DISCUSSION PAPER SERIES

DP15141
(v. 2)

POWER, SCRUTINY, AND CONGRESSMEN'S FAVORITISM FOR FRIENDS' FIRM

Quoc-Anh Do, Yen-Teik Lee, Bang Dang Nguyen and Kieu-Trang Nguyen

FINANCIAL ECONOMICS

LABOUR ECONOMICS

PUBLIC ECONOMICS

ISSN 0265-8003

POWER, SCRUTINY, AND CONGRESSMEN'S FAVORITISM FOR FRIENDS' FIRM

Quoc-Anh Do, Yen-Teik Lee, Bang Dang Nguyen and Kieu-Trang Nguyen

Discussion Paper DP15141
First Published 06 August 2020
This Revision 06 August 2020

Centre for Economic Policy Research
33 Great Sutton Street, London EC1V 0DX, UK
Tel: +44 (0)20 7183 8801
www.cepr.org

POWER, SCRUTINY, AND CONGRESSMEN'S FAVORITISM FOR FRIENDS' FIRM

Abstract

Does more political power always lead to more favoritism? The usual affirmative answer overlooks scrutiny's role in shaping the pattern of favoritism over the ladder of power. When attaining higher-powered positions under even stricter scrutiny, politicians may reduce quid-pro-quo favors towards connected firms to preserve their career prospect. Around close Congress elections, we find RDD-based evidence of this adverse effect that a politician's win reduces his former classmates' firms stock value by 2.8%. As predicted, this effect varies by cross-state scrutiny, politicians' power, firms' size and governance, and connection strength. It diminishes as a politician's career concern fades over time.

JEL Classification: D72, D73, D85, G14, G32

Keywords: favoritism, Power, scrutiny, political connection, congressmen, close election, RDD

Quoc-Anh Do - quocanh.do@sciencespo.fr
Sciences Po, Northwestern University and CEPR

Yen-Teik Lee - lee.yenteik@sufe.edu.cn
National University of Singapore

Bang Dang Nguyen - b.nguyen@jbs.cam.ac.uk
University of Cambridge

Kieu-Trang Nguyen - nguyenk@lse.ac.uk
Northwestern University

Acknowledgements
We thank Philippe Aghion, Pat Akey, Alberto Alesina, Santosh Anagol, Oriana Bandiera, Francis Bloch, Morten Bennedsen, Yehning Chen, Davin Chor, Sudipto Dasgupta, Giacomo De Giorgi, Joe Engelberg, Mara Faccio, Cesare Fracassi, Carolyn Friedman, Alfred Galichon, Eitan Goldman, Jarrad Harford, Yannis Ioannides, Ben Jones, Brandon Julio, Sanjeev Goyal, Valentino Larcinese, Samuel Lee, Steven Levitt, Hongbin Li, Paul Malatesta, Kasper Nielsen, Alexei Ovtchinnikov, Raghu Rau, Andrei Shleifer, Kelly Shue, David Smith, Erik Snowberg, David Yermack, and seminar and conference participants for helpful comments, insights and suggestions. We are grateful for Zeng Huaxia, Liu Shouwei, Nguyen Phu Binh, and Lan Lan's outstanding research assistance. Do acknowledges support from the Sim Kee Boon Institute for Financial Economics, Singapore Management University, and from the French National Research Agency's (ANR) "Investissements d'Avenir" grants ANR-11-LABX-0091 (LIEPP) and ANR-11-IDEX-0005-02. All remaining errors are our own.

Power, Scrutiny, and Congressmen's Favoritism for Friends' Firms*

Quoc-Anh Do† Yen-Teik Lee‡ Bang D. Nguyen§ Kieu-Trang Nguyen¶

August 2020

Click here for most recent version

Abstract

Does more political power always lead to more favoritism? The usual affirmative answer overlooks scrutiny's role in shaping the pattern of favoritism over the ladder of power. When attaining higher-powered positions under even stricter scrutiny, politicians may reduce quid-pro-quo favors towards connected firms to preserve their career prospect. Around close Congress elections, we find RDD-based evidence of this adverse effect that a politician's win reduces his former classmates' firms stock value by 2.8%. As predicted, this effect varies by cross-state scrutiny, politicians' power, firms' size and governance, and connection strength. It diminishes as a politician's career concern fades over time.

Keywords: favoritism, power, scrutiny, political connection, congressmen, close election, RDD,

JEL Classification: D72, D73, D85, G14, G32

*We thank Philippe Aghion, Pat Akey, Alberto Alesina, Santosh Anagol, Oriana Bandiera, Francis Bloch, Morten Bennedsen, Yehning Chen, Davin Chor, Sudipto Dasgupta, Giacomo De Giorgi, Joe Engelberg, Mara Faccio, Cesare Fracassi, Carolyn Friedman, Alfred Galichon, Eitan Goldman, Jarrad Harford, Yannis Ioannides, Ben Jones, Brandon Julio, Sanjeev Goyal, Valentino Larcinese, Samuel Lee, Steven Levitt, Hongbin Li, Paul Malatesta, Kasper Nielsen, Alexei Ovtchinnikov, Raghu Rau, Andrei Shleifer, Kelly Shue, David Smith, Erik Snowberg, David Yermack, and seminar and conference participants for helpful comments, insights and suggestions. We are grateful for Zeng Huaxia, Liu Shouwei, Nguyen Phu Binh, and Lan Lan's outstanding research assistance. Do acknowledges support from the Sim Kee Boon Institute for Financial Economics, Singapore Management University, and from the French National Research Agency's (ANR) "Investissements d'Avenir" grants ANR-11-LABX-0091 (LIEPP) and ANR-11-IDEX-0005-02. All remaining errors are our own.

†Northwestern University, Sciences Po, and CEPR. Kellogg School of Management, 2211 Campus Drive, Evanston, IL 60208, USA. Email: quoc-anh.do@kellogg.northwestern.edu.

‡National University of Singapore, NUS Business School. 15 Kent Ridge Drive, Singapore 119245. Email: bizlytk@nus.edu.sg.

§University of Cambridge. Judge Business School, Cambridge CB2 1AG, U.K. Email: b.nguyen@jbs.cam.ac.uk.

¶Northwestern University. Kellogg School of Management, 2211 Campus Drive, Evanston, IL 60208, USA. Email: kieu-trang.nguyen@kellogg.northwestern.edu.

> *"Power tends to corrupt and absolute power corrupts absolutely."*
>
> —Lord Baron Acton (1887)

> *"Because power corrupts, society's demands for moral authority and character increase as the importance of the position increases."*
>
> —*Commonly attributed to* John Adams

1 Introduction

Discussions of politicians' favoritism usually evoke the widely shared view that politicians with more political power tend to give more favor to individuals and groups connected to them. The age-old literature of distributive politics in the U.S. since Lasswell's (1936) *"Politics: Who Gets What, When, How"* has most often described more powerful U.S. congressmen thanks to, say, higher seniority in powerful committees as more likely to deliver funds and projects towards their constituencies and connected interests.[1] This view overlooks the possibility that, in response, existing institutions place stronger checks and scrutiny on more powerful positions, so that they need not produce more favoritism. This aspect of institutional design has already figured among the chief concerns of the Founding Fathers of the United States, as highlighted in the epigraph. In this paper, we elaborate the interplay between power and scrutiny and underline the importance of scrutiny in restraining U.S. congressmen's favoritism towards friends' firms based on evidence from close elections to Congress.

As we take into account the role of scrutiny, it is important to consider politicians' career dynamic, since the key part of democratic checks and balances lies in their concern for reelection.[2] The politician faces the trade-off that giving more quid-pro-quo favor today may endanger his future career prospect.[3] Rising to a position of higher power, but under tighter scrutiny, his decision to

[1] Examples abound in the literature of pork-barrel politics towards congressmen's constituencies, following Ferejohn's (1974) seminal work on the power of congressmen's membership and seniority in public works and appropriation committees, and also Ray (1981), Roberts (1990), Rundquist et al. (1996), Carsey and Rundquist (1999), Levitt and Poterba (1999), Rundquist and Carsey (2002), Cohen et al. (2011), DeBacker (2011), Fowler and Hall (2017), among others. In non-U.S. contexts, the literature on favoritism has demonstrated widespread evidence of favors from politicians promoted to more powerful positions across all forms of regimes, from Norway (Fiva and Halse, 2016), Sweden (Amore and Bennedsen, 2013), and Italy (Carozzi and Repetto, 2016) to China (Chu et al., 2020, Kung and Zhou, 2017) and Vietnam (Do et al., 2017), among others.

[2] Public media disclosure of politicians' malfeasance can weigh heavily on their electability, especially for those with stronger career concerns (e.g., Ferraz and Finan, 2008, Larreguy et al., 2019).

[3] For clarity and convenience, we address the politician by he/him/his.

increase or decrease favoritism will thus depend on his concern for his future career and future capability to give out favor. Due to those dynamic concerns, the stream of favors can vary greatly along the politician's career by his positions' power and scrutiny.

We organize those intuitions into a minimal model of the politician's career dynamic that may oscillate between two levels of political offices, the higher of which enjoys more power to exert favoritism but faces stronger scrutiny. Our major focus is the difference in expected favoritism between the two offices, each understood as the present value of all present and future benefits for connected firms. This differential present value follows a simple, tractable recursive dynamic, from which we draw testable implications on its sign and change in response to varying power, scrutiny, and career concerns. We highlight the case of the "adverse effect" of higher positions on favoritism for friends' firms: When scrutiny trumps power, a politician's promotion from low to high offices may reduce favoritism. The model and the precise conditions are explained in section 2.

In that case, a politician's career is composed of two stages: While in the later stage of his career a politician's higher position produces greater present value of favors for connected firms, in the earlier stage a higher position lowers the present value of favors. To put differently, the dampening effect of scrutiny on early-career favors more than compensates the positive effect of power on late-career favors, so that the net present value of the higher office is negative for connected firms.[4]

We test those implications in the context of firms that are socially connected to candidates in U.S. Congress elections. Congress seats represent the theory's higher offices, as opposed to positions in state-level politics.[5] We measure a politician's socially connected firm as one with a director who attended the same university program around the same year as the politician.[6] Data on corporate directors' educational backgrounds are gathered from BoardEx (previously used in, e.g., Cohen et al., 2008), and those regarding politicians are manually collected from archives of

[4]This is not inconsistent with the politician's willingness to win elections and ascend to more powerful offices (e.g., Groseclose and Stewart, 1998, Stewart and Groseclose, 1999). His net present value of higher office can still be positive, as he attributes an intrinsic value to the higher office.

[5]As studied in a long tradition in political science (Polsby and Schickler, 2002) and economics (Diermeier et al., 2005), U.S. Congressmen wield large political power and influence on economic activities, especially in their home state. Their power likely strengthens with their seniority and memberships in key committees (Groseclose and Stewart, 1998, Stewart and Groseclose, 1999). Notably, Roberts (1990) documents that, following the sudden death of Senator Henry Jackson, the ranking Democrat on the Armed Services Committee, the market value of defense contractors from his home state of Washington declined, while that of contractors from Georgia, home to the next-most-senior Senator on the same committee, increased. Section 5.2 will also show evidence that congressmen become more scrutinized in the media.

[6]University alumni networks play an important role in the corporate world in the U.S., e.g., as shown by Cohen et al. (2008), Lerner and Malmendier (2013), Shue (2013), Fracassi (2017). Alumni networks likely have high network closure (Karlan et al., 2009), thus are very useful for favor exchange, as they guarantee against uncooperative behaviors and reinforce mutual trust, under the threat of social punishment and ostracization from the network. Unlike links based on political campaign contributions, alumni-based connections predate the studied period for decades, hence are not endogenous to a firm's immediate decisions. See Marsden (1990), Ioannides and Loury (2004), and Allen and Babus (2009) for reviews and discussions of social networks measurement.

campaign websites and Lexis-Nexis biographies (section 4). The net value of a connected firm's present and future benefits from favoritism is reflected in its cumulative abnormal stock returns (CARs) around the election, which is used as the main outcome in our empirical analysis.

As abnormal daily returns may still reflect other sources of variation,[7] we seek to best identify the differential effect between the politicians' higher and lower offices by focusing on the Regression Discontinuity Design (RDD) of close elections, in which electoral victory and defeat are almost as random as a coin toss (Lee, 2008, Lee and Lemieux, 2010, de la Cuesta and Imai, 2016) (section 3). That is, we compare the CARs of firms connected to elected candidates with those of firms connected to defeated ones in a cross-sectional identification that eliminates all potential differences along observable and unobservable characteristics between the two types of firms (Lee and Lemieux, 2010). The RDD estimates a Weighted Average Treatment Effect corresponding to the model's key differential favoritism effect between higher and lower offices.

We find robust evidence of the adverse effect of higher positions on favoritism towards friends' firms, in that firms connected to narrowly elected congressmen face a differential loss in stock value of 2.8% on average, compared with firms connected to defeated candidates (section 5.1). The evidence also firmly supports the model's additional predictions. First, we find that this differential effect of connection to congressmen magnifies in states where the gap in scrutiny from state politics to Congress is deepened, such as proxied by measures of voters' interest in politics, exposure to the media, and participation in elections (section 5.2). Second, consistent with politicians' career concerns, the effect is mostly pronounced for the earlier part of their career, and subsequently fades away (section 5.3). Third, the effect varies as predicted according to (i) proxies of politicians' power to give favor, such as state-level regulations, (ii) firms' attributes that may help them benefit from favors, such as firm size and location, and (iii) the strength and quality of connections (section 5.4). We further discuss issues regarding the measurement of connections among classmates, and address two alternative interpretations of the mechanism at work based on same-school homophily and on Shleifer and Vishny's (1994) negative effect of political connections due to pressure to increase employment (section 6).

This adverse effect of higher position on favoritism means that connected firms benefit even more from defeated candidates, mostly state-level politicians, than congressmen. In a companion study using similar methodology (Do et al., 2019), we find corroborative evidence that elected governors of U.S. states add 4.1% to the market value of their former classmates' firms.

[7] Event studies of connections exploit identification strategies on the time dimension (e.g., Roberts, 1990, Fisman, 2001). Those daily events and daily measures of stock returns are still subject to (i) the prior probability that an event would happen, and (ii) potentially confounding news and reactions around election day. While they can be better addressed with real-time data from prediction markets (Snowberg et al., 2007), prediction markets unfortunately did not exist for the vast majority of elections we consider.

This paper's results can be best seen in comparison with the common monotonic finding that politicians' rise on the power ladder unfailingly increases favoritism, which has been a constant, long-standing feature in distributive politics (as recently summarized by Golden and Min, 2013). Related evidence in the U.S. comes from, e.g., surprising events regarding specific politicians in Roberts (1990), Jayachandran (2006), Fisman et al. (2012), and Acemoglu et al. (2016). Close presidential elections in the U.S. (Knight, 2007, Goldman et al., 2009, 2013, Mattozzi, 2008) also unveil the pattern of benefits to firms connected to the winning party. Another strand of the literature considers connections between firms and politicians based on contributions in firm-initiated Political Action Committees (PACs) in support of specific politicians, such as Cooper et al. (2010), Akey (2015), and Fowler et al. (forthcoming).[8] Beyond the U.S., from both cross-country and country-specific case studies, most evidence also points to the monotonic relationship between more powerful political positions and more favors targeted towards connected groups.[9]

Beyond such monotonic relationship, this paper introduces a novel, more nuanced pattern of favoritism's dependence on the interplay between political power and institutional scrutiny. Our empirical setting is unique in providing power to correctly identify the change of firm's value from favoritism associated with a politician's different positions. The evidence points to the key role of institutional checks and balances in curbing favoritism, and opens the natural question how to design the optimal structure of the system of scrutiny and monitoring mechanisms across different layers of government.

Besides this paper, we are aware of only two studies that have defied this positive effect of power on favoritism. Bertrand et al. (2018) shows Shleifer and Vishny's (1994) mechanism in which connected politicians pressure French companies to hire more before their elections. Fisman et al. (2012) reports that stocks connected to Vice President Dick Cheney are not affected either by news related to his health and political future in two special events or by the probabilities of

[8] While earlier papers find a positive relationship between positions in Congress and contributors' stock values, the latest, most thorough exercise by Fowler et al. (forthcoming) concludes that the average effect is very close to zero. It reaffirms Ansolabehere et al.'s (2003) prevalent view in political science that corporate campaign contribution is tightly restricted and could hardly promote firms' interests (at least before the U.S. Supreme Court's decision on *Citizens United* in 2010). The use of campaign contributions to measure connections between politicians and firms is the fundamental difference with our empirical exercise's reliance on alumni network links, which cannot be affected by firms' short-term decisions.

[9] Cross-country evidence includes Faccio's (2006) and Faccio et al.'s (2006) findings from connections between firms and politicians based on family ties, prior employment, or ownership, and Hodler and Raschky's (2014) results with country leaders' region of birth. While Burgess et al. (2015) found evidence of favoritism in Kenya towards the president's ethnic group only under autocracy, elsewhere similar evidence is established in both democracies such as Norway (Fiva and Halse, 2016), Sweden (Amore and Bennedsen, 2013), France (Coulomb and Sangnier, 2014), Germany (Baskaran and Lopes da Fonseca, 2017), Italy (Carozzi and Repetto, 2016), as well as countries with weaker institutions such as Indonesia (Fisman, 2001), Malaysia (Johnson and Mitton, 2003), Pakistan (Khwaja and Mian, 2005), Brazil (Claessens et al., 2008), Thailand (Bunkanwanicha and Wiwattanakantang, 2009), Taiwan (Imai and Shelton, 2011), China (Fan et al., 2007, Chu et al., 2020, Kung and Zhou, 2017) and Vietnam (Do et al., 2017).

Bush's victory or the Iraq war. While such finding is explained as evidence of the strength of U.S. institutions, the paper stops short of showing how.

2 Theoretical intuitions on favoritism and career concerns

In this section we illustrate the trade-off between favoritism benefits and career concerns in a setting when both power to give favors and scrutiny over favoritism matter. We clarify the intuitions and connect the parameters that determine favoritism to testable implications in our empirical RDD framework of close Congress elections. We highlight that the relative balance of power versus scrutiny between high and low positions is the key determinant of the differential value of favoritism between elected and defeated, which is the key estimate in the empirics. Mathematical details can be found in Appendix A.2.

We consider the politician's career dynamic between two stylized types of political positions, namely high versus low, that differ in both the power to favor connected firms and the level of institutional checks and balances over favoritism. Empirically, the high office corresponds to seats in Congress, and the low office to positions outside Congress, with focus on state-level politics.

The politician's career consists of a sequence of positions s in consecutive terms $(s_t)_{t=1,...,T}$: in each term t, $s_t = 2$ (1) designates the high (low) position. The transition matrix $\mathbf{P}_t = [P_{ijt}]_{i,j\in\{1,2\}}$ indicates the probabilities of transition P_{ijt} from state $s_t = i$ in term t to state $s_{t+1} = j$ in term $t + 1$. For simplicity, we assume the following functional form, with $\gamma_2 \geq \gamma_1 > 0$ as the marginal costs of favoritism on the politician's future (thus the relative marginal cost $\gamma \overset{def}{\equiv} \frac{\gamma_2}{\gamma_1} \geq 1$).[10]

$$P_{11}(x_1) = \gamma_1 x_1 + P_{11}(0), \quad P_{12}(x_1) = -\gamma_1 x_1 + P_{12}(0) \;\; (= 1 - P_{11}(x_1)),$$
$$P_{21}(x_2) = \gamma_2 x_2 + P_{21}(0), \quad P_{22}(x_2) = -\gamma_2 x_2 + P_{22}(0) \;\; (= 1 - P_{21}(x_2)).$$

The politician chooses career-long sequences of the level of favoritism targeted towards its connected firm $x_{st} \in [0, \bar{x}]$, which produces $v_s(x_{s,t})$ for the firm per term t in state s. The firm's expected present value from the stream of $v_s(x_{s,t})$ is denoted $V_{s,t}$. We further assume a simple proportional sharing rule for the politician's kickback gain of $w_s(x_{st}) = \frac{1}{\rho} v_s(x_{st})$ each term, with the functional forms $w_1(x_1) = \sqrt{\beta_1 x_1}$ and $w_2(x_2) = \sqrt{\beta_2 x_2}$, with $\beta_2 \geq \beta_1 > 0$ as measures of power (thus the relative power $\beta \overset{def}{\equiv} \frac{\beta_2}{\beta_1} \geq 1$).[11] Besides $w_s(x_{st})$, the politician's other benefits from

[10] The transition can be thought of mainly, but not only, as electoral contests, and the transition probabilities as electoral success chances. By definition, $P_{11} + P_{12} = P_{21} + P_{22} = 1$. We further assume $P_{22}(0) > P_{12}(0)$, expressing the incumbency advantage in Congress elections (Erikson, 1971, Lee, 2008).

[11] The functions $w(\cdot)$ and $v(\cdot)$ may represent different forms of benefits, such as the firm's new or better contracts, support for the firm when under financial distress, and illicit private payment or political contribution to the politician. In many cases, favoritism involves favor trading with other political and government actors, which is by nature hard to observe. On this topic, see Karlan et al. (2009) for a model of favor trading on networks, and Do et al. (2017) on favoritism by officials without direct authority through favor trading.

holding position s is denoted r_s, with $r_2 > r_1 > 0$. Those benefits accumulate to the expected present value $W_{s,t}$, which is his maximand.

We now define the firm's and politician's differences in values across positions:

Definition 1 $\Delta V_t \overset{def}{\equiv} V_{2,t} - V_{1,t}$ *is the firm's differential value from its connection to the politician's higher position versus the lower position (in short, the differential value of connection). Analogously,* $\Delta W_t \overset{def}{\equiv} W_{2,t} - W_{1,t}$ *is the politician's differential value.*

ΔV_t is the main focus of our empirical analysis, as changes in V_s naturally maps to observed changes in firm's stock value.

The Bellman equations from the politician's optimization yield the following recursive dynamic:

$$\Delta W_t = \Delta r + \Delta w_t + \delta \Delta \tilde{P}_t \Delta W_{t+1}, \tag{1}$$

$$\Delta V_t = \Delta v_t + \delta \Delta \tilde{P}_t \Delta V_{t+1}, \tag{2}$$

with $t \in \{1, \dots, T-1\}$, and $\Delta \tilde{P}_t \overset{def}{\equiv} P_{11,t} - P_{21,t} = P_{22,t} - P_{12,t} \geq 0$. Under standard functional form assumptions,[12] Proposition A2 in Appendix A.2 confirms the existence and uniqueness of the equilibrium, as well as the First Order Conditions that determine it.

We focus on the case the politician always prefers higher office, so $\Delta W_t > 0 \; \forall t \leq T$ (e.g., when Δr is sufficiently large). The FOCs yield the following solution for $t \in \{1, \dots, T-1\}$, which allows the calculation of the full path of favoritism (together with equations (1) and (2)):

$$\begin{aligned} x^*_{1,t} &= \frac{\beta_1}{(2\delta\gamma_1)^2} \Delta W^{*\,-2}_{t+1}, & x^*_{2,t} &= \frac{\beta_2}{(2\delta\gamma_2)^2} \Delta W^{*\,-2}_{t+1}, \\ \Delta v^*_t = \rho \Delta w^*_t &= \frac{\rho B}{2\delta} \Delta W^{*\,-1}_{t+1} \;\; \forall t < T, & \textit{with } B &\overset{def}{\equiv} \frac{\beta_2}{\gamma_2} - \frac{\beta_1}{\gamma_1} = (\beta - \gamma) \frac{\beta_1}{\gamma_2}, \\ x^*_{1,T} = x^*_{2,T} &= \bar{x}, & \Delta V^*_T = \Delta v^*_T &= \sqrt{\bar{x}}(\sqrt{\beta_2} - \sqrt{\beta_1}). \end{aligned} \tag{3}$$

Per-period favoritism $x^*_{s,t}$ is decreasing in the politician's relative value of high office in the next period ΔW^*_{t+1}, and given ΔW^*_{t+1}, $x^*_{s,t}$ is increasing in power β_s, but decreasing in scrutiny γ_s. The net present value of favoritism from a higher position, ΔV^*_t, follows a more nuanced pattern:

Proposition 1 *(i) If power trumps scrutiny, in that* $\beta \geq \gamma$*, then the connected firm draws higher net present benefit when the politician attains higher office, namely* $\Delta V^*_t \geq 0 \; \forall t$.

(ii) If scrutiny trumps power, in that $\beta < \gamma$*, and* T *is big enough, then there exists a time* $\bar{t}$ *before which there is an adverse effect of higher position on the net present value of favoritism:* $\Delta V^*_t < 0 \; \forall t < \bar{t}$*. After* $\bar{t}$*,* ΔV^*_t *is positive and increasing in* t.

[12] For Proposition A2, it suffices that $w(\cdot)$ and $v(\cdot)$ are increasing, concave, and differentiable, and P_{22} and P_{12} (P_{21} and P_{11}) are decreasing (increasing) convex functions of x.

Intuitively, the relative balance between power and scrutiny B (equation (3)) is key to the adverse effect of higher position. When it tilts towards scrutiny, in each period the firm would benefit *less* when the politician attains a higher position ($\Delta v_t^* < 0$) and chooses to reduce favoritism to preserve his career. However, by the end of his career, as electoral concerns ease, the net present value of higher position ΔV_t^* increases towards its terminal value Δv_T^*, which is positive. Over the politician's career, ΔV_t^* follows a loosely upward longterm trend,[13] as it is negative at an early stage, but becomes positive and increasing in late career. We will show robust evidence of the adverse effect of higher position in section 5.1, and illustrate this career-long trend in section 5.3.

Next are the comparative statics with respect to the key parameters of power and scrutiny, which will be tested in corresponding comparative situations in sections 5.2 and 5.4.

Proposition 2 *When scrutiny trumps power, in presence of the adverse effect of higher position ($\Delta V_t < 0$), its magnitude $|\Delta V_t|$ increases with B's magnitude ($B < 0$), e.g., when:*

- *β_2 decreases and/or β_1 increases,*
- *both increase while their ratio β remains the same,*
- *γ_2 increases and/or γ_1 decreases,*
- *both decrease while their ratio γ remains the same.*

Appendix A.2 provides the proofs of Propositions 1 and 2.

3 Empirical methodology and data description

3.1 Identification of the differential value of political connections

We bring section 2's predictions about the differential value of political connections, ΔV, to an empirical setting surrounding elections to the U.S. Congress. Those important events shape politicians' career prospects that can be broadly mapped to the high and low positions described in the theory. As the net present value V of a firm's connection to a politician is priced into its stock price, short-term changes in the stock price correspond to changes in V. It follows naturally that we can use event-study methods to associate electoral results with the changes in V over time.

[13]The upward trend is only 'loosely' so, as one cannot establish the monotonicity of ΔV_t when it is negative, although the monotonicity is more pronounced when $\Delta \tilde{P}_t$ is closer to 1 (i.e., strong incumbency advantage). As the career becomes very long (large T), going backward towards $t = 0$, ΔV_t converges to a fixed negative value.

Time-series identification and CARs. To implement this approach, we obtain daily stock data from the Center for Research in Security Prices (CRSP), and compute the Cumulated Abnormal Returns (CARs) on a firm's stock around the election day. We follow conventional event study methods (Campbell et al., 1997, c. 4) to calculate abnormal returns in a single-factor market model estimated from the pre-event window from day -315 to day -61, counting from the election day (always a trading day). CARs are summed from abnormal returns over the 7-day window from day -1 to day 5 (other pre- and post-election event windows are also considered in placebo and robustness checks).[14] They reflect the stock market's expectation of changes to a firm's value, which maps directly to changes in V, assuming no other event takes place at the same time.

Cross-sectional identification with RDD. The time-series identification still faces three key empirical challenges. First, a politician's electoral success can be endogenous, so that the estimated effect could reflect (i) a reverse causation channel from the firm's performance to the politician's victory or defeat, or (ii) an omitted variable bias when connected firms and politicians are affected by the same unobservable factor, such as a shift in public opinion. Second, as election days are determined and known in advance, there can be other concurrent events that confound the estimates of abnormal returns. Third, time variations in stock prices depend crucially on the market's prediction of event probability, which is not independently observable for lack of a prediction market on individual Congress elections (see discussions in Fisman, 2001, Snowberg et al., 2011). In particular, if the distribution of investors' beliefs of the probability of a politician's winning chance is biased, market reactions to electoral results will carry such biases, making it impossible to identify the true effect on changes in V.[15]

We thus combine the usage of CARs with a cross-sectional identification based on the Regression Discontinuity Design (RDD) of close elections (Hahn et al., 2001, Lee and Lemieux, 2010, de la Cuesta and Imai, 2016). As the vote shares between the top two candidates in each election tend to the threshold of 50%, the electoral outcome of a win or a loss approaches a random draw between the two. At this threshold, in expectation the distributions of any characteristics, observable or unobservable, are identical between winners and losers. Their comparison thus estimates the differential value of connection to a politician in high versus low positions, conditional on the vote shares being fixed at 50%. Thanks to the equivalence to a random draw, this RDD strategy is

[14] Our results are not sensitive to the method of estimation of abnormal returns, such as using multiple factor models by Fama and French (1993) and Carhart (1997) (Appendix Table A5). Appendix A.3 summarizes the calculation of CARs, and argues that the quasi-random nature of RDD necessarily implies the estimate's robustness.

[15] To illustrate this point, suppose that the market value of connection to a candidate is \$100 in case he wins, and zero otherwise. Prior to the election, if the market believes he already has a winning probability of 65%, pre-election connection is already priced by the market at \$65. An event study of election wins would report the post-event market reaction to a realized win of only \$100-\$65=\$35.

immune to the three aforementioned problems of event-study methods.[16]

Regarding external validity, Lee and Lemieux (2010) interprets the RDD estimand as a Weighted Average Treatment Effect (WATE) of being connected to a winner, in which each candidate is weighted by his ex ante likelihood to be in a close gubernatorial election. This likelihood is non-trivial for most candidates, as our sample includes prominent figures such as John Ashcroft, Walter Mondale, and Ted Stevens.[17]

3.2 Implementation of RDD

In practice, to estimate the discontinuity effect at exactly the threshold of 50%, RDD specifications use data points within a distance from this threshold, while accounting for separate functions of the vote shares on both sides of the threshold. We follow Lee and Lemieux's (2010) standard procedure for our main specification to estimate the differential value of Congress connection to firms:

$$CAR_{idt} = \beta Winner_{pt} + \delta_W VS_{pt}\mathbb{1}_{\{VS_{pt}\geq 50\%\}} + \delta_L VS_{pt}\mathbb{1}_{\{VS_{pt}<50\%\}} + \varepsilon_{idpt}. \tag{4}$$

Each observation is a combination of politician p, director d, firm i, and election year t such that (i) politician p is a close-election top-two candidate in election year t, (ii) director d is on the board of firm i in year t, and (iii) politician d and director d are connected as former classmates in the same university degree program (details in subsection 4.2). Each observation thus 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.[18] For robustness, we further perform Calonico et al.'s (2014) procedure of RDD bandwidth selection and adjustment.[19]

CAR_{idt} is the firm's CAR from day -1 to day 5 around the connected politician's election. $Winner_{pt}$ is an indicator equal to one if politician p wins in election year t (i.e., if the running variable VS_{pt} exceeds the 50% threshold), and zero otherwise. Controls include a first order poly-

[16]The key RDD assumption in close elections is that of imprecise control, i.e., both sides of an election cannot manipulate with precision the result of the election (Lee, 2008, Lee and Lemieux, 2010). While its realistic nature has been debated (Caughey and Sekhon, 2011), de la Cuesta and Imai (2016) summarizes arguments and evidence in favor of its validity (e.g., support of balanced attributes at the threshold by Eggers et al., 2015).

[17]John Ashcroft was U.S. Attorney General (2001-2005) after he lost in Missouri's 2000 close Senate election. Walter Mondale was U.S. Vice President (1977-1981), the Democratic Presidential Candidate in 1984, and narrowly lost in Minnesota's 2002 Senate race. Ted Stevens was an influential Senator from Alaska (1968-2009), and the longest-serving Republican U.S. Senator when he left office. He faced one of the biggest political corruption cases in recent U.S. history, in which he was first convicted before the case was abandoned.

[18]Essentially, this baseline sample construction weighs politician-firm connections by the number of directors facilitating the respective connections. Using alternative sample construction at politician by firm level yields quantitatively similar results (Appendix Table A5).

[19]Calonico et al.'s (2014) procedure may lead to drastically different split sample sizes across the many empirical exercises performed on split samples in the paper. For this reason, our benchmark is Lee and Lemieux's (2010) standard procedure, with sensitivity test on a wide range of bandwidths (Appendix Figure A1). Analogous results using Calonico et al.'s (2014) procedure are available upon request.

nomial of VS_{pt}, separately for winning and defeated candidates.[20] Standard errors are clustered at the politician level to avoid the potential downward bias of standard error estimates when the error terms are autocorrelated among firms connected to the same politician (Bertrand et al., 2004).[21]

This strategy estimates the causal effect of having a connected politician in Congress versus out of Congress on the firm's value, which corresponds exactly to the differential value of Congress connection ΔV as discussed in the model.

Test of RDD's internal validity. The RDD identification assumption implies that the distribution of any predetermined variable is smooth around the threshold. This implication can be tested on observables, using the same RDD specification as in equation (4) with each predetermined observable on the left hand side (Lee and Lemieux, 2010). Appendix Table A4 reports this test on a wide range of predetermined politician, director, firm, and state characteristics at the 50% vote share threshold. Among the 49 variables considered, only three discontinuities are statistically significant at 10% level, no more frequent than what would occur by chance. We thus find no evidence against the RDD's internal validity in our setting.

Measure of connection. We focus on politician-director connections through their university alumni networks, following Cohen et al. (2008). A firm is defined as connected to a politician in an election year if at least one of its directors and the politician both graduated from the same university program *within one year* of each other.

It is commonly seen that networks among alumni from the same educational institution play an important role in fostering connections and cooperations. For example, in the U.S., gifts towards those institutions, largely coming from their alumni, amount to 15% of 390 Billion of all charitable donations (Giving USA, 2017). There is plenty of evidence that this type of networks helps connect businessmen and influence corporate and individual decisions, such as in Cohen et al. (2008), Lerner and Malmendier (2013), Nguyen (2012), Shue (2013), Fracassi (2017).

Regarding arrangements of favoritism considered in this paper, alumni networks can be very useful in enforcing cooperative behaviors and strengthening mutual trust under the threat of social punishment and ostracization from the network, when no legal recourse is possible. Based on Karlan et al.'s (2009) prediction, favor exchange is facilitated by high *network closure*, which is likely the case of alumni networks.

[20] Controlling for higher-order (second to fifth) polynomials of vote shares yields qualitatively similar results, with higher order coefficients not statistically different from zero (Table 2). We thus follow Gelman and Imbens's (2019) warning against using higher order polynomials of the running variable when higher order coefficients are not statistically significant.

[21] Our results are robust to alternative clustering schemes, such as clustering by director, firm, or two-way clustering by politician and firm (Appendix Table A5).

There could be doubts about the realistic nature of connections between pairs of classmates, as most people have only a small number of real friends even among classmates (Leider et al., 2009). As classmate connections imperfectly measure real friendships, the measurement error will produce an attenuation bias that reduces the absolute size of the estimate and its statistical significance. Indeed, we do find that the magnitude of our key estimate decreases when we relax the restriction on the same program or the graduation years (subsection 6.1). This suggests that the effect of real friendships can then be even larger than that found in this paper. Besides, even mere acquaintances among classmates can be essential in the development of relationships after college or graduate school by providing mutual trust, common ground in communication, and common access to the same social network. Former classmates are also likely to later develop a strong connection, even if they were not close friends at school.

Homophily. The RDD framework allows us to identify the links between firms and elected congressmen as an almost-random treatment. However, the full networks of classmates and alumni, including firms' links to both elected congressmen and defeated candidates, still have to be taken as exogenously given. That is, while our empirical design rules out direct reverse causality, it does not directly address homophily (McPherson et al., 2001), whereby unobserved shared characteristics influence same school attendance by politicians and businessmen, as well as their future outcomes. For example, a politician and a director may be both interested in military studies, and decided to join a university that specializes in military studies; years later, the election of the former has the potential to affect the latter's firm value through new defense policies, without passing through the social network. While the RDD still correctly identifies the effect of "political connection" defined by former classmate links, it is harder to claim that the effect works through social network mechanisms. In subsection 6.2, we propose a simple solution: using university-by-election year fixed effects to capture university-specific, time-invariant homophily, which is expected to have similar effect on alumni-connected as on classmate-connected firms. As is turns out, the results from this exercise imply that our benchmark effect cannot be explained by homophily alone, or that homophily is not a first order concern in our context.

4 Data description

4.1 Data sources and construction

Close elections. We obtain Congress election results from the Federal Election Commission (FEC) website. We calculate the margin of votes between the top two candidates in each election, and limit the sample to elections in which this margin is below 5%,[22] i.e., when the vote shares between the top two candidates are between 48.5% and 52.5%. Our baseline sample covers 126 out of 128 close elections during the period between 2000 and 2008.[23]

Politicians. We construct a unique dataset of the education and career of top two candidates in the considered close elections through a long process of hand-collecting their biographical records from Lexis-Nexis, which contain active and inactive biographies in Who's Who publications. Our scope of search includes (i) Who's Who in American Politics, (ii) Member Biographical Profiles – Current Congress, (iii) World Almanac of U.S. Politics, and (iv) The Almanac of American Politics. Each candidate's biography includes the candidate's employment history, all undergraduate and graduate degrees attained, years of graduation, and the awarding institutions. For biographies unavailable in Who's Who, especially for defeated candidates, we search the Library of Congress Web Archives which cover multiple versions of Congress election candidates' websites archived at different moments during the electoral campaign. This comprehensive process allows us to collect sufficient data for 92% of the politicians on our search list.

Directors. We obtain biographical information and past education history for directors and senior company officers from BoardEx. The data include board directors and senior company officers in active and inactive firms from 2000 onwards, and comprehensive information on their employment history, educational background (including degrees attained, graduation years, and awarding institutions), remuneration, and participation in social and charity organizations. There are 55,353 board directors in 6,771 U.S. publicly listed firms covered in BoardEx between 2000 and 2008.

Firm and stock data. We match our data with stock data from the Center for Research in Security Prices (CRSP), and obtain information on firm characteristics and financial performance from Compustat. Section 3 describes the calculation of our main outcome of interest, the CAR around election events, which maps directly to changes in the firm's value of connection.

4.2 Baseline sample

Our final baseline sample includes 1,792 observations at the politician-by-director-by-firm-by-election year level, covering 126 close elections, 170 politicians, 1,171 directors, and 1,268 firms between

[22] Sensitivity tests using alternative sample restrictions ranging from 1% to 5% vote margin, and including those suggested by Calonico et al.'s (2014) procedure, produce quantitatively similar results.

[23] We avoid the period after the Supreme Court's decision in *Citizens United vs. FEC*, which changed fundamentally the way firms could contribute to electoral campaigns.

2000 and 2008 (Table 1). These 126 close elections cover a total of 40 U.S. states and have an average win/loss margin of 2.54%. Among them, there are 23 Senate elections, 103 House elections, and 66 elections for which both top two candidates are included in the baseline sample.

Table 1: Baseline Sample's Descriptive Statistics

Election year	2000	2002	2004	2006	2008	2002-2008
No. of close elections	25	23	14	36	28	126
% of close elections	89.3%	88.5%	87.5%	92.3%	93.3%	90.6%
% of all congressional elections	5.3%	4.9%	3.0%	7.7%	6.0%	5.4%
No. of Senate elections	8	4	5	3	3	23
No. of House elections	17	19	9	33	25	103
No. of states covered	17	17	13	25	20	40
Avg. win/loss margin	2.36%	2.79%	3.12%	2.23%	2.62%	2.54%
No. of politicians	39	32	22	57	42	170
% of all election candidates	1.6%	1.5%	1.0%	2.6%	1.9%	2.2%
No. of winning candidates	18	17	12	33	21	101
No. of defeated candidates	21	15	10	24	21	91
Avg. no. of connected directors	7.41	6.81	6.73	7.79	7.14	7.29
Avg. no. of connected firms	9.05	8.13	8.64	10.32	8.90	9.19
No. of connected directors	236	218	148	434	296	1,171
% of corresponding firms' directors	15.3%	12.8%	13.6%	14.7%	12.8%	13.9%
Avg. no of connected politicians	1.22	1.00	1.00	1.02	1.01	1.05
Avg. firms per director	1.22	1.22	1.30	1.32	1.26	1.27
No. of connected firms	276	250	185	528	355	1,268
% of all listed firms	3.8%	3.9%	3.1%	8.9%	6.2%	12.8%
% of total market value	8.9%	10.2%	6.7%	18.4%	6.8%	10.2%
Avg. no. of connected politicians	1.28	1.04	1.03	1.11	1.05	1.11
Avg. no. of connected directors	1.05	1.07	1.04	1.09	1.05	1.07
No. of academic institutions	39	31	23	58	43	117
No. of politician × director × firm × election year observations	358	267	193	595	379	1,792

Notes: This table reports the descriptive statistics of the baseline sample used in this paper, which consists of 1,792 observations at the politician-by-director-by-firm-by-election year level. Close congressional elections are those with margins of votes of less than 5%. Politicians and directors are considered connected if they were enrolled in the same university, campus, and degree program combination within one year of each other.

The 170 politicians record 101 wins and 91 defeats (20 of them experience multiple close elections). They are connected to 1,171 directors in 1,268 firms through 117 academic institutions. On average, each politician is connected to 7.3 directors and 9.2 firms in a close-election year. Undergraduate study is the most prevalent type of connection between directors and politicians: 72.3% of politicians and 87.1% of directors are connected through their undergraduate studies, having graduated from the same school in the same university within one year of each other (Appendix Table A2). The next most common types of connection are law and business school programs.

On average, each firm in our sample is connected to 1.1 close-election politicians through 1.1 directors in an election year. These firms cover a wide range of geographies and industries, with headquarters in 49 U.S. states and operations in 65 SIC 2-digit industries. They are on average larger than firms in the Compustat universe (Appendix Table A3).

5 Empirical results

5.1 Value of Congress-level connection to firms

To evaluate Section 2's theoretical predictions, notably of a possible adverse effect of a politician's promotion on connected firms' value, we first estimate the key quantity $\Delta V = V_2 - V_1$, the average differential value to firms when their connected politicians win versus lose a seat in Congress. Table 2 relates stock price cumulated abnormal returns (CAR) of connected firms around the election day to the connected politician's election result using the baseline RDD specification in equation (4) on the full sample of all firms connected to all top-2 politicians in close Congress elections from 2000 to 2008. Panel A reports the benchmark estimates with CAR calculated for the 7-day period between days -1 and 5, with the event day 0 being the election day.

Table 2: Added Value of Congress-Level Connection to Firms Using RDD

Panel A. Average differential value of Congress-level connection to firms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: CAR(-1, 5)							
Specification	Benchmark	High-order	CCT	Additional controls			Winner/loser subsamples	
Winner	-0.028***	-0.033***	-0.030***	-0.025***	-0.028**	-0.026**		
	(0.008)	(0.012)	(0.011)	(0.009)	(0.012)	(0.011)		
Mean							-0.013**	0.014**
							(0.006)	(0.006)
Politician sample							Winners	Losers
3rd order polynomials		X						
Politician controls				X				
Director controls					X			
Firm controls						X		
Election year FEs				X				
University FEs					X			
Industry FEs						X		
Observations	1,792	1,792	597	1,792	1,792	1,537	966	826
Politicians	170	170	66	170	170	163	94	88
Directors	1,171	1,171	435	1,171	1,171	1,036	695	587
Firms	1,268	1,268	507	1,268	1,268	1,097	800	691

Notes: This panel reports the benchmark average differential value of Congress-level connection to firms ΔV using the baseline RDD specification in equation (4) (column 1). Column 2 additionally controls for a third order polynomial of vote shares (separately for winners and losers). Column 3 uses Calonico et al.'s (2014) procedure of bandwidth selection and adjustment with a triangular kernel. Column 4's politician controls include gender, age, age^2, party affiliation, incumbency dummy, Senate election dummy, ln(total campaign contribution), and ln(number of contributors). Column 5's director controls include gender, age, age^2, executive director dummy, and director tenure. Column 6's firm controls include age, age^2, ln(total assets), ln(total sales), ln(employment), capital expenditure/assets, return on assets, book leverage ratio, market-to-book ratio, and Tobin's Q. Columns 7 and 8 report average CAR(-1, 5) among firms connected to winners and firms connected to losers, after controlling for vote shares. All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

Column 1 reports the baseline RDD specification in which we control linearly for vote shares separately for winners and losers. The resulting estimate indicates that connections to the winners in close congressional elections generate stock price reactions that are on average 2.8 percentage points *below* those generated by connections to the losers, i.e., ΔV is -2.8% of firm value.[24] This effect is statistically significant at 1% and robust to controlling for third order polynomials of vote shares (column 2) and to applying Calonico et al.'s (2014) procedure (column 3).

The effect is unaffected by the inclusion of irrelevant covariates (Lee and Lemieux, 2010), such as politician characteristics and election year fixed effects in column 4, director characteristics and university fixed effects in column 5, and firm characteristics and industry fixed effects in column 6. The estimates reported in those columns, all of which statistically significant at at least 5%, are very close to the baseline effect in column 1. As the RDD identification guarantees that election outcome is as good as randomly assigned to treated and control groups around the 50% vote share threshold, the inclusion of any predetermined control variable should not significantly alter the estimate of the treatment effect. Put differently, in the baseline RDD specification, the estimated differential value of political connections is not confounded by any politician-, director-, firm-, year-, university-, or industry-specific unobservables.

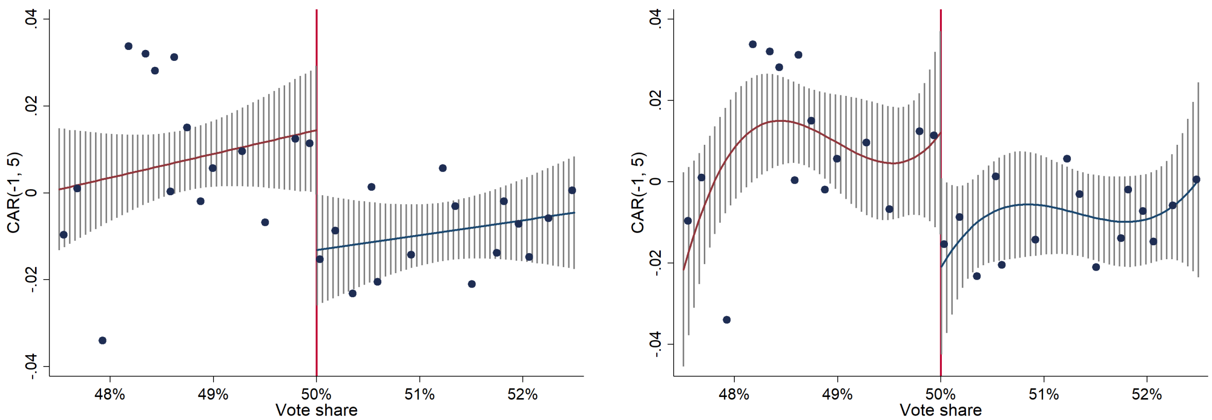
Columns 7 and 8 further show that market reactions, controlling for vote shares, are symmetric among firms connected to winners and those connected to losers. It implies that the market assigned close-to-equal pre-event probabilities of winning to both eventual winners and losers (hence the symmetric market updates post-election). It is consistent with the identifying assumption guaranteed by RDD that winners and losers are equal in all aspects pre-election, and so are their connected firms.

Figure 1 shows the visible discontinuity in connected firm's cumulative abnormal returns at the 50% vote share threshold, the magnitude of which corresponds to the benchmark estimates in Panel A (columns 1 and 2). To examine if this discontinuity is sensitive to our baseline sample choice, we run a series of sensitivity tests using alternative sample restrictions ranging from 1% to 5% election vote margin. Figure A1 shows that all of the resulting coefficients are quantitatively similar to our benchmark estimate, as expected in an RDD. Our results are also robust to using alternative observation units, clustering schemes, or kernel weights (Appendix Table A5).

Alternative event windows. Panel B investigates the impact of election outcome on CARs calculated in various windows before and after the election event. As expected from the close

[24]The absolute size of the effect is equal to 26% of the standard deviation of CARs in our sample. In comparison to relevant event studies, Faccio (2006) reports an average effect of 1.4 percentage points among worldwide firms following an event of new political connection, while Goldman et al. (2009) show an effect of 9.0 percentage points in difference between Republican- and Democrat-connected firms around the 2000 presidential election.

Figure 1: Discontinuity of Market Reaction at 50% Vote Share Threshold



A. Linear fit B. Cubic fit

Notes: This figure plots the estimated discontinuity in connected firms' fitted cumulative abnormal returns (CARs) between days -1 and 5 at the 50% vote share threshold and their 95% confidence intervals. Subfigure A fits separate linear functions of vote shares on either side of the threshold, as described in (equation (4)), and shows the discontinuity estimate of -2.8% (column 1 of Panel A of Table 2). Analogously, subfigure B uses third-order polynomials of vote shares, yielding an estimate of -3.3% (column 2 of Panel A of Table 2). 15 dots on each side of the threshold represent approximately equal-sized bins of observations.

election design, we find no differences in pre-election CARs between firms connected to eventual winners and those connected to eventual losers, either during the 7-day pre-election window (column 1 and Figure A2) or in the day right before the election (column 2).[25] Columns 3 to 6 show the evolution of market reaction to election outcome during different event windows, including the baseline (-1, 5) window in column 4 and alternative (-1, 1), (0, 5), and (1, 5) windows in columns 3, 5, and 6 respectively. Interestingly, about half of the market's reaction happens immediately in the first day after the election (column 3), while the other half occurs between day 1 and day 5 (column 6). Hence we can create a portfolio on day 1 after the event, having known all election results, shorting on firms connected to closely elected politicians and longing on those connected to closely defeated ones, with equal weights on firm connections. Over (1, 5), this portfolio yields a risk-free return of 1.9%. Finally, column 7 reports an insignificant estimate for the (6, 20) event window, suggesting that the market has fully priced in election outcome news after day 5.

In sum, Table 2 provides evidence of Proposition 1's predicted adverse effect of higher offices on favoritism, as friends in higher positions bring *less* value to connected firms ($V_2 < V_1$). The subsequent analyses further investigate the role of scrutiny in this mechanism, as described in Proposition 2.

[25]Similar to columns 7 and 8 of Panel A, these results also suggest that in a close election, the eventual outcome has not been predicted by the market prior to the event.

Panel B. Effect of Congress-level connection on firm value in different event windows

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent variable: CAR						
	Pre-election		Around-election			Post-election	
Event window	(-7, -1)	(-2, -1)	(-1, 1)	(-1, 5)	(0, 5)	(1, 5)	(6, 20)
Winner	0.002	-0.004	-0.016**	-0.028***	-0.019**	-0.019**	0.016
	(0.011)	(0.006)	(0.006)	(0.008)	(0.010)	(0.008)	(0.021)
Observations	1,777	1,777	1,792	1,792	1,792	1,792	1,792
Politicians	169	169	170	170	170	170	170
Directors	1,161	1,161	1,171	1,171	1,171	1,171	1,171
Firms	1,254	1,254	1,268	1,268	1,268	1,268	1,268

Notes: This panel reports the effect of Congress-level connection on firm's cumulative abnormal returns (see subsection 4.1) in different event windows using the baseline RDD specification in equation (4). These include pre-election event windows in columns 1 and 2, around-election event windows in columns 3-5, and post-election event windows in columns 6 and 7. All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

5.2 The role of scrutiny

We first establish Section 2's key assumption that elected congressmen face more media scrutiny than their defeated opponents, namely $\gamma_2 > \gamma_1$. Table 3 reports the change in a politician's presence on local media following his win or loss in a race for Congress. Media presence is calculated as the number of search hits for the politician's name on his state's newspapers based on Newslibrary.com, normalized by the number of search hits for the neutral keyword "September." The outcome variable is the difference of media presence between the year after the election and the year before. On average, elected congressmen experience an increase in media attention (column 1), while defeated candidates experience a reduction of similar magnitude (column 4). The difference between these opposite changes, estimated using the baseline RDD specification, is large and statistically significant (column 7). There is practically no pre-election difference in media presence between winners and losers in the considered close elections, while the post-election media presence difference comes immediately in the first two years, for challengers and incumbents alike (Appendix Table A6).

More interestingly, the increase among winners is driven solely by challengers as they receive a jump in media attention only after becoming congressmen (column 2). Incumbent winners, on the other hand, only maintain the high level of newspaper mention they already received before the election (column 3). Symmetrically, the reduction in media mention among defeated candidates is driven by incumbents losing their Congress seats (column 6), while that experienced by challenger losers is much smaller in magnitude (column 5).

Table 4 reports tests of Proposition 2's claims on the relative importance of state-level and federal-level scrutiny with respect to the adverse effect of higher office on favoritism (i.e., when $\Delta V < 0$). First, lower state-level scrutiny γ_1 reduces the magnitude $|\Delta V|$ (i.e., pushes ΔV up

Table 3: Evidence of Greater Scrutiny of Winners Post-Election

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent variable: Change in media mention (-1, 1)						
Politician sample	All winners	Challenger winners	Incumbent winners	All losers	Challenger losers	Incumbent losers	All candidates
Mean	0.037***	0.057***	0.002	-0.036***	-0.013**	-0.071***	
	(0.009)	(0.014)	(0.006)	(0.011)	(0.005)	(0.026)	
Winner							0.113***
							(0.029)
Difference		*0.056****			*0.058***		
		(0.015)			*(0.026)*		
Observations	101	64	37	91	56	35	192
Politicians	94	64	32	88	54	35	170

Notes: This table reports the average change in media mention of the politician between year 1 and year -1, separately for winner and losers. Media mention is measured by the normalized hit rate from a search for the politician in local newspapers based on Newslibrary.com. Each observation is a politician p in election year t (politician p is a close-election top-two candidate in election year t). Column 1 considers all winners; column 2 – challenger winners; and column 3 – incumbent winners. Column 4 considers all losers; column 5 – challenger losers; and column 6 – incumbent losers. Column 7 applies equation (4)'s RDD specification on the full sample of all politician-by-election year's, using the same change in media mention of politician as the dependent variable. All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

towards 0). In columns 1 and 2, we proxy for γ_1 by Campante and Do's (2014) Average Log Distance from the state's population to its capital city, calculated from the 1970 census (ALD). Accordingly, a low value of ALD indicates that the capital city is closer to the population and provides a good proxy for media coverage of state politics, thus stronger scrutiny. The estimates of ΔV indeed follow the predicted pattern, with a value of -3.8% among high ALD (low γ_1) states in column 1 versus -2.0% among high ALD (high γ_1) states in column 2 (although their difference is not statistically significant). Since ALD is highly persistent over time, and arguably not directly affected by reverse causation or unobservable determinants of state-level institutional quality that may also affect the value of political connections, we could thus interpret the observed variation in ΔV across states as being caused by the differences in institutional quality.

Similarly, columns 3 and 4 distinguish between states with below and above median relative voter turnout in state elections (lower value implies lower γ_1), as measured by average voter turnout rate in state-only elections minus average turnout rate in presidential elections (see description in Appendix Table A1). Consistent with our prediction, the estimate of ΔV is stronger (more negative) and statistically significant among states with lower γ_1 (-4.4% in column 3) versus those with higher γ_1 (-1.2% in column 4).

Second, as the general level of scrutiny decreases (i.e., both γ_1 and γ_2 decrease while their ratio γ remains unchanged), Proposition 2 predicts an increase in the absolute value of $|\Delta V|$ (i.e.,

Table 4: Effect by Degree of Scrutiny at Different Levels

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Dependent variable: CAR(-1, 5)									
Measure of scrutiny	ALD to capital		Voter turnout		Political interest		Media exposure		Corruption	
State sample	High	Low	Low	High	Low	High	Limited	Strong	High	Low
Winner	-0.039***	-0.021*	-0.044***	-0.012	-0.045***	-0.013	-0.057***	-0.015	-0.056***	-0.008
	(0.013)	(0.011)	(0.011)	(0.015)	(0.012)	(0.012)	(0.015)	(0.010)	(0.014)	(0.011)
Difference	*-0.019*		*-0.032**		*-0.031**		*-0.042***		*-0.048****	
	(0.017)		*(0.018)*		*(0.017)*		*(0.018)*		*(0.018)*	
Observations	875	917	767	846	879	874	840	913	860	932
Politicians	96	74	62	86	88	79	87	80	97	73
Directors	621	603	532	571	622	589	582	633	607	633
Firms	717	708	623	676	724	700	674	737	684	763

Notes: This table reports how firm's differential value of Congress-level connection ΔV varies by the degree of scrutiny in state politics (γ_1) and federal politics (γ_2) measured in each politician's home state, using the baseline RDD specification in equation (4). Columns 1 and 2 compare subsamples of states with above and below median Average Log Distance (ALD) to state capital city (Campante and Do, 2014). High ALD implies low γ_1. Columns 3 and 4 compare subsamples of states with above and below median average voter turnout in state elections (minus turnout in presidential elections). Low state-election turnout implies low γ_1. Columns 5 and 6 compare subsamples of states with below and above median level of political interest (share of responses of strong interest in election outcome, from ANES). Low level of political interest implies small γ_1 and γ_2. Columns 7 and 8 compare subsamples of states with below and above median in media exposure around election time (share of respondents following election news via television, newspaper, or radio, from ANES). Limited media exposure implies small γ_1 and γ_2. Columns 9 and 10 compare subsamples of states with above and below corruption level, measured as the number of search hits on Exalead.com for the term "corruption" near the name of the main city in each state, normalized by the number of search hits for the name of that main city. High corruption level implies small γ_1 and γ_2. All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

pushing it down). We first use two different measures to proxy for the general level of scrutiny, namely voters' interest in politics (in columns 5 and 6) and voters' attention to media (in columns 7 and 8). Both measures are calculated from the American National Election Studies (ANES) over 2000-2008, respectively as the share of respondents with strong interest in election outcomes, and as the share of respondents following election news on television, newspaper, or radio. As predicted, we find that estimates of ΔV are largest in magnitude (most negative) in states where the average voter has little political interest (-4.4% in column 5), or limited exposure to election information (-5.7% in column 7). On the other hand, they are not statistically different from zero in the remaining states (columns 6 and 8).

Finally, columns 9 and 10 employ a more direct measure of corruption by state, based on the number of search hits on Exalead.com for the term "corruption" near the name of the main city in each state, normalized by the number of search hits for the name of that main city (following Saiz and Simonsohn's (2013) approach of "downloading wisdom from online crowds"). The result again unambiguously supports our prediction: the negative differential value of connections to elected congressmen is larger and more statistically significant in more corrupt states (-5.6% in column 9).

In sum, Table 4 provides ample evidence that the quality of checks and balances at both state and federal levels, as measured by population concentration, voter turnout, political interest, attention to media, or corruption level, is an important determinant of the amount of benefits firms receive from their political connections. Together with Table 3's observation that congressmen receive considerably greater media attention, this result strongly supports tougher scrutiny as the key reason behind the negative average treatment effect of being connected to congressional election winners, as reported in Table 2.[26]

5.3 Career concern

As scrutiny affects politicians' career prospects, it likely matters more in the early stage of their career. Proposition 1 highlights this intuition in a form of weak monotonicity of ΔV over the course of a political career, in that it likely starts out below zero and may eventually moves above zero late in the career. We further examine this prediction in the data.

Figure 2 illustrates the pattern of the estimate of ΔV as a function of politician's age with a semiparametric version of the benchmark RDD specification in equation (4). The estimate of ΔV at each value of politician's age is obtained from an RDD regression, for which the sample is weighted by a Gaussian kernel of politician's age around that particular value (see details in Appendix A.4). It clearly shows an upward trend of ΔV with respect to politician's age.

This finding is further corroborated in Appendix Table A8. The coefficient of the interaction between the treatment of winning a close election and the politician's age in column 1 is positive, economically large, and statistically significant. Columns 2-3 illustrate the large difference between politicians below and those above the median age of 55 years old, and columns 4 to 8 show that the estimated treatment effect increases by the politician's age.

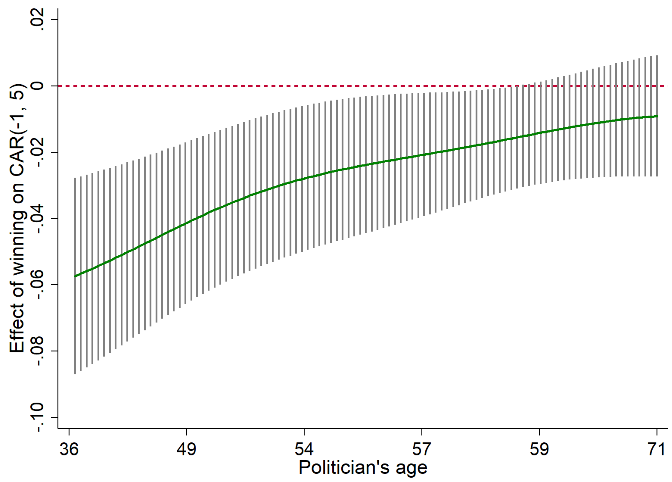
5.4 Determinants of firms' benefits

In this section, we turn to study firm, director, politician, and relationship characteristics that influence firms' potential benefits from political connections (β's) and their implications on ΔV. As distinguished in the model, we consider factors that affect β_1 and β_2 separately and those that affect both of them in the same direction.

Table 5 reports how ΔV varies with the politician's type and level of experience. Columns 1 and 2 first compare the differential values of connections to challengers versus incumbents in Congress elections. One would expect β_2 to be quite small for challengers (power to give favor from a newly elected Congress member), but considerably larger for incumbents thanks to their empowerment

[26] On the other hand, we do not find ΔV to vary with firm's distance to DC, suggesting that greater geographical distance between firms and connected congressmen is not a key channel behind this treatment effect.

Figure 2: Effect by Politician's Age



Notes: This figure plots semi-parametric estimates of differential value of Congress-level connection to firms ΔV as a function of the connected politician's age percentile on the X-axis, together with their 95% confidence intervals. The point estimate at each value of politician's age is obtained from the baseline RDD regression in equation (4), weighted by a Gaussian kernel function of politician's age percentile with a bandwidth of 20% (details in Appendix A.4). The X-axis shows ages corresponding to each age quintiles. Standard errors are clustered by politician.

Table 5: Effect by Politician's Prior Experience

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent variable: CAR(-1, 5)						
Politician sample	Challengers	Incumbents	State	No pol. exp.	House	Senate	All
Winner	-0.034***	-0.013	-0.048***	-0.021	-0.010	0.086***	-0.044***
	(0.011)	(0.014)	(0.013)	(0.019)	(0.016)	(0.017)	(0.012)
W × Pol.'s experience							0.017**
							(0.008)
Difference	*-0.021*			*-0.027*	*-0.038**	*-0.134****	
	(0.017)			*(0.023)*	*(0.020)*	*(0.021)*	
Observations	1,199	593	590	565	508	129	1,792
Politicians	115	64	61	47	58	12	170
Directors	838	440	448	376	372	103	1,171
Firms	961	517	518	488	438	127	1,268

Notes: This table reports how the differential value of Congress-level connection to firms ΔV varies by the politician's prior experience, using the baseline RDD specification in equation (4). Column 1 considers the subsample of all challengers and column 2 – incumbents. Column 3 considers the subsample of politicians with immediate prior position in state politics; column 4 – politicians with no prior experience in either state politics or Congress; column 5 – politicians with prior experience in the House (but not state politics or the Senate); and column 6 – politicians with prior experience in the Senate. Column 7 interacts the treatment with the politician's level of experience, which ranges from 0 to 3 and corresponds to the subsamples in columns 3 (level of experience = 0) to 6 (level of experience = 3). Row *Difference* reports the difference in ΔV between columns 1 and 2, and between column 3 and each of the columns from 4 to 6. All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

and entrenchment in Congress. As expected from the theory, the magnitude of the differential value among challengers is larger than that among incumbents (the difference between estimates in columns 1 and 2 is sizeable and statistically significant).

We also categorize politicians based on their career prior to the election: those in a position in state-level politics, those without prior political experience, and those with previous positions in the House or in the Senate. Among those categories, we expect that the ratio β_2/β_1 is increasing in this order. Indeed, coming from state politics, one should expect β_1 to be relatively large and β_2 to be small. In contrast, those who have already been in Congress should naturally enjoy a very large β_2 (likely larger in the Senate than the House), but a small β_1. In between, we can place the candidates without any political experience. Based on this order, the pattern of the estimated differential effect matches with the theoretical predictions, as shown in columns 3 to 7. From columns 3 to 6, the estimate increases from strongly negative to less negative, to even a positive estimate among senators.[27] When we combine those estimates in a specification with an interaction term with the order among those cases in column 7, the coefficient of the interaction term is positive and statistically significant at 5%.

Table 6 further explores firm and state attributes that should affect separately β_1 or β_2. First, while Table 2's main results show that on average firms benefit less from connections to politicians in higher positions, this pattern may reverse for large, national firms which stand to benefit more from federal-level connections (as a larger β_2 would increase ΔV). In contrast, smaller firms operating mostly within the politician's state likely experience a larger β_1, implying a smaller (more negative) ΔV. Thus, as β_2/β_1 is likely increasing in firm size, so is ΔV. This pattern is confirmed in the data by the positive and statistically significant coefficient of the interaction between the treatment and logarithm of firm market value (column 1), and the contrasting estimates of ΔV, at a positive 2.0% among the largest firms (the larger half of S&P 500 firms, column 2) but a negative -3.4% among the others (column 3).[28] Column 4 further shows that local firms (headquartered in the politician's state or within 500km of its capital)[29] lose out the most when their connected politicians move to Congress (-4.7% in column 4).

Second, state-level connections are likely more beneficial to firms (larger β_1) in states with more

[27] This finding of a positive differential value among connections to senators partly vindicates Prediction 1's first point in case power trumps scrutiny. See also our companion paper Do et al. (2019) that shows the positive net value of firms' connections to elected state governors.

[28] Alternatively, the treatment's positive interaction with firm size in column 1 could also reflect the heterogeneity in how important a single political connection is to the firm. As larger firms are likely connected to many politicians, the benefits of each connection may represent only a small fraction of the firms' value, which translates into a smaller (in magnitude, i.e., less negative) treatment effect. However, this alone cannot explain the positive and statistically significant treatment effect among very large firms as reported in column 2.

[29] Varying this 500 kilometer cutoff does not qualitatively affect the findings.

Table 6: Effect by Firm Size and State-Level Regulations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: CAR(-1, 5)							
Firm/state sample	All firms	Very large firms	Smaller firms	Local firms	All states	High reg. states	Low reg. states	Local firms
Winner	-0.027***	0.020*	-0.034***	-0.047**	-0.028***	-0.043***	-0.014	-0.042*
	(0.008)	(0.011)	(0.009)	(0.021)	(0.008)	(0.011)	(0.010)	(0.022)
W × ln(Market value)	0.012**							
	(0.005)							
W × State reg. index					-0.047***			-0.083*
					(0.017)			(0.050)
Difference		*0.054**** *(0.014)*				*-0.029*** *(0.015)*		
Observations	1,792	204	1,588	450	1,792	894	898	450
Politicians	170	74	170	117	170	89	81	117
Directors	1,171	147	1,092	359	1,171	644	610	359
Firms	1,268	132	1,148	374	1,268	735	730	374

Notes: This table reports how the differential value of Congress-level connection to firms ΔV varies by the benefits of state- (β_1) and federal-level (β_2) connection to the firm, using the baseline RDD specification in equation (4). Column 1 interacts the treatment (i.e., being connected to a winning candidate) with firm size, measured by ln(market value). Columns 2 and 3 compare subsamples of very large firms and smaller ones, distinguished at the threshold of market value above the median of S&P 500 firms; very large firms likely have large β_2. Column 4 considers the subsample of local firms. A firm is classified as local if its headquarter is in the politician's state or within 500 kilometers of the state's capital; local firms likely have large β_1. Column 5 interacts the treatment with the state regulation index in 1999; more state regulations imply large β_1. Columns 6 and 7 compare subsamples of states with above-median and below-median state regulation index. Column 8 interacts the treatment with state regulation index among the subsample of local firms. All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

regulations, where there is greater potential to grant benefits to connected firms on a discretionary basis. This implies a smaller (more negative) differential value of higher-office connections ΔV. Using the 1999 state-level regulation index from Clemson University's Report on Economic Freedom (see description in Appendix Table A1), we obtain results consistent with this claim, including the negative, statistically significant estimated coefficient on the interaction between the treatment and state regulation index (column 5) and the estimates of ΔV among high-regulation states (-4.3% in column 6, significant at 1% level) and among low-regulation states (small and not significant). Furthermore, the gradient of this difference is more pronounced among local firms, to which state level regulations and thus related benefits from local political connections are more relevant (interaction term of -8.3% in column 8, compared to that of -4.7% in column 5).

Table 7 turns to examining how ΔV varies with predictors of a firm's ability to extract value from favors from both high and low offices (variations of both β_1 and β_2), including corporate governance quality and the strength of the relationship. Proposition 2 predicts that as both β_1 and β_2 grow proportionally, so does the magnitude of the differential value $|\Delta V|$.

In columns 1 to 4, we measure firm's governance quality using board size and shares of insti-

Table 7: Effect by Corporate Governance and Relationship Strength

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: CAR(-1, 5)							
	Board size		Inst. block shares		State's trust level		Reunion year	
Sample	< 10	≥ 10	Large	Small	High	Low	On	Off
Winner	-0.049***	0.004	-0.047***	0.012	-0.042***	-0.012	-0.053***	-0.020*
	(0.017)	(0.013)	(0.017)	(0.015)	(0.011)	(0.011)	(0.017)	(0.011)
Difference	*-0.053*****		*-0.059*****		*-0.029**		*-0.033*	
	(0.022)		*(0.024)*		*(0.015)*		*(0.020)*	
Observations	713	514	528	546	865	888	516	936
Politicians	121	114	23	129	84	83	58	95
Directors	570	382	415	438	635	563	373	621
Firms	594	377	419	426	728	658	459	723

Notes: This table reports how the differential value of Congress-level connection to firms ΔV varies by the firm's ability to extract value from its political connection, using the baseline RDD specification in equation (4). Columns 1 and 2 compare subsamples of firms with board size of below and at least median (10) number of directors; small board size implies large β_1 and β_2. Columns 3 and 4 compare subsamples of firms with at least and below median (20%) institutional block shares; large institutional block shares implies large β_1 and β_2. Columns 5 and 6 compare subsamples of politicians from states with at least and below median generalized trust, calculated as the share of ANES respondents in the state responding positively to the standard trust question during the 2000-2008 period; higher generalized trust implies large β_1 and β_2. Columns 7 and 8 compare subsamples in which the election year coincides or not with the alumni reunion year (if not missing); election in reunion year implies large β_1 and β_2. All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

tutional block ownership in the year before the election, as is standard in the corporate finance literature (Ferreira and Matos, 2008, Yermack, 1996).[30] Consistent with Proposition 2's prediction, firms that can better profit from their local political connections suffer greater loss when those connections move up to Congress (loss of 4.9% among firms with below-median board size in column 1 and 4.7% among firms with above-median institutional block shares in column 3, compared with the average loss of 2.8% among all firms). In contrast, the analogous differential value experienced by firms with weak governance are not statistically different from zero (columns 2 and 4).

Columns 5 and 6 further dichotomize the sample by the trusting nature of the relationship between politicians and firms, as trust is crucial in transactions that cannot be legally honored, hence higher trust implies higher β_1 and β_2. To proxy for the level of trust between politicians and directors, we measure generalized trust by state from the ANES from 2000 to 2008.[31] The results confirm that in high trust environments, firms tend to lose more market value when their connected politicians get elected to higher offices (column 5), as opposed to low trust states (column

[30]See also the survey by Shleifer and Vishny (1997). In addition, using alternative measures of corporate governance quality, such as number of institutional block owners or total institutional shares, also yields similar results.

[31]The measure of generalized trust has received a lot of attention in the recent literature on trust (Guiso et al., 2006, 2009), and has been validated independently in many settings (e.g., in expriments in Sapienza et al. 2013, Falk et al. 2016). We focus on the ANES since the General Social Survey (GSS), the most common source of measures of trust, does not identify respondent's state (see description in Appendix Table A1).

6). Similarly, we expect higher β_1 and β_2 following alumni reunions which strengthen relationships among alumni (Shue, 2013). The estimated differential value is indeed stronger when the election is held right in the year of the alumni reunion (column 7) than when it is not (column 8).

6 Discussions on measurement and interpretation

6.1 Precision of connection measured by educational institutions

As discussed in subsection 3.2, while two individuals' going to the same university at the same time is a relevant and appropriate proxy for their being connected later in life (Cohen et al., 2008, Nguyen, 2012, Fracassi, 2017), it may still contain measurement errors, leading to a potential attenuation bias of the estimate of ΔV. This bias should decrease with the quality of our connection measure.

Table 8: Effect by Quality of Politician-Director Connection Measure

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Dependent variable: CAR(-1, 5)								
	Same institution definition			Graduation year difference				Total enrollment	
Network sample	Strict	Baseline	Loose	2 year	3 year	4 year	Alumni	Top 15	Others
Winner	-0.036***	-0.028***	-0.024***	-0.018**	-0.015**	-0.014**	-0.005	-0.012	-0.031***
	(0.009)	(0.008)	(0.008)	(0.008)	(0.007)	(0.007)	(0.006)	(0.022)	(0.009)
Observations	1,809	1,792	1,920	3,009	4,143	5,284	27,394	273	1,519
Politicians	159	170	176	183	193	197	219	30	148
Directors	1,149	1,171	1,267	1,815	2,398	2,922	9,027	186	988
Firms	1,252	1,268	1,338	1,812	2,215	2,527	4,257	219	1,097

Notes: This table reports how the *estimated* value of Congress-level connection to firms $\widehat{\Delta V}$ varies with the quality of the politician-director connection measure, using the baseline RDD specification in equation (4). In the baseline definition, a politician-director pair is considered connected if they graduated from (i) the same university, campus, and degree program combination (ii) at most one year apart (column 2). Columns 1 and 3 vary the same-institution restriction, from requiring the same university, campus, school, and degree program combination (column 1) to only same university and degree program (column 3). Columns 3-8 vary the restriction on graduation years, from difference of at most one year (columns 1-3) to up to four years (column 6) to including all alumni (column 7). Column 8 and 9 compare subsamples of universities in versus outside the top 15 in total enrollment. All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

Indeed, Table 8 shows that the magnitude of the estimated differential value $\widehat{\Delta V}$ decreases steadily as we increasingly relax the definition of politician-director connection, from requiring each pair to have graduated from the same university, campus, school, and program combination (column 1) to only same university and program combination (column 3), and from at most one year apart (columns 1-3) to up to four years apart (column 6). At the extreme, when connection is defined based on the full alumni network, without requiring any overlap between the politician and the director, $\widehat{\Delta V}$ is close to zero and not statistically significant (column 7). Consistent with this pattern, we also find that $\widehat{\Delta V}$ is not statistically different from zero among politician-director pairs overlapping at very large universities (column 8), where the chance that they actually know one another is slim.

However, it is also possible that politicians and directors are connected later in their careers only after they have reached advantageous positions to bring mutual benefits, and their shared alma maters may act as a catalyst.[32] This explains the pattern in Appendix Table A10 that the estimated loss in firm value is most salient among brand-name universities (such as the most represented in our sample, Harvard University, and other Ivy League schools), where politicians' and directors' strong ties to their alma maters facilitate their future networking and reconnection (columns 1 and 5). The effect is also large among the three most represented universities in our director sample, namely Harvard University, Stanford University, and the University of Pennsylvania (column 3), and remains strong even in the alumni networks of these strong-tie universities (columns 7-9).

6.2 Homophily as an alternative mechanism

As discussed in subsection 3.2, our empirical design takes the classmate connections between politicians and directors as exogenously given. This raises the concern of homophily, whereby both same school attendance and linked future outcomes of politicians and businessmen are driven by certain shared characteristics (McPherson et al., 2001). In presence of homophily, it is possible that the (correctly) identified effect of being connected to an elected congressman is driven by these shared characteristics instead of the suggested mechanism of direct classmate connection.

If that is the case, we would expect a politician's win to have similar effect on his classmates' firms as well as other alumni's firms.[33] To put differently, within the same election year, the homophily effect should be similar for all firms connected to the same university through its alumni network, and thus can be absorbed by a full set of university-by-election year fixed effects θ_{st} (s is the common alma mater of the corresponding politician-director pair). The following specification formalizes this intuition by comparing the effect of close election outcome on firms connected to the running candidates through the classmate network (the baseline sample, for which $Class_{dp} = 1$), and those connected only through the alumni network (for which $Class_{dp} = 0$), controlling for a full set of θ_{st}:

$$CAR_{idt} = \gamma Winner_{pt} \times Class_{dp} + \beta Winner_{pt} + \rho Class_{dp} + f(VS_{pt}, Class_{dp}) + \theta_{st} + \varepsilon_{idpt}.\text{[34]} \quad (5)$$

In the above specification, the coefficient of interest γ captures the difference in ΔV associated with classmate-connected firms and that with alumni-only-connected ones, after partialling out

[32] Results regarding alumni reunion year in columns 7 and 8 of table 7 also hint at this possibility.

[33] Hence, the lack of significant result among firms connected to politicians through the alumni network (Table 8, column 7) already suggests that homophily is not a first order concern.

[34] $f(VS_{pt}, Class_{ipt})$ includes the full interaction between VS_{pt} and $Class_{dp}$, separately for each side of the winning threshold. That is, $f(VS_{pt}, Class_{dp}) = \delta_W VS_i \mathbb{1}_{\{VS_i \geq 50\%\}} + \delta_L VS_i \mathbb{1}_{\{VS_i < 50\%\}} + \psi_W VS_i \mathbb{1}_{\{VS_i \geq 50\%\}} Class_{dp} + \psi_L VS_i \mathbb{1}_{\{VS_i < 50\%\}} Class_{dp}$.

the common effects of all contemporaneous elections linked to the corresponding alma mater, i.e., the homophily effect. Estimating this specification on the sample of all close elections' alumni-connected firms yields $\widehat{\gamma}$ of -3.3%, statistically significant at 1% level (Appendix Table A11, column 1), very similar to the benchmark $\widehat{\Delta V}$ of -2.8% identified in Table 2. Furthermore, we also restrict the estimation sample to only politician-director pairs that are at most 10 years or 5 years apart in school to allow for slowly-varying homophily, which produces quantitatively similar $\widehat{\gamma}$'s (columns 4 and 5). These results suggest that the change in firm value associated with connected politician's move to Congress cannot be explained by homophily alone, but comes mostly from direct classmate connection.

6.3 Medium-term effects on firms and directors

We further find that the main results (Table 2) that firms benefit less from their connections to elected congressmen carry over to firms' medium-term performances. Columns 1 and 2 of Table 9 report that firms connected to elected congressmen reduce their activities in the corresponding state in the year following the election, as measured by firm's presence on local media,[35] relative to those connected to defeated candidates. Furthermore, directors connected to elected congressmen, whose connections are now less valuable to their firms, are also more likely to leave the firms after the election, based on results from both a Cox proportional hazard model (in which the hazard event is the director's leaving the firm after the election) (column 5) and an RDD specification (in which the outcome variable is whether the director leaves the firm within three years of the election) (column 6).

On the other hand, there is no difference in employment between winner-connected and loser-connected firms, both before and after the election (columns 3 and 4). It implies that the main results are not corroborative of Shleifer and Vishny's (1994) theory that politicians pressure connected firms to increase hiring to support their electoral candidacies.

6.4 Market's attention and trading volume

Are classmate connections salient enough for investors to be priced into connected firms' stocks? Let us remark that arbitrage based on such information of connections does not require the information to be widely held by all potential investors. Instead, a few investors "in the know" who follow those

[35] Unfortunately, data on firm's economic activities by state are not readily available. Similar to a politician's media presence (Table 3), a firm's media presence is calculated as the number of search hits for the firm's name on the corresponding state's newspapers based on Newslibrary.com, normalized by the number of search hits for the neutral keyword "September." The resulting hit rate proxies for the firm's activities within the state in the search period. At the national level, this variable is remarkably correlated with changes in firm's sales, investments, R&D, employment, and cash flows.

Table 9: EFFECTS OF CONGRESS-LEVEL CONNECTION ON FIRM'S REAL OUTCOMES

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	**Local media mention**		**ln(employment)**		**Director leaving firm**	
	Year 0	Year 1	Year 0	Year 1	Hazard	Within 3yrs
Model	RDD with lagged dependent variable				Cox	RDD
Winner	-0.003	-0.014*	0.001	0.000	0.245*	0.109*
	(0.006)	(0.008)	(0.039)	(0.032)	(0.136)	(0.061)
Observations	1,782	1,786	1,684	1,664	1,763	1,413
Politicians	170	170	170	170	169	136
Directors	1,168	1,169	1,120	1,105	1,156	906
Firms	1,266	1,266	1,193	1,176	1,251	1,015

Notes: This table reports the effect of close election outcome on connected firms' and directors' real outcomes. Columns 1-4 use the baseline RDD specification in equation (4) with additional lagged dependent variable control. The dependent variable in columns 1 and 2 is media coverage of firm, as measured by the normalized hit rate from a search for the firm in local newspapers, in the year of the election (year 0) and the year following the election (year 1) respectively. The dependent variable in columns 3 and 4 is firm's ln(employment) in years 0 and 1 respectively. Column 5 employs a Cox proportional hazard model with the hazard event being the director's leaving the firm after the election, with controls for vote shares (separately for each side of the winning threshold) and the director's tenure at the firm at year 0. Column 6 uses the baseline RDD specification in equation (4) with (i) the dependent variable being an indicator the director's leaving the firm within three years of the election and (ii) an additional control for the director's tenure at the firm at year 0. Column 6's sample included election years 2000, 2002, 2004, and 2006, so that at least three years after each election are fully observed. All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

firms, including but not restricted to insiders, may be sufficient to create the stock price impact. If they receive other investors' attention because of the election, information cascades (Bikhchandani et al., 1992, 1998) can lead to abnormal increases in the trading volume of related stocks around the election day (especially since close elections' results are unpredictable *ex ante*).

Indeed, we find evidence of abnormal trading volume (Campbell and Wasley, 1996) of stocks of firms connected to close-election candidates around the corresponding election day. Using a market model from day -315 to day -61 before each event to calculate the abnormal daily trading volume around the election day, we find that stocks in our sample are traded significantly more around the event, with 5.2% cumulative abnormal volume during the (-5,-1) window, and 2.2% cumulative abnormal volume during the (-1, 5) window, both statistics significant at 1%.

7 Concluding remarks

This paper challenges the commonly evoked view that higher positions lead politicians to distribute more favors to their socially connected firms. Our intuitions emphasize the balance between a position's power to give favors and how much scrutiny it faces. If this balance tilts towards scrutiny, the attainment of a higher position may result in an adverse effect on his connected firms' value.

We empirically assess this claim using the Regression Discontinuity Design of close elections in order to estimate the differential value of connection to a politician elected to the U.S. Congress versus a defeated candidate. Across a broad range of specifications, we find robust, statistically significant, and economically important effects of around -2.8% of firm's market value. This adverse effect is most prominent among younger candidates, when career concerns are arguably the strongest. It also varies with predictors of the balance of power and scrutiny according to the theoretical intuitions.

Those findings highlight the crucial role of scrutiny in restraining favoritism at all political levels, and lead to the question of institutional design of scrutiny across different institutional layers. If resources to monitor politicians are limited, and favoritism is broadly considered undesirable, but all the more so from higher positions, then there is clearly an argument to focus more monitoring on politicians at higher level. American institutions that place congressmen under a lot more scrutiny than, say, state-level officials, may already reflect this trade-off.

Finally, a note of caution on generalizing the empirical results for several reasons. First, while our estimate is a Weighted Average Treatment Effect (WATE) across all politicians, we acknowledge that some politicians may naturally have higher chances of competing in a close election, and correspond to larger weights in the WATE. Our interpretation is therefore more informative about those politicians than some others who expectedly win (or lose) by large margins. Second, extrapolations before and after this period, or towards other types of political connections, require careful consideration. Third, we also stop short of inferring the effect of connections on general welfare. These topics are natural targets for future research in this line of work.

References

Acemoglu, Daron, Simon Johnson, Amir Kermani, James Kwak, and Todd Mitton, "The Value of Connections in Turbulent Times: Evidence from the United States," *Journal of Financial Economics*, 2016, *121* (2), 368–391. 4

Akey, Pat, "Valuing Changes in Political Networks: Evidence from Campaign Contributions to Close Congressional Elections," *The Review of Financial Studies*, 2015, *28* (11), 3188–223. 4

Allen, Franklin and Ana Babus, "Networks in Finance," in Paul Kleindorfer and Yoram Jerry Wind, eds., *The Network Challenge*, Philadelphia, Pennsylvania: Wharton School Publishing, 2009, pp. 367–382. 2

Amore, Mario Daniele and Morten Bennedsen, "The Value of Local Political Connections in a Low-Corruption Environment," *Journal of Financial Economics*, 2013, *110* (2), 387–402. 1, 4

Ansolabehere, Stephen, John M. de Figueiredo, and James M. Snyder, "Why is There so Little Money in U.S. Politics?," *Journal of Economic Perspectives*, March 2003, *17* (1), 105–130. 4

Baskaran, Thushyanthan and Mariana Lopes da Fonseca, "Appointed Public Officials and Local Favoritism: Evidence from the German States," 2017. Working Paper. 4

Bertrand, Marianne, Esther Duflo, and Sendhil Mullainathan, "How Much Should We Trust Differences-In-Differences Estimates?," *The Quarterly Journal of Economics*, 2004, *119* (1), 249–275. 10

_ , Francis Kramarz, Antoinette Schoar, and David Thesmar, "The Cost of Political Connections," *Review of Finance*, 3 2018, *22* (3), 849–876. 4

Bikhchandani, Sushil, David Hirshleifer, and Ivo Welch, "A Theory of Fads, Fashion, Custom, and Cultural Change as Informational Cascades," *Journal of Political Economy*, 1992, *100* (5), 992–1026. 28

_ , _ , and _ , "Learning from the Behavior of Others: Conformity, Fads, and Informational Cascades," *Journal of Economic Perspectives*, 1998, *12* (3), 151–170. 28

Bunkanwanicha, Pramuan and Yupana Wiwattanakantang, "Big Business Owners in Politics," *Review of Financial Studies*, 2009, *22* (6), 2133–2168. 4

Burgess, Robin, Remi Jedwab, Edward Miguel, Ameet Morjaria, and Gerard Padr i Miquel, "The Value of Democracy: Evidence from Road Building in Kenya," *American Economic Review*, 2015, *105* (6), 1817–51. 4

Calonico, Sebastian, Matias Cattaneo, and Rocio Titiunik, "Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs," *Econometrica*, 2014, *82*, 2295–2326. 9, 12, 14, 15, 45

Campante, Filipe and Quoc-Anh Do, "Isolated Capital Cities, Accountability, and Corruption: Evidence from US States," *American Economic Review*, 2014, *104* (8), 2456–81. 18, 19, 36

Campbell, Cynthia and Charles Wasley, "Measuring Abnormal Daily Trading Volume for Samples of NYSE/ASE and NASDAQ Securities Using Parametric and Nonparametric Test Statistics," *Review of Quantitative Finance and Accounting*, 1996, *6* (3), 309–26. 28, 36

Campbell, John, Andrew Lo, and Craig MacKinlay, *The econometrics of financial markets*, Princeton, New Jersey: Princeton University Press, 1997. 8

Carhart, Mark M., "On Persistence in Mutual Fund Performance," *Journal of Finance*, 1997, *52* (1), 57–82. 8, 36, 45, 52

Carozzi, Felipe and Luca Repetto, "Sending the Pork Home: Birth Town Bias in Transfers to Italian Municipalities," *Journal of Public Economics*, 2016, *134* (C), 42–52. 1, 4

Carsey, Thomas and Barry Rundquist, "The Reciprocal Relationship between State Defense Interest and Committee Representation in Congress," *Public Choice*, 1999, *99* (3-4), 455–63. 1

Caughey, Devin and Jasjeet S. Sekhon, "Elections and the Regression Discontinuity Design: Lessons from Close US House Races, 1942-2008," *Political Analysis*, 2011, *19* (4), 385–408. 9

Chu, Jian, Raymond Fisman, Songtao Tan, and Yongxiang Wang, "Hometown Favoritism and the Quality of Government Monitoring: Evidence from Rotation of Chinese Auditors," 2020. Working Paper. 1, 4

Claessens, Stijn, Erik Feijen, and Luc Laeven, "Political Connections and Preferential Access to Finance: The Role of Campaign Contributions," *Journal of Financial Economics*, 2008, *88* (3), 554–580. 4

Cohen, Lauren, Andrea Frazzini, and Christopher Malloy, "The Small World of Investing: Board Connections and Mutual Fund Returns," *Journal of Political Economy*, 2008, *116* (5), 951–979. 2, 10, 25, 35, 42

_ , Joshua Coval, and Christopher Malloy, "Do Powerful Politicians Cause Corporate Downsizing?," *Journal of Political Economy*, 2011, *119* (6), 1015–1060. 1

Cooper, Michael, Huseyin Gulen, and Alexei Ovtchinnikov, "Corporate Political Contributions and Stock Returns," *Journal of Finance*, 2010, *65* (2), 687–724. 4

Coulomb, Renaud and Marc Sangnier, "The impact of political majorities on firm value: Do electoral promises or friendship connections matter?," *Journal of Public Economics*, 2014, *115*, 158–70. 4

de la Cuesta, Brandon and Kosuke Imai, "Misunderstandings About the Regression Discontinuity Design in the Study of Close Elections," *Annual Review of Political Science*, 2016, *19*, 375–96. 3, 8, 9

DeBacker, Jason, "The price of pork: The seniority trap in the U.S. House," *Journal of Public Economics*, 2011, *95* (1-2), 63–78. 1

Diermeier, Daniel, Michael Keane, and Antonio Merlo, "A Political Economy Model of Congressional Careers," *American Economic Review*, 3 2005, *95* (1), 347–373. 2

Do, Quoc-Anh, Kieu-Trang Nguyen, and Anh N. Tran, "One Mandarin Benefits the Whole Clan: Hometown Favoritism in an Authoritarian Regime," *American Economic Journal: Applied Economics*, 2017, *9* (4), 1–29. 1, 4, 5, 52

_ , Yen-Teik Lee, and Bang D. Nguyen, "Directors as Connectors: Do State Governors in Their Alumni Networks Increase Firm Value?," 2019. Working Paper. 3, 22

Eggers, Andrew C., Anthony Fowler, Jens Hainmueller, Andrew B. Hall, and James M. Snyder, "On the validity of the regression discontinuity design for estimating electoral effects: New evidence from over 40,000 close races," *American Journal of Political Science*, 2015, *59* (1), 259–274. 9

Erikson, Robert S., "The Advantage of Incumbency in Congressional Elections," *Polity*, 1971, *3* (3), 395–405. 5

Faccio, Mara, "Politically Connected Firms," *American Economic Review*, 2006, *96* (1), 369–386. 4, 15

_ , Ronald Masulis, and John McConnell, "Political Connections and Corporate Bailouts," *Journal of Finance*, 2006, *61* (6), 2597–2635. 4

Falk, Armin, Anke Becker, Thomas Dohmen, David Huffman, and Uwe Sunde, "The Preference Survey Module: A Validated Instrument for Measuring Risk, Time, and Social Preferences," 2016. Working Paper. 24

Fama, Eugene and Kenneth French, "Common Risk Factors in the Returns on Stocks and Bonds," *Journal of Financial Economics*, 1993, *33* (1), 3–56. 8, 36, 45, 52

Fan, Joseph P.H., T.J. Wong, and Tianyu Zhang, "Politically Connected CEOs, Corporate Governance, and Post-IPO Performance of China's Newly Partially Privatized Firms," *Journal of Financial Economics*, 2007, *84* (2), 330–357. 4

Ferejohn, John A., *Pork Barrel Politics: Rivers and Harbors Legislation*, Stanford, CA: Stanford University Press, 1974. 1

Ferraz, Claudio and Frederico Finan, "Exposing Corrupt Politicians: The Effects of Brazil's Publicly Released Audits on Electoral Outcomes," *The Quarterly Journal of Economics*, 2008, *123* (2), 703–745. 1

Ferreira, Miguel A. and Pedro Matos, "The colors of investors' money: The role of institutional investors around the world," *Journal of Financial Economics*, 2008, *88* (3), 499–533. 24

Fisman, David, Raymond Fisman, Julia Galef, Rakesh Khurana, and Yongxiang Wang, "Estimating the Value of Connections to Vice-President Cheney," *The B.E. Journal of Economic Analysis and Policy*, 2012, *13* (3), 1–20. 4

Fisman, Raymond, "Estimating the Value of Political Connections," *American Economic Review*, 2001, *91* (4), 1095–102. 3, 4, 8

Fiva, Jon and Askill Halse, "Local Favoritism in At-Large Proportional Representation Systems," *Journal of Public Economics*, 2016, *143* (C), 15–26. 1, 4

Fowler, Anthony and Andrew Hall, "Long-Term Consequences of Election Results," *British Journal of Political Science*, 2017, *47* (2), 351–372. 1

_ , Haritz Garro, and Jörg L. Spenkuch, "Quid Pro Quo? Corporate Returns to Campaign Contributions," *The Journal of Politics*, forthcoming. 4

Fracassi, Cesare, "Corporate Finance Policies and Social Networks," *Management Science*, 2017, *63* (8), 2420–2438. 2, 10, 25

Gelman, Andrew and Guido Imbens, "Why High-Order Polynomials Should Not Be Used in Regression Discontinuity Designs," *Journal of Business and Economic Statistics*, 2019, *37* (3), 447–456. 10

Giving USA, *The Annual Report On Philanthropy For The Year 2016,* 2017. 10

Glaeser, Edward L. and Raven E. Saks, "Corruption in america," *Journal of public Economics*, 2006, *90* (6-7), 1053–1072. 36, 46

Golden, Miriam and Brian Min, "Distributive Politics Around the World," *Annual Review of Political Science*, 2013, *16* (1), 73–99. 4

Goldman, Eitan, Jörg Rocholl, and Jongil So, "Do Politically Connected Boards Affect Firm Value?," *Review of Financial Studies*, 2009, *22* (6), 2331–2360. 4, 15

_ , _ , and _ , "Political Connections and the Allocation of Procurement Contracts," *Review of Finance*, 2013, *17* (5), 1617–1648. 4

Groseclose, Tim and Charles Stewart, "The Value of Committee Seats in the House, 1947-91," *American Journal of Political Science*, 1998, *42* (2), 453–74. 2

Guiso, Luigi, Paola Sapienza, and Luigi Zingales, "Does Culture Affect Economic Outcomes?," *Journal of Economic Perspectives*, 6 2006, *20* (2), 23–48. 24

_ , _ , and _ , "Cultural Biases in Economic Exchange?," *The Quarterly Journal of Economics*, 2009, *124* (3), 1095–1131. 24

Hahn, Jinyong, Petra Todd, and Wilbert Van Der Klauww, "Identification and estimation of treatment effects with a regression discontinuity design," *Econometrica*, 2001, *69* (1), 201–09. 8

Hodler, Roland and Paul A. Raschky, "Regional Favoritism," *Quarterly Journal of Economics*, 2014, *129* (2), 995–1033. 4

Imai, Masami and Cameron Shelton, "Elections and Political Risk: New Evidence from the 2008 Taiwanese Presidential Election," *Journal of Public Economics*, 2011, *95* (7-8), 837–849. 4

Ioannides, Yannis and Linda Loury, "Job Information Networks, Neighborhood Effects, and Inequality," *Journal of Economic Literature*, 2004, *42* (4), 1056–1093. 2

Jayachandran, Seema, "The Jeffords Effect," *Journal of Law and Economics*, 2006, *49* (2), 397–425. 4

Johnson, Simon and Todd Mitton, "Cronyism and Capital Controls: Evidence from Malaysia," *Journal of Financial Economics*, 2003, *67* (2), 351–382. 4

Karlan, Dean, Markus Mobius, Tanya Rosenblat, and Adam Szeidl, "Trust and Social Collateral," *Quarterly Journal of Economics*, 2009, *124* (3), 1307–61. 2, 5, 10

Khwaja, Asim Ijaz and Atif Mian, "Do Lenders Favor Politically Connected Firms? Rent Provision in an Emerging Financial Market," *The Quarterly Journal of Economics*, 2005, *120* (4), 1371–1411. 4

Knight, Brian, "Are Policy Platforms Capitalized into Equity Prices? Evidence from the Bush/Gore 2000 Presidential Election," *Journal of Public Economics*, 2007, *91* (1-2), 389–409. 4

Kung, James Kai-Sing and Titi Zhou, "Political Elites and Hometown Favoritism in Famine-stricken China," 2017. Working Paper. 1, 4

Larreguy, Horacio, John Marshall, and James Snyder, "Revealing Malfeasance: How Local Media Facilitates Electoral Sanctioning of Mayors in Mexico," *Economic Journal*, 2019, *Forthcoming.* 1

Lasswell, Harry D., *Politics: Who Gets What, When, How*, New York, NY: McGraw-Hill, 1936. 1

Lee, David, "Randomized Experiments from Non-Random Selection in U.S. House Elections," *Journal of Econometrics*, 2008, *142* (2), 675–697. 3, 5, 9

_ and Thomas Lemieux, "Regression Discontinuity Designs in Economics," *Journal of Economic Literature*, 2010, *48* (2), 281–355. 3, 8, 9, 10, 15

Leider, Stephen, Markus Möbius, Tanya Rosenblat, and Quoc-Anh Do, "Directed Altruism and Enforced Reciprocity in Social Networks," *The Quarterly Journal of Economics*, 2009, *124* (4), 1815–1851. 11

Lerner, Josh and Ulrike Malmendier, "With a Little Help from My (Random) Friends: Success and Failure in Post-Business School Entrepreneurship," *Review of Financial Studies*, 2013, *26* (10), 2411–2452. 2, 10

Levitt, Steven and James Poterba, "Congressional Distributive Politics and State Economic Performance," *Public Choice*, 1999, *99* (1-2), 185–216. 1

Marsden, Peter, "Network Data and Measurement," *Annual Review of Sociology*, 1990, *16*, 435–

63. 2

Mattozzi, Andrea, "Can we insure against political uncertainty? Evidence from the U.S. stock market," *Public Choice*, 2008, *137* (1), 43–55. 4

McPherson, Miller, Lynn Smith-Lovin, and James Cook, "Birds of a Feather: Homophily in Social Networks," *Annual Review of Sociology*, 2001, *27* (1), 415–444. 11, 26

Nguyen, Bang Dang, "Does the Rolodex Matter? Corporate Elite's Small World and the Effectiveness of Boards of Directors," *Management Science*, February 2012, *58* (2), 236–252. 10, 25

Polsby, Nelson and Eric Schickler, "Landmarks in the Study of Congress since 1945," *Annual Review of Political Science*, 2002, *5* (1), 333–367. 2

Ray, Bruce, "Military Committee Membership in the House of Representatives and the Allocation of Defense Department Outlays," *Western Political Quarterly*, 1981, *34* (2), 222–234. 1

Roberts, Brian, "A Dead Senator Tells No Lies: Seniority and the Distribution of Federal Benefits," *American Journal of Political Science*, 1990, *34* (1), 31–58. 1, 2, 3, 4

Rundquist, Barry and Thomas Carsey, *Congress and Defense Spending: The Distributive Politics of Military Procurement*, Norman, Oklahoma: University of Oklahoma Press, 2002. 1

_ , Jeong-Hwa Lee, and Jungho Rhee, "The Distributive Politics of Cold War Defense Spending: Some State Level Evidence," *Legislative Studies Quarterly*, 5 1996, *21*, 265. 1

Saiz, Albert and Uri Simonsohn, "Proxying for Unobservable Variables with Internet Document-Frequency," *Journal of the European Economic Association*, 2013, *11*, 137–165. 19, 36

Sapienza, Paola, Anna Toldra-Simats, and Luigi Zingales, "Understanding Trust," *Economic Journal*, 2013, *123* (12), 1313–1332. 24

Shleifer, Andrei and Robert Vishny, "Politicians and Firms," *Quarterly Journal of Economics*, 1994, *109* (4), 995–1025. 3, 4, 27

_ and _ , "A Survey of Corporate Governance," *The Journal of Finance*, 1997, *52* (2), 737–783. 24

Shue, Kelly, "Executive Networks and Firm Policies: Evidence from the Random Assignment of MBA Peers," *Review of Financial Studies*, 2013, *26* (6), 1401–1442. 2, 10, 25

Snowberg, Erik, Justin Wolfers, and Eric Zitzewitz, "Party Influence in Congress and the Economy," *Quarterly Journal of Political Science*, 8 2007, *2*, 277–286. 3

_ , _ , and _ , "How Prediction Markets Can Save Event Studies," in Leighton Williams, ed., *Prediction Markets: Theory and Application*, Routledge, 2011. 8

Stewart, Charles and Tim Groseclose, "The Value of Committee Seats in the United States Senate, 1947-91," *American Journal of Political Science*, 1999, *43* (3), 963–73. 2

Yermack, David, "Higher market valuation of companies with a small board of directors," *Journal of Financial Economics*, 1996, *40* (2), 185–211. 24

A Appendices to be made available online

A.1 Tables and Figures

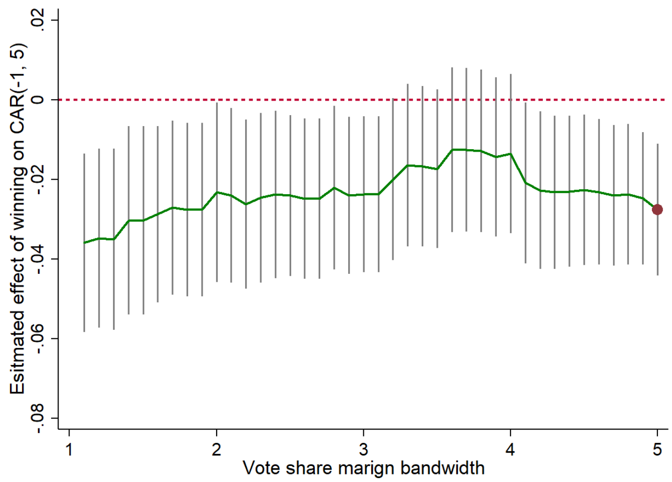
Table A1: Description of Variables

Variable	Description and construction
	Social network variables
Alumni	A firm's director and a Congress election candidate are counted as coming from the same alumni network if both graduate from the same university degree program. Following Cohen et al. (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. They are counted as classmates if they come from the same alumni network and they graduate within one year of each other. *Source: BoardEx, Lexis-Nexis biographies, and authors' manually collected data.*
Classmates	Two alumni are further counted as classmates if they come from the same alumni network and they graduate within one year of each other. *Source: As above.*
Top 15 universities	Indicator of the top 15 largest universities (among those represented in our baseline sample) in terms of total enrollment: (1) Arizona State University, (2) University of Florida, (3) Texas A&M University, (4) University of Texas at Austin, (5) Ohio State University, (6) University of Minnesota, (7) Pennsylvania State University, (8) Michigan State University, (9) University of Illinois, (10) New York University, (11) University of Wisconsin, (12) University of Michigan, (13) Brigham Young University, (14) University of Southern California, and (15) University od Arizona. *Source: http://www.matchcollege.com/top-colleges.*
Big-network universities	Indicator of the top three most represented universities in our director sample: Harvard University, Stanford University, and the University of Pennsylvania. *Source: BoardEx.*
Reunion year	Indicator of whether the election year coincides with the most recent alumni reunion. *Source: Authors' manually collected data.*
	Politician variables
Educational background	Biographies in (i) Who's Who in American Politics, (ii) Member Biographical Profiles – Current Congress, (iii) World Almanac of U.S. Politics, and (iv) The Almanac of American Politics. 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. For biographies unavailable in Who's Who (especially for defeated candidates), we search the Library of Congress Web Archives which cover multiple versions of Congress election candidates' websites archived at different moments during the electoral campaign. *Source: Lexis-Nexis biographies, Library of Congress Web Archives, authors' manually collected data.*
Gender	The politician's gender. *Source: As above.*
Age	The politician's age. *Source: As above.*
Level of experience	The politician's prior political experience, which takes value of 0 when the politician has immediate prior position (State politics experience = 1), 1 – the politician has no prior experience in either state politics or Congress (No political experience = 1), 2 – the politician has prior experience only in the House (but not state politics or the Senate) (House experience = 1), and 3 – the politician has prior experience in the Senate (Senate experience = 1). *Source: As above.*
Vote shares	The vote share between the top two candidates (ignoring all other candidates' votes). *Source: Federal Election Commission (FEC).*
House/Senate	Indicator of whether the race is for House of Representatives or Senate. *Source: FEC.*
Incumbency	Indicator of whether the politician is the incumbent candidate. *Source: FEC.*
Party affiliation	The politician's party affiliation. *Source: FEC.*
Campaign contribution	Total campaign contribution (in dollar value) that the politician receives. *Source: FEC*
Number of contributors	Total number of contributors towards the politician's campaign. *Source: FEC.*

Media mention	The number of search hits for the politician's name on his state's newspapers based on Newslibrary.com, normalized by the number of search hits for the neutral keyword "September". To avoid misclassification, we pay particular attention to politicians having common first and last names to avoid false positive search hits, as done in Campante and Do (2014). *Source: http://www.newslibrary.com.*
	Director variables
Educational background	BoardEx provides information on directors' attained undergraduate and graduate degrees, the years in which those degrees were awarded, and the awarding institutions. *Source: BoardEx.*
Gender	The director's gender. *Source: BoardEx.*
Age	The director's age. *Source: BoardEx.*
Executive director	Indicator of whether director has an executive role. *Source: BoardEx.*
Tenure	The director's tenure in the firm. *Source: BoardEx.*
	State variables
Average logarithm of distance (ALD)	ALD is calculated as the average of the natural logarithm of the distance from a state's inhabitants to its capital city. *Source: Campante and Do (2014).*
State election turnout	The average voter turnout rate in state elections over 2000-2008 minus average turnout rate in presidential elections in 2000, 2004, and 2008 (each rate is normalized by the state's voting-age population based on the U.S. census). *Source: David Leip's Atlas of U.S. Presidential Elections, http://www.uselectionatlas.org, U.S. Census.*
Political interest	The share of answers to the question *"How much would you say that you personally care(d) about the way the election to the Congress came out?"* as "very much" or "pretty much", as opposed to "not very much" or "not at all", averaged for each state over 2000-2008. *Source: American National Election Studies (ANES).*
Media exposure	The share of respondents following election news via television, newspaper, or radio, averaged for each state over 2000-2008. *Source: ANES.*
Corrupt main city	The number of search hits for the term "corruption" near the name of the main city in each state gathered in on Exalead.com, normalized by the number of search hits for the name of that main city in 2009 (Saiz and Simonsohn, 2013). *Source: http://www.exalead.com/search.*
Corrupt state	The number of search hits for the word "corruption" close to the state name based on all newspapers based on Newslibrary.com, normalized the resulting number of search hits by that for the state name alone in 2009 (Campante and Do, 2014). *Source: http://www.newslibrary.com.*
Conviction cases	The number of federal convictions for public corruption between 1976 and 2002, normalized by average population in the corresponding state during the same period, as used in Glaeser and Saks (2006). *Source: Department of Justice.*
Regulation	State-level regulation index as used in Glaeser and Saks (2006). It combines information on labor and environmental regulations and regulations in specific industries such as insurance, measured in 1999. *Source: Clemson University's Report on Economic Freedom, http://www.freedom.clemson.edu.*
Generalized trust	The share of answers to the standard trust question *"Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?"* as "most people can be trusted", as opposed to "can't be too careful" or "other, depends"), averaged for each state over 2000-2008. *Source: ANES.*
	Firm and stock variables
Cumulative Abnormal Return (CAR)	CARs are calculated as cumulation of Abnormal Returns (ARs) in specific windows, with the benchmark window (-1,5) counts from 1 day before to 5 days after the election day (day 0). ARs are estimated from a market model of return prediction using daily data from day -315 to day -61. CAR-FF uses the Fama-French (Fama and French, 1993) three-factor model instead. CAR-FFM uses the Fama-French plus momentum four-factor model instead (Carhart, 1997). *Source: CRSP, Fama and French (1993), Carhart (1997).*
Standardized CAR (SCAR)	SCARs are CARs normalized by volatility during the event period. *Source: CRSP.*
Abnormal trading volume	Abnormal trading volumes are calculated around the election day (day 0), based on the market model using daily data from day -315 to day -61 (Campbell and Wasley, 1996). *Source: CRSP.*
Market value of equity	Market value of total equity (CSHO × PRCC_F). *Source: CRSP.*
Common equity	Book value of common equity (CEQ). *Source: Compustat.*

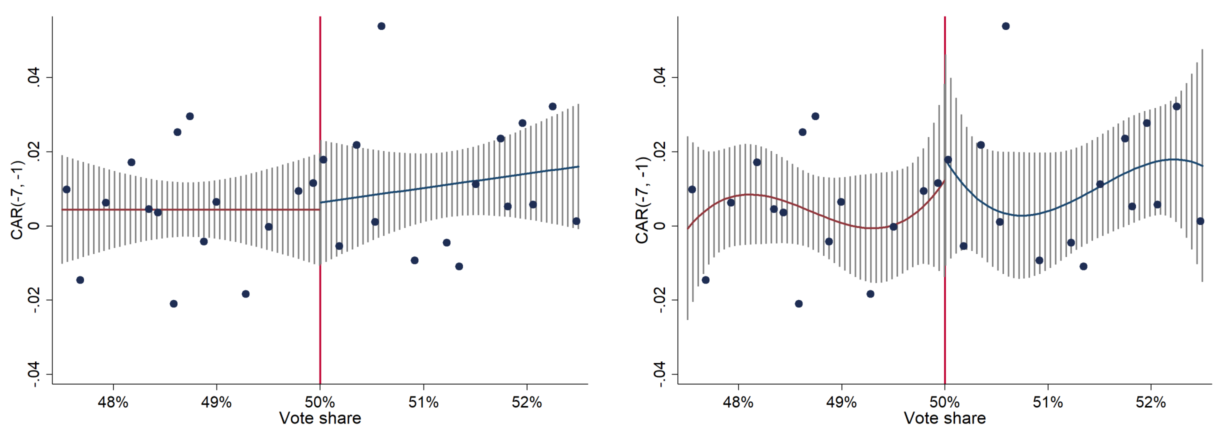
Market to book ratio	Market value of total equity (CSHO $\times$ PRCC_F)/book value of common equity (CEQ). *Source: Compustat.*
Firm age	The number of years from IPO or the start of Compustat coverage. *Source: Compustat.*
Total assets	The firm's total assets (AT). *Source: Compustat.*
Total sales	The firm's total sales (SALE). *Source: Compustat.*
Total employment	The firm's total employment (EMP). *Source: Compustat.*
Capital expenditure	Capital expenditure (CAPX)/total assets (AT). *Source: Compustat.*
Return on asset (ROA)	Income before extraordinary items (IB)/total assets (AT) at $t-1$. *Source: Compustat.*
Book leverage ratio	Book value of debts (DLC + DLTT)/book value of total assets (DLC + DLTT + CEQ). *Source: Compustat.*
Tobin's Q	Total assets (AT) - total shareholder's equity (SEQ) + market value of total equity (CSHO $\times$ PRCC_F)/total assets. *Source: Compustat.*
Board size	The number of directors on the firm's board. *Source: BoardEx.*
Institutional block shares	The fraction of institutional shareholding. *Source: Thomson Reuters.*
Local firm	Indicates whether a firm's headquarter is in the politician's state or within 500 kilometers of the state's capital. *Source: BoardEx.*
Distance to state capital	Geodesic distance between the firm's headquarter ZIP code and election state's capital. *Source: BoardEx.*
Distance to Washington D.C.	Geodesic distance between the firm's headquarter ZIP code and Washington D.C. *Source: BoardEx.*
Local media presence	The number of search hits for the firm's name in the state's local newspaper based on Newslibrary.com, normalized by the number of search hits for the neutral keyword "September." *Source: http://www.newslibrary.com.*

Figure A1: Sensitivity Tests Using Alternative Sample Restrictions



Notes: This figure plots RDD estimates of firms' differential value of Congress connection, as well as their 95% confidence intervals, for different values of the bandwidth used in the RDD specification in equation (4).

Figure A2: No Discontinuity in Pre-Election Market Reaction

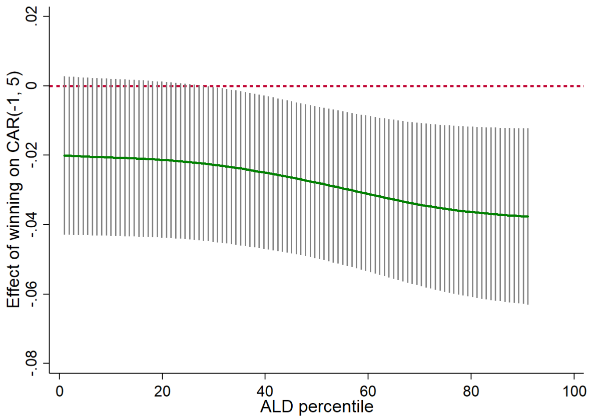


A. Linear fit

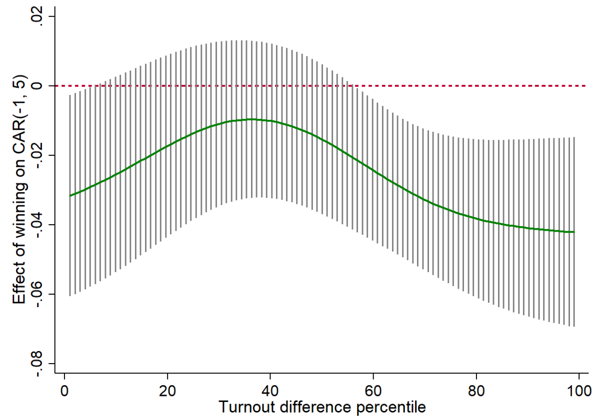
B. Cubic fit

Notes: This figure plots the estimated discontinuity in connected firms' fitted cumulative abnormal returns (CARs) between days -7 and -1 at the 50% vote share threshold and their 95% confidence intervals. Subfigure A fits separate linear functions of vote shares on either side of the threshold, as described in equation (4), and shows the discontinuity estimate of 0.2% (column 1 of Panel B of Table 2). Analogously, subfigure B uses third-order polynomials of vote shares, yielding an estimate of 0.6%. Both estimates are not statistically different from zero. 15 dots on each side of the threshold represent approximately equal-sized bins of observations.

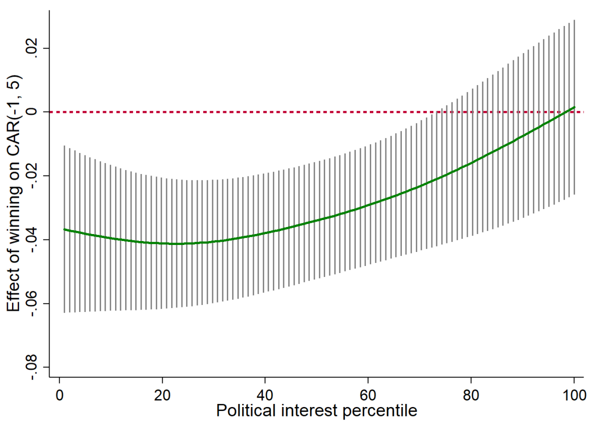
Figure A3: Effect by Degree of Scrutiny



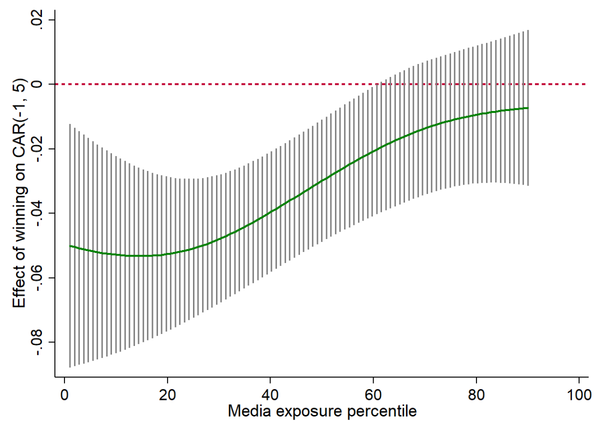
A. State's ALD to capital city



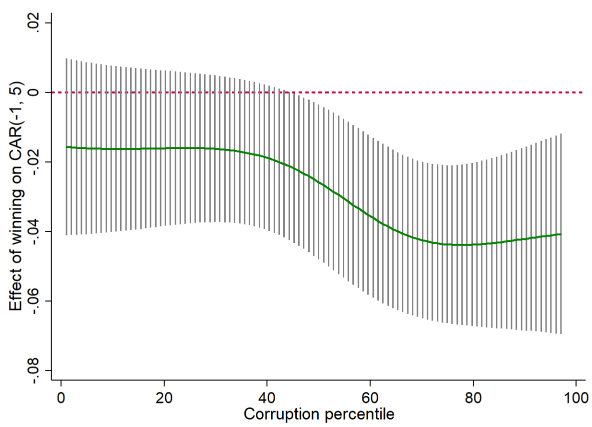
B. State-level difference in voter turnouts



C. Voters' political interest



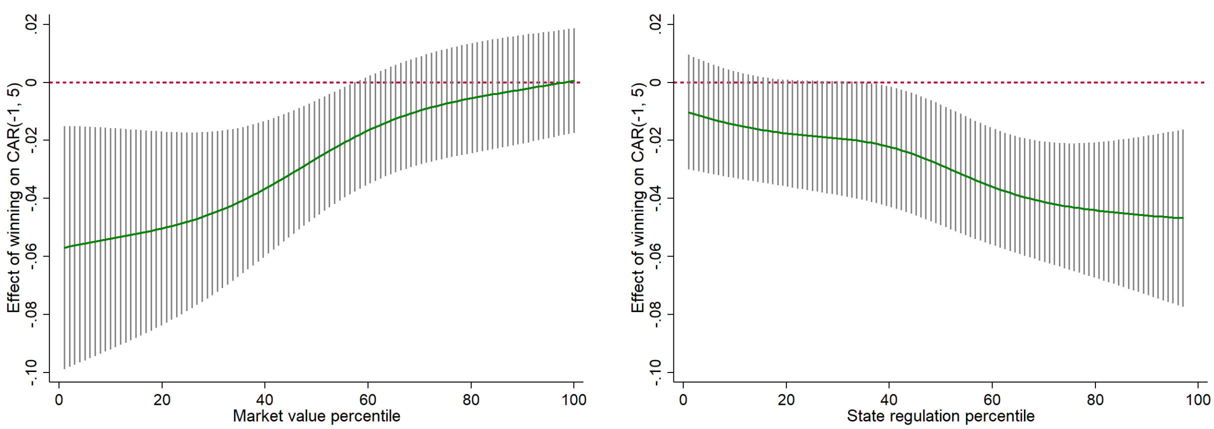
D. Voters' election media exposure



E. State's corruption level

Notes: This figure plots semi-parametric estimates of differential value of Congress-level connection to firms ΔV as a function of percentiles of proxies for the degree of scrutiny at state and federal levels, together with their 95% confidence intervals. The point estimate at each value of the X-axis variable is obtained from the baseline RDD regression in equation (4), weighted by a Gaussian kernel function of the percentile on the X-axis with a bandwidth equal to 20% (details in Appendix A.4). Standard errors are clustered by politician. The X-axis shows percentiles of variables that are described in Section 5.2 and notes to Table 4.

Figure A4: Effect by Benefits of Connection to Firm

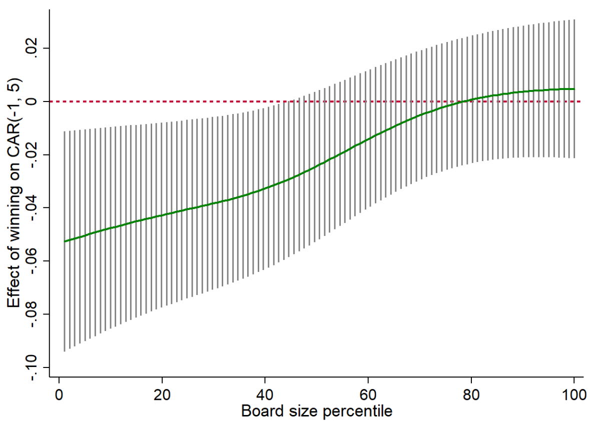


A. Firm's market value

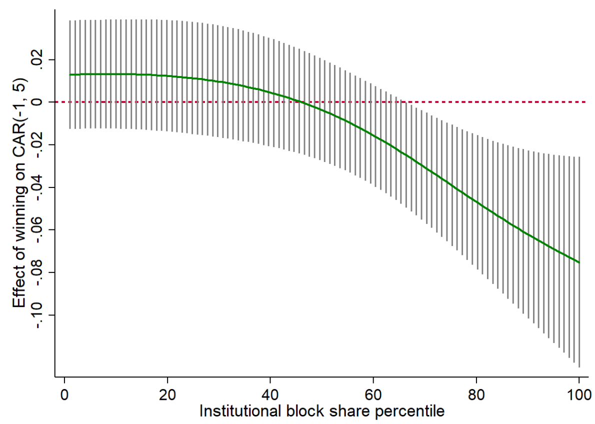
B. State's regulation index

Notes: This figure plots semi-parametric estimates of differential value of Congress-level connection to firms ΔV as a function of percentiles of proxies for the benefits of state- and federal-level connections to the firm, together with their 95% confidence intervals. The point estimate at each value of the X-axis variable is obtained from the baseline RDD regression in equation (4), weighted by a Gaussian kernel function of the percentile on the X-axis with a bandwidth equal to 20% (details in Appendix A.4). Standard errors are clustered by politician. The X-axis shows percentiles of variables that are described in Section 5.4 and notes to Table 6.

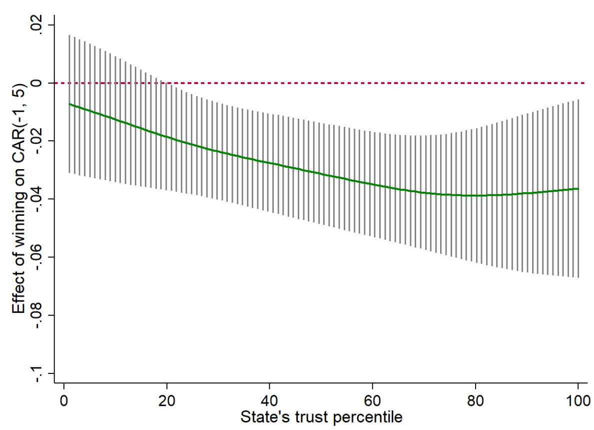
Figure A5: Effect by Strength of Firm-Politician Relationship



A. Firm's board size



B. Firm's institutional block shares



C. State's generalized trust level

Notes: This figure plots semi-parametric estimates of differential value of Congress-level connection to firms ΔV as a function of percentiles of proxies for the strength of the relationship between firms and politicians, together with their 95% confidence intervals. The point estimate at each value of the X-axis variable is obtained from the baseline RDD regression in equation (4), weighted by a Gaussian kernel function of the percentile on the X-axis with a bandwidth equal to 20% (details in Appendix A.4). Standard errors are clustered by politician. The X-axis shows percentiles of variables that are described in Section 5.4 and notes to Table 7.

Table A2: Distribution of Degree Program and Graduation Year

Degree program	Politicians	Directors	Conn. pairs	Graduation year	Politicians	Directors	Conn. pairs
Business school	5.9%	4.7%	4.4%	$<$ 1950	0.5%	0.2%	0.2%
Medical school	0.5%	0.1%	0.1%	1950-1959	4.7%	3.6%	3.4%
General graduate	8.2%	3.8%	3.5%	1960-1969	22.5%	34.2%	38.2%
Ph.D.	1.4%	0.5%	0.5%	1970-1979	42.4%	43.5%	40.6%
Law school	11.8%	3.8%	3.5%	1980-1989	22.5%	14.7%	13.8%
Undergraduate	72.3%	87.1%	88.0%	$\geq$ 1990	7.3%	3.8%	3.7%

Notes: This table reports the distribution of degree program and graduation year among connected politician-director pairs in our baseline sample. A politician and a director are considered connected if they graduated from the same university, campus, and degree program combination within one year of each other. All academic degrees are classified into one of the above six program categories, following Cohen et al. (2008).

Table A3: Baseline Firms' Characteristics Compared to Compustat Firms

Sample	Baseline sample			Compustat universe		
	Mean	Median	Std. dev.	Mean	Median	Std.dev.
Firm's age (year)	18.91	13.00	15.63	15.30	11.00	13.16
Market value ($ million)	6,367	656.4	27,541	3,548	290.1	16,661
Common equity ($ million)	2,013	234.3	8,210	1,347	127.2	6,301
Market-to-book ratio	2.925	2.183	27.19	4.684	1.950	92.31
Total assets ($ million)	11,613	719.2	76,819	8,141	379.9	70,219
Sales ($ million)	3,773	390.3	13,143	2,627	188.5	11,976
Employment (thousand)	12.91	1.400	40.07	9.080	0.775	38.09
Capital expenditure/assets	233.8	13.23	982.4	187.9	7.743	1,040
Return on assets (%)	-4.087	2.631	39.08	-4.976	1.612	49.54
Book leverage ratio	0.372	0.336	0.744	0.344	0.301	10.80
Tobin's Q	2.363	1.495	3.731	2.422	1.394	4.623

Notes: This table reports the characteristics of the 1,268 firms in our baseline sample and compares them to firms in the Compustat universe (which include all firms within Compustat in 2000, 2002, 2004, 2006, and 2008).

Table A4: RDD Randomness Checks

Panel A. Politician characteristics

Sample		Politician × Election year				Baseline			
Dependent variable		Winner	S.E.	*Mean*	Obs.	Winner	S.E.	*Mean*	Obs.
1	Indicator (I): Gender = Male	0.072	(0.116)	*0.781*	192	0.094	(0.119)	*0.842*	1,792
2	Age at election year (year)	-1.638	(2.290)	*52.83*	192	2.837	(2.090)	*54.70*	1,792
3	I: Attended brand-name university	-0.032	(0.121)	*0.245*	192	-0.210	(0.231)	*0.496*	1,792
4	I: Senate election candidate	0.049	(0.114)	*0.203*	192	0.094	(0.229)	*0.304*	1,792
5	I: Incumbent candidate	-0.100	(0.136)	*0.375*	192	-0.173	(0.194)	*0.331*	1,792
6	I: Party affiliation = Democrat	0.009	(0.138)	*0.526*	192	0.351*	(0.184)	*0.581*	1,792
7	I: Same party as chamber majority	0.182	(0.142)	*0.484*	192	-0.156	(0.221)	*0.489*	1,792
8	I: Same party as presidency	0.045	(0.141)	*0.469*	192	-0.183	(0.203)	*0.400*	1,792
9	I: Experience in state politics	-0.156	(0.136)	*0.333*	192	-0.171	(0.196)	*0.329*	1,792
10	Level of prior experience	-0.080	(0.294)	*1.146*	192	-0.280	(0.422)	*1.098*	1,792
11	Local media presence in election year	-0.005	(0.076)	*0.146*	192	-0.033	(0.056)	*0.146*	1,792
12	Total campaign contribution	-0.507	(0.810)	*2.246*	192	0.122	(1.565)	*2.596*	1,792
13	Number of contributors	-128.5	(128.6)	*576.8*	192	-318.2	(203.2)	*564.7*	1,792
14	Number of connected directors	1.628	(2.362)	*7.286*	192	1.147	(5.530)	*16.76*	1,792
15	Number of connected firms	2.786	(3.100)	*9.193*	192	3.618	(7.689)	*22.38*	1,792

Panel B. Director characteristics

Sample		Director × Politician × Year				Baseline			
Dependent variable		Winner	S.E.	*Mean*	Obs.	Winner	S.E.	*Mean*	Obs.
16	I: Gender = Male	-0.018	(0.037)	*0.916*	1,399	-0.032	(0.041)	*0.903*	1,792
17	Age at election year (year)	2.583	(2.127)	*54.32*	1,399	2.278	(2.046)	*54.54*	1,792
18	Number of years since graduation	2.966	(2.152)	*31.62*	1,399	2.989	(2.140)	*31.82*	1,792
19	I: Link via big-name university	-0.142	(0.213)	*0.420*	1,399	-0.159	(0.219)	*0.438*	1,792
20	I: Link via big-size university	0.101	(0.095)	*0.158*	1,399	0.072	(0.096)	*0.152*	1,792
21	I: Link via undergraduate program	0.033	(0.062)	*0.869*	1,399	0.064	(0.070)	*0.867*	1,792
22	Number of related firms	0.112	(0.078)	*1.281*	1,399	0.553*	(0.313)	*1.672*	1,792
23	I: Executive director (avg.)	-0.058	(0.050)	*0.206*	1,399	-0.070	(0.046)	*0.179*	1,792
24	Tenure in firm at election year (avg.)	-0.973	(0.721)	*4.627*	1,399	-0.856	(0.683)	*4.511*	1,792

Panel C. State characteristics

Sample		State × Politician × Year				Baseline sample			
Dependent variable		Winner	S.E.	*Mean*	Obs.	Winner	S.E.	*Mean*	Obs.
25	Average log distance to capital city	-0.026	(0.026)	*0.300*	189	0.020	(0.039)	*0.304*	1,753
26	Difference in voter turnouts	-0.006	(0.010)	*0.180*	167	-0.014	(0.014)	*0.183*	1,613
27	Voters' political interest	0.011	(0.023)	*1.675*	189	0.033	(0.034)	*1.679*	1,753
28	Voters' election media exposure	0.002	(0.004)	*0.974*	189	0.001	(0.004)	*0.974*	1,753
29	State's corruption level	0.181*	(0.104)	*0.259*	192	0.169	(0.169)	*0.225*	1,792
30	State's regulation index in 1999	0.073	(0.133)	*6.148*	192	-0.058	(0.185)	*6.151*	1,792
31	State's generalized trust level	0.010	(0.036)	*0.482*	189	-0.000	(0.057)	*0.474*	1,753

Panel D. Firm characteristics

Sample		Firm × Politician × Year				Baseline			
Dependent variable		Winner	S.E.	*Mean*	Obs.	Winner	S.E.	*Mean*	Obs.
32	Age at election year (year)	1.849	(1.696)	*18.92*	1,759	1.989	(1.693)	*18.91*	1,786
33	Lagged market value ($ billion)	2.203	(3.993)	*6.457*	1,689	2.175	(3.922)	*6.367*	1,716
34	Lagged common equity ($billion)	0.925	(0.976)	*2.040*	1,715	0.915	(0.954)	*2.013*	1,742
35	Lagged market-to-book ratio	1.972	(2.182)	*2.914*	1,652	2.103	(2.120)	*2.935*	1,679
36	Lagged total assets ($ billion)	-0.855	(8.733)	*11.77*	1,716	-0.748	(8.555)	*11.61*	1,743
37	Lagged total sales ($ billion)	2.521	(2.088)	*3.812*	1,714	2.542	(2.038)	*3.773*	1,741
38	Lagged total employment (thousand)	4.537	(3.693)	*13.04*	1,686	4.667	(3.599)	*12.91*	1,713
39	Lagged capital expenditure/assets	0.003	(0.006)	*0.044*	1,638	0.002	(0.006)	*0.044*	1,663
40	Lagged return on assets	-0.032	(0.036)	*-0.039*	1,714	-0.039	(0.037)	*-0.041*	1,741
41	Lagged book leverage ratio	-0.020	(0.104)	*0.372*	1,708	-0.018	(0.102)	*0.372*	1,735
42	Lagged Tobin's Q	0.288	(0.351)	*2.355*	1,652	0.338	(0.351)	*2.363*	1,679
43	Lagged board size	-0.109	(0.543)	*9.469*	1,210	-0.145	(0.545)	*9.453*	1,227
44	Lagged institutional block shares	0.007	(0.020)	*0.226*	1,061	0.008	(0.020)	*0.227*	1,074
45	Local media presence in election year	0.017	(0.042)	*0.054*	1,759	0.015	(0.041)	*0.054*	1,786
46	I: Local firm	-0.087	(0.094)	*0.248*	1,765	-0.093	(0.096)	*0.251*	1,792
47	Distance to state capital (km)	146.2	(168.7)	*1,509*	1,765	168.1	(169.6)	*1,500*	1,792
48	Distance to Washington D.C. (km)	524.6	(387.4)	*1,241*	1,726	492.7	(389.8)	*1,241*	1,753
49	Number of connected directors	-0.270	(0.176)	*1.126*	1,765	-0.265	(0.173)	*1.124*	1,792

Notes: This table reports the differences between closely elected and defeated candidates and between their connected directors, firms, and states, using the baseline RDD specification in equation (4) with different dependent variables.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

Table A5: Robustness Checks for Value of Congress-Level Connection to Firms

Panel A: Alternative specifications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: CAR(-1, 5)							
Specification	Alt. clusterings			Alt. obs. unit	Alt. kernels & samples			
Winner	-0.028***	-0.028***	-0.028***	-0.026***	-0.021**	-0.021**	-0.030***	-0.030***
	(0.010)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.011)	(0.011)
Clustering scheme	Firm	Director	Two-way					
Observation unit				Pol. × Firm				
Kernel function					Tri	Epa	Tri	Epa
Sample selection							CCT	CCT
Observations	1,792	1,792	1,792	1,765	1,792	1,792	597	1,792
Politicians	170	170	170	170	170	170	66	170
Directors	1,171	1,171	1,171	-	1,171	1,171	435	1,171
Firms	1,268	1,268	1,268	1,268	1,268	1,268	507	1,268

Panel B: Alternative CAR models

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	**SCAR(-1, 5)**		**CAR(-1, 5)**					
Model	Baseline MM		Raw		FF		FFM	
Winner	-0.338***	-0.416***	-0.020	-0.043*	-0.024***	-0.026**	-0.027***	-0.028***
	(0.125)	(0.151)	(0.019)	(0.023)	(0.008)	(0.011)	(0.007)	(0.010)
University FEs		X		X		X		X
Observations	1,792	1,792	1,792	1,792	1,792	1,792	1,791	1,791
Politicians	170	170	170	170	170	170	170	170
Directors	1,171	1,171	1,171	1,171	1,171	1,171	1,171	1,171
Firms	1,268	1,268	1,268	1,268	1,268	1,268	1,267	1,267

Notes: This table reports the robustness checks for the benchmark average differential value of Congress-level connection to firms ΔV, which is estimated using the baseline RDD specification in equation (4) and reported in column 1 of Table 2. **Panel A:** Columns 1-3 cluster standard errors (i) by firm, (ii) by director, and (iii) two-way by politician and firm respectively. Each observation in column 4 is a combination of politician p, connected firm f, and election year t. Columns 5 and 6 use triangle and Epanechnikov kernel weights, and columns 7 and 8 use samples selected by Calonico et al.'s (2014) method with triangle and Epanechnikov kernel weights respectively. **Panel B:** Columns 1 and 2's use standardized CARs (CARs normalized by volatility during the event period) computed using the baseline market model as the dependent variable. Columns 3 and 4 use raw returns. Columns 5 and 6 use CARs computed based on the Fama and French's (1993) three-factor model. Columns 7 and 8 use CARs based on Fama and French's (1993) plus Carhart's (1997) momentum four-factor models. Columns 2, 4, 6, and 8 additionally include university fixed effects. Standard errors are clustered by politician unless noted otherwise.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

Table A6: Greater Scrutiny of Winners Post Election

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: Media mention in local newspapers							
Time period	Year -1	Year 0	Year 1	Year 2	$\Delta(-1,1)$		Δ(pre, post)	
Politician sample	All politicians				Challengers	Incumbents	Challengers	Incumbents
Winner	-0.013	-0.005	0.099*	0.081*	0.096***	0.122***	0.079***	0.112**
	(0.050)	(0.076)	(0.053)	(0.044)	(0.032)	(0.044)	(0.027)	(0.050)
Observations	192	192	192	192	120	72	120	72
Politicians	170	170	170	170	115	64	115	64

Notes: The table reports the difference in media mention of winning and defeated politicians before and after the election, using an RDD specification similar to that in equation (4) with media mention of the politician as the dependent variable. Each observation is an politician p in election year t (politician p is a close-election top-two candidate in election year t). Media mention is measured by the normalized hit rate from a search for the politician in local newspapers based on Newslibrary.com, from year -1 (column 1) to year 2 (column 4). Columns 5-8's dependent variables are the changes in media mention of the politician between year 1 and year -1 (columns 5 and 6), and between pre-election (years -1 and 0) and post-election (years 1 and 2) election periods (columns 7 and 8). Columns 5 and 7 consider challenger politicians and columns 6 and 8 – incumbent politicians. All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

Table A7: Effect by State Corruption Level

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: CAR(-1, 5)					
Proxy for corruption	Search hits w. city name		Search hits w. state name		Conviction cases	
State sample	High	Low	High	Low	High	Low
Win/Lose	-0.056***	-0.008	-0.048***	-0.013	-0.044***	-0.015
	(0.014)	(0.011)	(0.012)	(0.012)	(0.013)	(0.011)
Difference	*-0.048****		*-0.035***		*-0.029**	
	(0.018)		*(0.017)*		*(0.017)*	
Observations	860	932	912	880	840	952
Politicians	97	73	102	68	89	81
Directors	607	633	649	605	602	635
Firms	684	763	734	724	689	751

Notes: This table reports how the differential value of Congress-level connection to firms ΔV varies by the degree of state corruption level, using the baseline RDD specification in equation (4). High corruption level implies small γ_1 and γ_2. Columns 1 and 2 measure corruption based on the number of search hits on Exalead.com for the term "corruption" near the name of the main city in each state, normalized by the number of search hits for the name of that main city. Columns 3 and 4 measure corruption based on the number of search hits on Exalead.com for the term "corruption" near the name of the state, normalized by the number of search hits for the name of that state. Columns 5 and 6 measure corruption based on the number of federal convictions for public corruption between 1976 and 2002, normalized by average population in the corresponding state during the same period (Glaeser and Saks, 2006). All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

Table A8: Effect by Politician's Age

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: CAR(-1, 5)							
Politician sample	All	≤ 55	> 55	Age Q1	Age Q2	Age Q3	Age Q4	Age Q5
Winner	-0.029***	-0.049***	-0.016	-0.062***	-0.038	-0.025	-0.015	0.000
	(0.008)	(0.014)	(0.010)	(0.022)	(0.023)	(0.019)	(0.017)	(0.012)
W $\times$ Pol.'s age	0.003**							
	(0.001)							
Difference		*-0.033***						
		(0.016)						
Observations	1,792	861	931	379	412	312	360	329
Politicians	170	106	68	64	36	32	18	31
Directors	1,171	606	597	296	289	218	237	242
Firms	1,268	695	706	335	354	265	305	296

Notes: This table reports how the differential value of Congress-level connection to firms ΔV varies by the politician's age, using the baseline RDD specification in equation (4). Column 1 interacts the treatment (i.e., winning the election) with the politician's age. Columns 2 and 3 compare subsamples of younger (at most 55) and older (above 55) politicians. Columns 4 to 8 consider the subsamples of politicians in age quintile 1 to 5. All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

Table A9: Effect in Subsamples of Challengers and Incumbents

Panel A: Subsample of challengers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: CAR(-1, 5)							
	All	Prior experience	Election type		Party affiliation		President's party	
Politician sample	challengers	State politics	Senate	House	Democrat	Republican	Same	Different
Winner	-0.034***	-0.048***	-0.054*	-0.033**	-0.040***	-0.033	-0.025	-0.037***
	(0.011)	(0.013)	(0.029)	(0.015)	(0.012)	(0.020)	(0.020)	(0.011)
Observations	1,199	590	416	783	871	328	352	847
Politicians	115	61	27	88	74	41	40	76
Directors	838	448	310	567	640	236	267	618
Firms	961	518	381	673	742	302	332	734

Panel B: Subsample of incumbents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: CAR(-1, 5)							
	All	Prior experience	Election type		Party affiliation		President's party	
Politician sample	incumbents	Appropriations	Senate	House	Democrat	Republican	Same	Different
Winner	-0.013	0.074**	0.086***	-0.010	0.026	-0.026	-0.014	-0.025
	(0.014)	(0.027)	(0.017)	(0.018)	(0.029)	(0.017)	(0.020)	(0.022)
Observations	593	58	129	464	171	422	364	229
Politicians	64	9	12	52	21	43	44	21
Directors	440	40	103	338	131	311	270	175
Firms	517	47	127	401	152	384	332	207

Notes: This table reports the differential value of Congress-level connection to firms ΔV using the baseline RDD specification in equation (4), separately for firms connected to challenger candidates (Panel A) and firms connected to incumbent candidates (Panel B). Column 1 considers the subsample of all challengers (incumbents) and column 2 – challengers with immediate prior experience in state politics (Panel A) or incumbents in Appropriations Committees (Panel B). Columns 3 and 4 compare challengers (incumbents) in Senate and House elections; columns 5 and 6 – Democrat and Republican challengers (incumbents); and columns 7 and 8 – challengers (incumbents) belonging and not belonging to the same party as the contemporaneous President. All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

Table A10: Effect by School Network Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Dependent variable: CAR(-1, 5)								
Network definition	At most one year apart						Alumni		
Network sample	Harvard	Others	Big nw.	Others	Ivy Lg.	Others	Harvard	Big nw.	Ivy Lg.
Winner	-0.057***	-0.024**	-0.055***	-0.024**	-0.034***	-0.023**	-0.024**	-0.024***	-0.013
	(0.011)	(0.009)	(0.012)	(0.009)	(0.012)	(0.011)	(0.009)	(0.008)	(0.008)
Difference	*-0.034*****		*-0.031**		*-0.011*				
	(0.014)		*(0.014)*		*(0.015)*				
Observations	212	1,580	343	1,449	695	1,097	5,995	7,540	12,306
Politicians	22	161	26	157	40	151	24	28	45
Directors	142	1,031	244	929	390	783	803	1,521	2,634
Firms	175	1,132	297	1,033	493	864	1,025	1,656	2,370

Notes: This table reports how the value of Congress-level connection to firms ΔV varies with the university network characteristics, using the baseline RDD specification in equation (4). Columns 1 and 2 compare Harvard and non-Harvard networks. Columns 3 and 4 compare three most represented networks in our director sample (Harvard University, Stanford University, and the University of Pennsylvania) and the remaining networks. Columns 5 and 6 compare Ivy League and non-Ivy League networks. Columns 7-9 consider the full alumni network of Harvard University (column 7), column 3's top three universities (column 8), and Ivy League schools (column 9). All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

Table A11: Controlling for Homophily

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent variable: CAR(-1, 5)						
	Same institution definition			Year difference		Network sample	
Network sample	Baseline	Loose	Strict	10 years	5 years	Harvard	Big network
Winner × Classmate	-0.033***	-0.030***	-0.039***	-0.032***	-0.031***	-0.030**	-0.036**
	(0.010)	(0.009)	(0.009)	(0.010)	(0.011)	(0.011)	(0.014)
Winner	0.002*	0.001	0.001	0.009*	0.007	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.005)	(0.007)	(0.001)	(0.001)
University × Election year FEs	X	X	X	X	X	X	X
Observations	27,394	29,049	30,910	11,238	6,204	5,995	7,540
Politicians	219	221	219	215	196	24	28
Directors	9,027	9,408	8,769	5,192	3,330	803	1,521
Firms	4,257	4,323	4,254	3,441	2,731	1,025	1,656

Notes: This table compares the effect of close election outcome on firms connected to the running candidates through the classmate network and those connected only through the alumni network, using equation (5) which controls for a full set of university-by-election year fixed effects. Columns 1 and 3 vary the same institution definition (see notes to Table 8 for details). Columns 4 and 5 restrict the samples to only politician-director pairs that are at most 10 years (column 4) or 5 years (column 5) apart in school. Columns 6 and 7 consider the alumni network of Harvard University (column 7) and top three most represented universities in our director sample (Harvard University, Stanford University, and the University of Pennsylvania) (column 8). All standard errors are clustered by politician.
*** denotes statistical significance at 1% level, ** 5% level, * 10% level.

A.2 Details of the model

We resume the theoretical setting in section 2, first under a set of more general assumptions:

Assumption A1 *Assume that $w(\cdot)$ and $v(\cdot)$ are increasing, concave, and differentiable, and P_{22} and P_{12} (P_{21} and P_{11}) are decreasing (increasing) convex functions of x.*

The politician's dynamic problem can be written in the following Bellman equations, such that the politician chooses the optimal amounts $x^*_{s,t}$, $s \in \{1,2\}$, to maximize $W_{s,t}$, given the future expected values $W_{s',t+1}$, $s' \in \{1,2\}$, discount factor $\delta \in (0,1)$ and transition probabilities $P_{ss't}(x_{s,t})$.

$$\begin{aligned} W_{1,t} &= \max_{x_{1,t}}[r_1 + w_1(x_{1,t}) + \delta P_{11,t}(x_{1,t})W_{1,t+1} + \delta P_{12,t}(x_{1,t})W_{2,t+1}], \\ W_{2,t} &= \max_{x_{2,t}}[r_2 + w_2(x_{2,t}) + \delta P_{21,t}(x_{2,t})W_{1,t+1} + \delta P_{22,t}(x_{2,t})W_{2,t+1}]. \end{aligned} \tag{A1}$$

$$\begin{aligned} V_{1,t} &= v_1(x^*_{1,t}) + \delta P_{11,t}(x^*_{1,t})V_{1,t+1} + \delta P_{12,t}(x^*_{1,t})V_{2,t+1}, \\ V_{2,t} &= v_2(x^*_{2,t}) + \delta P_{21,t}(x^*_{2,t})V_{1,t+1} + \delta P_{22,t}(x^*_{2,t})V_{2,t+1}, \end{aligned} \tag{A2}$$

with $t \in \{1,2,\ldots,T\}$ and $W_{s,T+1} = V_{s,T+1} = 0$, $s \in \{1,2\}$. We consider a finite-horizon (non-stationary) problem to illustrate the evolution of the values of connections. The infinite-horizon, stationary problem, in which T is replaced by ∞ yields similar predictions on the comparative statics of ΔV with respect to the parameters of interest.

We further use the state-difference operator Δ to denote $\Delta\tilde{P}_t \overset{def}{\equiv} P_{11,t} - P_{21,t} = P_{22,t} - P_{12,t} \geq 0$, and take the differences between the equations in (A1) and (A2), and deduce equations (1) and (2) in section 2 as recited below for convenience:

$$\begin{aligned} \Delta W_t &= \Delta r + \Delta w_t + \delta\Delta\tilde{P}_t \Delta W_{t+1}, \\ \Delta V_t &= \Delta v_t + \delta\Delta\tilde{P}_t \Delta V_{t+1}. \end{aligned}$$

Proposition A2 *The model admits a unique equilibrium $(x^*_{s,t}, W_{s,t})_{t=1,\ldots,T,s\in\{1,2\}}$. In the last period $x^*_{s,T} = \bar{x}$, and for all $t < T$ the following first order conditions hold:*

$$\begin{aligned} w'_1(x^*_{1,t}) - \delta P'_{11,t}(x^*_{1,t})\Delta W_{t+1} &= 0, \\ w'_2(x^*_{2,t}) - \delta P'_{21,t}(x^*_{2,t})\Delta W_{t+1} &= 0. \end{aligned} \tag{A3}$$

Proof. Those first order conditions are derived directly from the optimization problem in equations (A1). Existence and unicity of $x^*_{s,t}$, given $W_{s,t+1}$ are obtained from the assumptions on $w_s(\cdot)$ and $P_{ss'}(\cdot)$. At the terminal point, future career no longer matters as $\Delta W_{T+1} = 0$, so $x^*_{1,T} = x^*_{2,T} = \bar{x}$. Backward induction then yields the unique solution $(x^*_{s,t}, W_{s,t})_{t=1,\ldots,T}$. ■

Section 2 further imposes the following assumptions to better illustrate the intuitions:

Assumption A3 *Additional parametric assumptions:*

$$\begin{aligned} P_{11}(x_1) &= \gamma_1 x_1 + P_{11}(0), & P_{12}(x_1) &= -\gamma_1 x_1 + P_{12}(0), \\ P_{21}(x_2) &= \gamma_2 x_2 + P_{21}(0), & P_{22}(x_2) &= -\gamma_2 x_2 + P_{22}(0); \end{aligned}$$

$$w_1(x_1) = \sqrt{\beta_1 x_1} \geq 0, \quad w_2(x_2) = \sqrt{\beta_2 x_2} \geq 0; \quad \textit{with } \beta \overset{def}{\equiv} \frac{\beta_2}{\beta_1} \geq 1,\ \gamma \overset{def}{\equiv} \frac{\gamma_2}{\gamma_1} \geq 1,\ 0 < \gamma_1 < \gamma_2.$$

To proceed to the proofs of Propositions 1 and 2, we focus on the case $\Delta W_t > 0\ \forall t \leq T$ (when Δr is sufficiently large), i.e., the politician always prefers higher office.

Proof of Proposition 1. First, note that $\Delta v_t \geq 0$ iff power trumps scrutiny. Proposition A2 also implies that in the last period $\Delta V_T = \rho \Delta w_T(\bar{x}) > 0$. When power dominates in the first case, δv_t^* is positive in all periods following equation (3), hence the conclusion obtains immediately for ΔV_t.

In the second case, we apply backward induction using equation (A4) from $t = T$ down to $t = 1$. Since $\Delta v_t^* \leq 0$ when scrutiny dominates, and because $\delta \Delta \tilde{P}_t \in (0, 1)$, $\Delta V_t < \Delta V_{t+1}$ whenever $\Delta V_{t+1} > 0$. When the sequence ΔV_t eventually reachers below zero as t decreases to a value $\bar{t} - 1$ (which is inevitable when T is large enough), the monotonicity of ΔV_t no longer holds necessarily. However, for all $t < \bar{t}$, equation (A4) guarantees that $\Delta V_t < 0$. ■

Proof of Proposition 2. We focus on the case when scrutiny trumps power and an increase in $B < 0$ (i.e., a dencrease in its magnitude) in the four cases described in Proposition 2.[36] First, we expand the recursive solution formula of ΔW_t as follows:

$$\Delta W_t = \Delta r + \frac{B}{2\delta \Delta W_{t+1}} + \delta \left[-\frac{B}{4(\delta \Delta W_{t+1})^2} + P_{22}(0) - P_{12}(0) \right] \Delta W_{t+1}$$

$$= \Delta r + \frac{B}{4\delta \Delta W_{t+1}} + \delta \Delta \tilde{P}_0 \Delta W_{t+1} \quad \textit{with} \quad \Delta \tilde{P}_0 \overset{def}{\equiv} P_{22}(0) - P_{12}(0).$$

As $B < 0$, the right hand side expression is increasing in both B and ΔW_{t+1}. Therefore, when B increases towards 0, the whole path $(\Delta W_t)_{t=1,\ldots,T}$ increases.

It gets more complicated to show the monotonicity of the path of $(\Delta V_t)_{t=1,\ldots,T}$ when B changes, since this sequence also depends directly on the sequence $(\Delta W_t)_{t=1,\ldots,T}$. To do so, we first write the solution formula of ΔV_t in a more tractable way:

$$\Delta V_t = \frac{\rho B}{2\delta \Delta W_{t+1}} + \delta \left[-\frac{B}{4(\delta \Delta W_{t+1})^2} + \Delta \tilde{P}_0 \right] \Delta V_{t+1}$$

$$= \frac{B}{2\delta \Delta W_{t+1}} \left[\rho - \frac{\Delta V_{t+1}}{2\Delta W_{t+1}} \right] + \delta \Delta \tilde{P}_0 \Delta V_{t+1} \quad . \tag{A4}$$

Next, note that the difference between ΔV_t and $\rho \Delta W_t$ is the discounted sum of the stream of Δr, with the discount factors being the products of the by-period discount factor $\delta \Delta \tilde{P}_t$. This statement is best proved by induction from $t = T$ down to $t = 0$. Indeed, denote recursively this difference as R_{t+1} in $\Delta V_{t+1} + R_{t+1} = \rho \Delta W_{t+1}$, we obtain $\Delta V_t + R_t = \rho \Delta W_{t+1}$ with $R_t = \Delta r_t + \delta \Delta \tilde{P}_t$. This recursive formula implies that R_t is a discounted sum of the stream of Δr.

Each discount factor $\delta \Delta \tilde{P}_t = \delta \left[-\frac{B}{4(\delta \Delta W_{t+1})^2} + P_{22}(0) - P_{12}(0) \right]$ decreases as B increases towards 0, since ΔW_{t+1} increases while $|B|$ decreases. Hence the compound products of those discount factors over $t \in \{k+1, \ldots, T\}$ decrease as well. Therefore, R decreases when B increases. Since $\Delta V_t = \rho \Delta W_t - R_t$, it follows that when B increases, ΔV_t increases even more than ΔW_t, therefore ΔV_t is increasing in B. ■

Remark that, as the whole path of $(\Delta V_t)_{t=1,\ldots,T}$ increases following an increase in B towards 0, it follows that the moment $\bar{t}$ through which ΔV_t switches sign (from negative before $\bar{t}$ to positive after $\bar{t}$) decreases. That is, ΔV_t switches sign earlier, thus the adverse effect of promotion on connected firm's value becomes less prevalent.

[36] Because ΔW_T and ΔV_T depend directly on β_2 and β_1, a change in B does not guarantee a monotonic change in ΔW_T and ΔV_T. The comparative statics still hold separately with respect to changes in the β_s's and γ_s, but only approximately with respect to a change in B.

A.3 Estimation of cumulative abnormal returns

For each company's stock i, its daily return on day t is defined from daily stock price $P_{i,t}$ as $R_{i,t} = \frac{P_{i,t}}{P_{i,t-1}} - 1$. Related to an event (an election in our case) on day 0, stock i's market model $R_{i,t} = \alpha_i + \beta_i R_{m,t} + \epsilon_{it}$ is estimated from the time series of the market daily returns $R_{m,t}$ over the window (-351,-61) counting from the event day (including both starting and end days), where $R_{m,t}$ is the market's return on day t. Abnormal returns on day t is then calculated as $AR_{i,t} = R_{i,t} - (\widehat{\alpha}_i + \widehat{\beta}_i R_{m,t})$. Cumulative abnormal returns over the benchmark window (-1,5) are calculated as

$$CAR_i^{(-1,5)} = \sum_{t=-1}^{5} AR_{i,t} = \sum_{t=-1}^{5} \left[R_{i,t} - (\widehat{\alpha}_i + \widehat{\beta}_i R_{m,t})\right]. \quad \text{(A5)}$$

In robustness checks, we also calculate CARs that take into account other moments in the estimation of $AR_{i,t}$, following Fama and French's (1993) three-factor model or Carhart's (1997) four-factor model.

CARs sum up changes in a firm's stock price over the benchmark window, filtering out a function of the stock's pre-event data (as encompassed in the estimators $\widehat{\alpha}_i$ and $\widehat{\beta}_i$ and market-wide data that vary only by the time dimension. Its cross-sectional variation maps directly to the variation in the changes of the value of connection V, assuming no other event takes place at the same time.

Given that close elections' results can be considered as almost-random draws, they must be independent of the aforementioned part that is filtered out from the sum of raw returns in CARs. Therefore, we should expect that estimates using CARs calculated from different market models (with either one, three, or four factors) as the outcome variable do not differ from estimates that use the sum of raw returns instead. This prediction is confirmed in Appendix Table A5's Panel B. While the choice of the market model should not affect the magnitude of the estimates, the appropriate model choice may help reduce the noises inherent in stock returns, which may help improve the estimates' precision.

A.4 Semi-parametric estimation of heterogeneous effects

Following Do et al. (2017), we modify equation (4)'s baseline RDD specification to examine the heterogeneous effects of having Congress-level connection on firm value as a non-parametric function $\beta(\cdot)$ of a variable of interest x:

$$CAR_{idt} = \beta(x) Winner_{pt} + \delta_W(x) VS_{pt} \mathbb{1}_{\{VS_{pt} \geq 50\%\}} + \delta_L(x) VS_{pt} \mathbb{1}_{\{VS_{pt} < 50\%\}} + \varepsilon_{idpt}. \quad \text{(A6)}$$

We first define the percentiles of x as $p_x \in [0, 1\%, \ldots, 100\%]$. The function $\beta(\cdot)$ is estimated from semi-parametric local linear regressions based on equation (4) at each value over a grid of 101 points of p_x (the focal point). In each local regression around x, each observation at a percentile q is weighted by a Gaussian kernel function $\frac{1}{\sqrt{2\pi}} \exp\left[-\frac{1}{2}\left(\frac{q-p_x}{b}\right)^2\right]$, with a bandwidth equal to 20%. The shape of the estimated function $\beta(\cdot)$ remains robust to a broad range of cross-validated bandwidth.