regulation by state based on Clemson University's Report on Economic Freedom, available at http://freedom.clemson.edu; the index of economic freedom by state from Heritage Foundation; the size of government employment; corruption conviction rate in 2000 (Glaeser and Saks, 2006); corruption news (Saiz and Simonsohn, 2008); and GCISC 1970 score (population concentration around the state capital, Campante and Do, 2012). Standard errors in square brackets are corrected for clustering by politicians in each election. *, **, and *** denote statistical significance at 10%, 5%, and 1%, respectively.

	Dependent Variables: CAR (-1,1)											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Subsample	High Regulation	Low Regulation	Low Economic Freedom 1999	High Economic Freedom 1999	High Government Employment	Low Government Employment	More Corrupt State	Less Corrupt State	More Corruption News	Less Corruption News	Low GCISC	High GCISC
WinLose	0.0100	0.0291	0.0482	0.00684	0.0300	0.000885	0.0186	0.00405	0.0228	-0.0120	0.0259	0.00999
	[0.00380]**	[0.0170]	[0.0193]**	[0.00467]	[0.00779]***	[0.00720]	[0.00548]***	[0.0121]	[0.00746]***	[0.0101]	[0.00595]***	[0.00636]
Vote Share (Winners) & Vote Share (Losers)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.004	0.012	0.023	0.006	0.015	0.011	0.009	0.021	0.010	0.020	0.010	0.007
Observations	428	158	137	449	306	280	319	267	329	257	150	436

Table 5: Firm characteristics and the Value of Political Connections

This table reports the pooled OLS regressions of the Cumulative Abnormal Returns among the politically connected firms around close elections for U.S. governors between 1999 and 2010. Each observation pairs a firm's director to the winner or the loser in a close election, who furthermore graduates from the same university program within a year (Cohen, Frazzini, and Malloy, 2008). Average abnormal returns are estimated based on the market model around the election day (Day 0). The market model is estimated using daily data over a 255-day (-315,-61) period. The independent variable *WinLose* is an indicator that is equal to one if a firm is connected to the winner and to zero if a firm is connected to the loser in a close election. A close election is specified by the margin of votes between the top two candidates being less than 5%. Vote Share (Winners) and Vote Share (Losers) refer to the vote shares of winners and vote shares of losers, respectively. Columns 1 to 4 show, respectively, results on the subsamples of below or above the median of market capitalization and reliance on external finance (Rajan and Zingales, 1998), respectively. Columns 5 and 6 use the subsamples in the cross-section of size (below or above median market capitalization) and corruption index based on conviction rate in 2000 (Glaeser and Saks, 2006). Columns 7 and 8 show, respectively, results on subsamples of firms with no activities or some firm activities in a given state in a given year, measured by the number of times a firms is reported in local newspapers normalized by the number of search hits for the neutral keyword "September" (Saiz and Simonsohn, 2008). Columns 9 and 10 show, respectively, results on subsamples of firms with below and above abnormal trading activity (Campbell and Wasley, 1996). *, **, and *** denote statistical significance at 10%, 5%, and 1%, respectively.

,

	Dependent Variables: CAR (-1,1)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Subsample	Higher Market Cap	Lower Market Cap	Rely on External Finance	Not Rely on External Finance	Lower Market Cap, More Corrupted	Higher Market Cap, More Corrupted	No State-Level Firm Activities Prior to Election	Some State-Level Firm Activities Prior to Election	Abnormal Trading Activity <=0	Abnormal Trading Activity >0
WinLose	0.0163	0.0122	0.0156	0.00694	0.0295	0.00540	0.00719	0.0146	0.00107	0.0214
	[0.0101]	[0.00636]*	[0.00755]**	[0.0101]	[0.00633]***	[0.00620]	[0.0126]	[0.00685]**	[0.00815]	[0.00909]**
Vote Share (Winners) & Vote Share (Losers)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.008	0.016	0.008	0.013	0.013	0.007	0.006	0.007	0.023	0.023
Observations	331	255	441	145	178	141	177	409	288	298

Table 6: Political Connections and Post-Election Corporate Investments

This table reports OLS regressions of the change in firm investing activities among the politically connected firms around close elections for U.S. governors between 1999 and 2010. Each observation pairs a firm's director to the winner or the loser in a close election, who furthermore graduates from the same university program within a year (Cohen, Malloy, and Frazzini, 2008). Firm investing activities in a given year are measured as the sum of a firm's capital expenditure and research and development normalized by property, plant, and equipment (PP&E) in start of the year. The independent variable *WinLose* is an indicator that is equal to one if a firm is connected to the winner and to zero if a firm is connected to the loser in a close election. A close election is specified by the margin of votes between the top two candidates being less than 5%. Vote Share (Winners) and Vote Share (Losers) refer to the vote shares of winners and vote shares of losers, respectively. Columns 1 to 7 show, respectively, the results with windows of one year before to five years after the election year. Standard errors in square brackets are corrected for clustering by politicians in each election. *, **, and *** denote statistical significance at 10%, 5%, and 1%, respectively.

	Dependent Variables: Change in Firm Investing Activities						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Relative Year	(-2,-1)	(-1,0)	(0,1)	(1,2)	(2,3)	(3,4)	(4,5)
WinLose	-0.085	-0.222	0.344	-0.149	0.134	-0.416	0.427
	[0.186]	[0.157]	[0.122]***	[0.169]	[0.085]	[0.211]*	[0.142]***
Vote Share (Winners) & Vote Share (Losers)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	State FE	State FE	State FE	State FE	State FE	State FE	State FE
R-squared	0.072	0.094	0.086	0.113	0.154	0.103	0.217
Observations	445	459	272	234	210	202	177

Table 7: Political Connections and Post-Election Return on Assets

This table reports OLS regressions of the change in firm operating return on assets among the politically connected firms around close elections for U.S. governors between 1999 and 2010. Each observation pairs a firm's director to the winner or the loser in a close election, who furthermore graduates from the same university program within a year (Cohen, Frazzini, and Malloy, 2008). Firm operating return on assets are measured as operating income before depreciation (OIBDP) normalized by total assets in start of the year. The independent variable *WinLose* is an indicator that is equal to one if a firm is connected to the winner and to zero if a firm is connected to the loser in a close election. A close election is specified by the margin of votes between the top two candidates being less than 5%. Vote Share (Winners) and Vote Share (Losers) refer to the vote shares of winners and vote shares of losers, respectively. Columns 1 to 7 show, respectively, the results with windows of one year before to five years after the election year. Standard errors in square brackets are corrected for clustering by politicians in each election. *, **, and *** denote statistical significance at 10%, 5%, and 1%, respectively.

	Dependent Variables: Change in Operating Return on Assets						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Relative Year	(-2,-1)	(-1,0)	(0,1)	(1,2)	(2,3)	(3,4)	(4,5)
WinLose	0.0911 [0.0964]	-0.107 [0.157]	-0.120 [0.204]	-0.155 [0.198]	0.314 [0.370]	0.256 [0.118]**	0.337 [0.125]**
Vote Share (Winners) & Vote Share (Losers)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	State FE	State FE	State FE	State FE	State FE	State FE	State FE
R-squared	0.085	0.091	0.061	0.052	0.117	0.116	0.067
Observations	496	506	350	275	251	238	214

Table 8: Political Connections and Corporate Cash Holding

This table reports OLS regressions of the change in a firm's cash reserve ratio among the politically connected firms around close elections for U.S. governors between 1999 and 2010. Each observation pairs a firm's director to the winner or the loser in a close election, who furthermore graduates from the same university program within a year (Cohen, Frazzini, and Malloy, 2008). The firm's cash reserve ratio in a given year is measured as the cash balance normalized by total assets. The independent variable *WinLose* is an indicator that is equal to one if a firm is connected to the winner and to zero if a firm is connected to the loser in a close election. A close election is specified by the margin of votes between the top two candidates being less than 5%. Vote Share (Winners) and Vote Share (Losers) refer to the vote shares of winners and vote shares of losers, respectively. Columns 1 to 7 show, respectively, the results with windows of one year before to five years after the election year. Standard errors in square brackets are corrected for clustering by politicians in each election. *, **, and *** denote statistical significance at 10%, 5%, and 1%, respectively.

	Dependent Variables: Change in Firm Cash Reserve						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Relative Year	(-2,-1)	(-1,0)	(0,1)	(1,2)	(2,3)	(3,4)	(4,5)
WinLose	0.123	0.382	0.0816	-0.0239	0.880	0.933	-0.836
	[0.126]	[0.186]**	[0.138]	[0.149]	[0.226]***	[0.218]***	[0.957]
Vote Share (Winners) and Vote Share (Losers)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	State FE	State FE	State FE	State FE	State FE	State FE	State FE
R-squared	0.042	0.132	0.080	0.078	0.091	0.045	0.143
Observations	530	547	383	285	260	248	226

Table 9: Political Connections and Long Term Stock Performance

This table reports OLS regressions of the long-run cumulative raw returns among the politically connected firms around close elections for U.S. governors between 1999 and 2010. Each observation pairs a firm's director to the winner or the loser in a close election, who furthermore graduates from the same university program within a year (Cohen, Frazzini, and Malloy, 2008). Raw stock returns are cumulated over various time horizons. The independent variable *WinLose* is an indicator that is equal to one if a firm is connected to the winner and to zero if a firm is connected to the loser in a close election. A close election is specified by the margin of votes between the top two candidates being less than 5%. Vote Share (Winners) and Vote Share (Losers) refer to the vote shares of winners and vote shares of losers, respectively. Columns 1 to 6 show, respectively, the results with windows of six months before to five years after the election year. Standard errors in square brackets are corrected for clustering by politicians in each election. *, **, and *** denote statistical significance at 10%, 5%, and 1%, respectively.

	Dependent Variables: Long-run Cumulative Raw Returns					
	(1)	(2)	(3)	(4)	(5)	(6)
Relative Year	(-6,0)	(1,12)	(1,24)	(1,36)	(1,48)	(1,60)
WinLose	0.0329	0.0116	-0.0137	0.0723	0.0521	-0.0125
	[0.0260]	[0.0287]	[0.0254]	[0.0303]**	[0.0362]	[0.0189]
Vote Share (Winners) & Vote Share (Losers)	Yes	Yes	Yes	Yes	Yes	Yes
Controls	State FE	State FE	State FE	State FE	State FE	State FE
R-squared	0.157	0.198	0.255	0.314	0.377	0.124
Observations	572	553	295	285	254	248

Table 10: RDD Randomness Checks

This table reports robustness checks of the near-randomness of the win/lose treatment induced by close elections for U.S. Senate and Congress between 2000 and 2008. Each observation pairs a firm's director to the winner or the loser in a close election, who furthermore graduates from the same university program within a year (Cohen, Frazzini, and Malloy, 2008). The independent variable *WinLose* is an indicator that is equal to one if a firm is connected to the winner and to zero if a firm is connected to the loser in a close election. A close election is specified by the margin of votes between the top two candidates being less than 5%. Vote Share (Winners) and Vote Share (Losers) refer to the vote shares of winners and vote shares of losers, respectively. Each column serves to show that a dependent variable's distribution is continuous at the cutoff point of 50% vote share. These dependent variables are those used as control variable in Tables 1-5 in the main text. Panel A shows results for politicians' characteristics (gender, age, incumbency, win margin, and party affiliation.) Panel B report results on director characteristics (director age, gender and executive/nonexecutive role, and social network size.) Panel C displays results with state characteristics (regulations, corruptions, etc.). Panel D reports regressions with firm characteristics (financial dependence, size, network size, etc.). Standard errors in square brackets are corrected for clustering by politicians in each election. *, **, and *** denote statistical significance at 10%, 5%, and 1%, respectively.

Panel A: Politician Characteristics

Dependent Variable:	(1) Pol. Gender	(2) Pol. Age	(3) Log(Turnout)	(4) Incumbency	(5) Poll Margin Of Victory	(6) Party Affiliation
WinLose	-0.156	3.617	0.0487	0.131	-0.00173	-1.021
	[0.195]	[3.729]	[0.237]	[0.229]	[0.00911]	[0.688]
Vote Share (Winners) & Vote Share (Losers)	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.086	0.028	0.032	0.037	0.002	0.096
Observations	51	51	51	51	48	51

B. Director Characteristics

Dependent Variable:	(1) Director's Gender	(2) Director's Age	(3) Executive Directorship	(4) Log(Count of Institution)
WinLose	0.0172 [0.0805]	3.751 [2.945]	0.0805 [0.0749]	-0.755 [0.737]
Vote Share (Winners) & Vote Share (Losers)	Yes	Yes	Yes	Yes
R-squared	0.015	0.090	0.011	0.042
Observations	439	433	439	439

C. State Characteristics

Dependent Variable:	(1) Regulation	(2) Economic Freedom	(3) Government Employment	(4) Corruption	(5) Corruption News	(6) GCISC1970
WinLose	0.0743 [0.309]	-0.104 [0.466]	0.000169 [0.00994]	-0.0342 [0.0561]	-5.605 [10.52]	-0.0690 [0.0700]
Vote Share (Winners) & Vote Share (Losers)	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.054	0.066	0.080	0.076	0.115	0.044
Observations	586	586	586	586	572	581

D. Firm Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent Variable:	Market Capitalization	Dependence on External Finance	Log(HQ-Capital Distance)	Firm Activities Prior to Election	Log(Book Value of Equity)	Leverage	Tobin's Q	Cash Reserve Ratio	Log(Payout)	Tangibility
WinLose	0.0337	-0.152	0.554	-0.0437	0.0443	-0.0241	0.111	-0.0254	0.127	0.0282
	[0.344]	[0.194]	[0.380]	[0.0971]	[0.344]	[0.0379]	[0.242]	[0.0548]	[0.453]	[0.0351]
Vote Share (Winners) & Vote Share (Losers)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.013	0.014	0.023	0.004	0.005	0.003	0.004	0.009	0.000	0.001
Observations	586	575	576	586	528	547	552	552	331	531