Firm Strategies and Market Power: the Role of Political Connections *

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Abstract

We quantify the importance of political connections with congressional committee members on firm strategies and market power in the United States. For identification, we exploit a congressional procedure (committee exile) that exogenously varies a committee member's political influence. We find that on average one successful political connection with a committee member leads to a 0.06% increase of firm sales and 0.21% higher firm-level markup. The effect can be explained by less competition and higher market shares of government procurement contracts. We also unfold corporate strategies in both non-market and market environment associated with political connections. Loss of political connections affect firm campaign contributions, lobbying expenditures and production activities. To quantify the contribution of political connections on increasing markups of large firms, we propose and estimate a general equilibrium model with oligopolistic output markets and two final goods: public and private final goods. By paying an entry cost of political connections, firms participate in public market and receive government procurement contracts. We show that the increase in political connections can explain 15-20% of the increase in average markups. The increase in political connections also predict lower employment and high equilibrium wage. Overall, our paper reveals the fact that firms tactically seek political influence among politicians, which has an indispensible role in corporate strategies under both non-market and market environment, and serves as a key mechanism in the rise of market power of large firms.

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1 Introduction

In the United States, the well-established channels through which interest groups try to influence legislators entitle political connections as the crux of economics and political science research. As the major players in the economy, firms have been actively building up political connections to tilter legislations, or strive for government procurement contracts and subsidies. Sizes and resources of larger firms allow them to gain more access to political connections relative to their smaller competitors. Given the vital importance of political connections to not only stakeholders but the whole economy, however, there is scarce evidence uncovering their comprehensive implications for firms strategies and market power. Essentially, the endogeneity of political connections in firm decisions makes it challenging to clearly distinguish their roles from firm characteristics, as well as other non-market or market strategies.

In this paper we measure firm political connections by corporate political action committee (PAC) campaign contributions to U.S. congressional committee members, and thoroughly unfold the implications of political connections for firm market power as well as non-market and market strategies, in both reduced-form empirical analysis and a general-equilibrium model.

Recent literature documents a rise in market power of large firms (De Loecker, Eeckhout, and Unger, 2020), which are also more likely to have political connections (Akcigit et al., 2022; Cowgill et al., 2022). As pointed in Eeckhout (2021), large firms are using money to exploit the political system to increase their dominance. In particular, our paper provides insights on the effect of the increase in the cap of political contributions to each politician on firm market power through government procurement contracts. Larger firms can employ more resources to build up political connections, which help them obtain government procurement contracts[1] in the public good market. Compared to the private market, public market is less competitive with higher market concentration, and consequently, larger firms with government contracts have further higher market power.

As legislative sub-organizations in the United States Congress, congressional committees handle specific but important duties in the Congress. For example, among the most influential committees, Appropriations Committee passes appropriation bills and regulate expenditures of money by the government. Budget Committee provides legislative oversights of the federal budget process and reviews all bills and resolutions on the budget. Thus, congressional committee members are particularly powerful on legislative decisions, government awards and budgetary plans. From a firm's perspective, corporate political connections with committee members are intangible and can be, broadly speaking, detected via a number of alternative ways including campaign contributions (Bertrand et al., 2014, 2020), employment of politicians (Faccio, 2006; Akcigit et al., 2022), shared education networks with executives (Cohen et al., 2008), past political experiences of board members (Goldman et al., 2013), or lobbying activities

[1]In this paper, we abstract from the microfoundation of the procedure for firms to get government procurement contracts. Instead, we assume a simple stochastic process in which the probability of getting procurement contracts decreases with the number of potential competitors donating to politicians.

(Richter et al., 2009). Focusing campaign contributions to committee members is particularly convenient due to visibility of detailed data[2] and feasibility of identification with exogenous variations.

Our empirical analysis starts with assembling a large dataset[3] covering US listed firms by merging: (i) universe records of campaign contributions to congressional committee members from firm PACs[4]; (ii) lobbying, independent expenditures, charitable donations associated with firm PACs; (iii) government procurement contracts and financial subsidies awarded; (iv) federal registry of congressional committee members and their assignments; and (v) firm financial statements and executive compensations. To tackle the endogeneity of campaign contributions, we propose an identification strategy leveraging involuntary removal of US congressional committee members (committee exile), which is first introduced and exploited in (Grimmer and Powell, 2013, 2016) as exogenous variations of a member's influence over the policy-making process. Committee exile happens after a defeat in a congressional election, when the old majority party (Democratic) loses seats on every committee because committee ratios are adjusted to reflect the new majority's (Republic) seat advantage[5]. Figure 1 illustrates the committee assignment process. Our empirical strategy begins with restricting our sample to junior politicians with similar probability of being exiled. Among comparable politicians, we verify the exogeneity of this congressional procedure. First, there is no difference in funds received between exiled and non-exiled members. Second, firms are indifferent in sizes when selecting exiled and non-exiled members. The two verification exercises confirm that the committee exile is as good as random to firms.

Our identification leverages the committee exile and starts with a difference-in-difference strategy. The treatment group includes firms that donate to a committee member exiled after a congressional election defeat. The control group is firms that donate to a similar committee member who stays after a congressional election defeat. We compare firm outcomes between treatment and control groups before and after the congressional election defeat. Equipped with the identification strategy, we document two important and robust patterns. First we show that political connections with committee members reward firms with higher market power. On average, one successful political connection with an incumbent committee member leads

[2]At the same time, board members and executive can have past experiences in government or military, same membership in a golf club with government officials, or promise them lucrative jobs on boards after exiting politics. Although all of these can be treated as political connections, we focus on the importance of campaign contributions due to its transparency and availability.

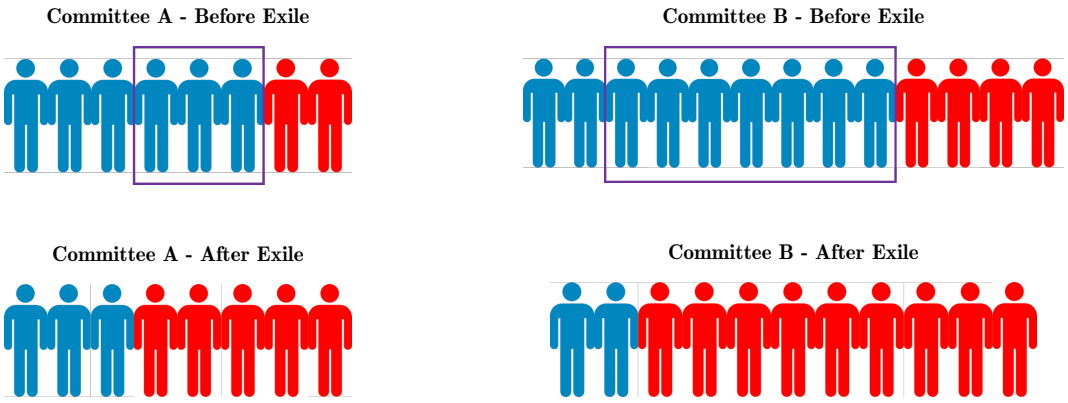
[3]Although we are among the first to compile such a comprehensive dataset, the main data sources have been validated and explored extensively in previous papers. For example, campaign contributions in Cooper et al. (2010), lobbying expenditures in Bertrand et al. (2014, 2020), charitable donations in Bertrand et al. (2020, 2021), independent political expenditures in Petrova et al. (2019), government procurement contracts in Brogaard et al. (2020); Cox et al. (2020).

[4]Our data also consists of CEO individual campaign contributions. However, throughout the paper our analysis focuses on firm PAC contributions because they have a much higher scale. Section 3 presents detailed comparison between firm and CEO campaign contributions.

[5]See Grimmer and Powell (2013, 2016) or more details on incidence and characteristics of committee exile, as well as its electoral, political and pecuniary consequences.

Figure 1: Committee Exile: A Graphical Illustration

This figure illustrates the committee exile process and outcomes when Republicans (red) win the congressional election and exile (Democrats). Democrats within purple squares are force to leave due to the uneven changes in committee sizes and ratios.



to an 0.06% firm sales and 0.21% higher markups. For an average firm in our sample, the dollar amount of sales is equal to $1.58 million[6]. Our results are robust to controlling for firm contribution strategies in terms of amount and number of connected politicians, and also to different measures of political connections associated with campaign contributions, including current and historical firm PAC contributions to the politician. Given that larger firms are more willing to build up political connections, these connections further increases market concentration and defense market leaders' positions. On the basis of main results, we unfold potential channels via which political connections increase firms' market share. With an event study design, we find that compared to firms experiencing committee exile, firms with more successfully connected politicians on average are awarded 3.3 times more government procurement contracts in value. At the same time, these firms are also able to receive twice as many as financial subsidies awarded by federal, state or local government, and 3.5% saving in effective tax rates[7]. These results indicate that more politically connected firms are able to reveal their productivities and receive preferential treatments from the government.

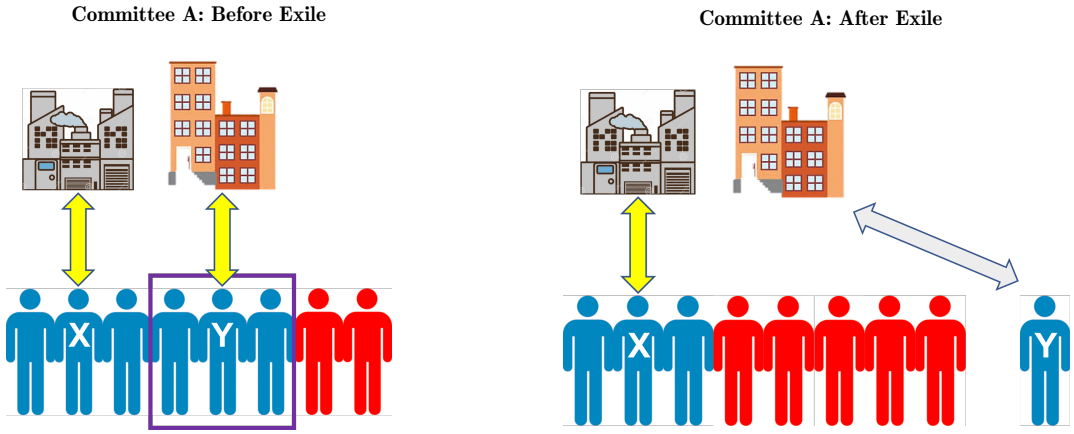
In our second set of results, we delve into firms' reactions to losing political connections, including different corporate non-market and market strategies, within the same event study framework as before. Compared to firms not losing political connections, we find that firms experiencing committee exile on average build connections to six more incumbent members and donate $0.52 million more campaign contributions to them, which confirms the vital importance of committee members to firms. Next, we perform a comparative analysis of different non-market strategies associated with political influence and uncover their relationships. After

[6]The significant increase can be explained by the huge benefits from government procurement contracts as discussed in channels. Our results are actually comparable to Brogaard et al. (2020) who show that firms connected to local politicians are awarded an additional $5.0 million, which is about 19.3 times larger than the estimate for the average renegotiation.

[7]As defined in Table 2, our calculation of effective tax rate follows Gupta and Newberry (1997) and Richter et al. (2009), which proves to be the best in a multivariate setting.

Figure 2: Identification Strategy

This figure illustrates our identification strategy. Politician Y is exiled after the congressional defeat but politician X is not. The grey firm connected to politician X does not lose political connections with committee A. However, since politician Y is not in the committee A, the green firm connected to politician Y does lose a political connection with committee A.



losing political connections with committee members, firms on average cut down their lobbying expenditures by $11.68 million and independent expenditures by $0.85 million, but increase charitable donations from corporate foundations by $5.7 million[8], relative to firms not losing political connections. Our results overall suggest that firms seek political influence strategically, in which the priority is to connect with congressional committee members. Upon successful political connections with them, firms will budget more on influencing policies and legislations via lobbying, or advocating political campaigns via independent expenditures. Moreover, we reconfirm the role of corporate philanthropy as an alternative tool to exert political influence[9]. At the same time, we show that political connections do have a considerable impact on firm production and financing activities. Firms not losing political connections have a 54.6% higher capital investment rates but $1.29 billion lower R&D expenditures, relative to firms experiencing committee exile. They also give 36.4% fewer dividends to shareholders.

The second part of the paper develops and estimates a general equilibrium model in the spirit of De Loecker, Eeckhout, and Mongey (2021), with two key features. First, there are oligopolistic output markets with heterogeneous firms facing competitive input markets. Second, apart from a private final good consumed by the households, there is a public final good that is produced by a selected set of firms and purchased by the government. An increase in the entry cost to build up political connections inhibits participation, and hence reduces the number of competitors within each submarket. As a consequence, firms can set higher markups and obtain higher returns from political connections. In reality, changes in entry cost to participate in political connections come from legislations related to campaign contributions. In

[8]The charitable donations analysis is limited within S&P 500 firms.

[9]Our results on charitable donations speak to the same story as Bertrand et al. (2020) and Perez-Truglia et al. (2021), though the former leverages a different identification strategy and the latter has an individual level empirical analysis.

this paper, we particularly focus on the increase in the cap of campaign contributions proposed by the Bipartisan Campaign Reform Act of 2002[10], which allows larger firms to make more campaign contributions and crowds out smaller firms.

The rest of the paper is organized as follows. Next section reviews the related literature. Section 3 introduces the data sources and construction. Section 4 presents the identification strategy and empirical analysis. Section 6 provides a general equilibrium framework and discusses comparative statics of the model. Section 7 concludes.

2 Literature Review

Non-Narket Strategies - Corporate Political Influence. Our paper, first and foremost, provides a direct contribution to the literature on corporate non-market strategies in seeking political influence, which has been prevalent among research in economics, finance and strategic management over recent years. Corporate political connections are not only found to have widespread existence (Faccio, 2006), but also associated with higher stock returns (Goldman et al., 2008; Cooper et al., 2010), more government contracts (Goldman et al., 2013; Aobdia et al., 2022), firm survival (Zheng et al., 2015), and even externalities such as higher default rates on bank loans (Khwaja and Mian, 2005) or risk exposure (Kostovetsky, 2015). At the same time, non-market strategies are shown to be intercorrelated in recent years. For example, Bertrand et al. (2020) and Perez-Truglia et al. (2021) find that charitable donations can be an alternative tool to seek political influence. A noticeable paper is Brogaard et al. (2020), who use unexpected politician deaths and resignations as exogenous variations. Their estimates show that politically connected firms initially bid low and successfully renegotiate contract amounts, deadlines, and incentives. We contribute to this series of literature by proposing a reliable identification strategy, and provides a comprehensive analysis of, first, the effect of political connections on market power, and second, the relationships between different market and non-market strategies.

Market Power and Political Power. Importantly, the implications of market power in our paper are inspired by De Loecker, Eeckhout, and Unger (2020) and De Loecker, Eeckhout, and Mongey (2021). Their papers first document the rise of market power and then propose channels changing market power. In addition, Cowgill, Prat, and Valletti (2022) examine the link between lobbying and concentration in industries, which directly affects market power. Our paper provides direct empirical evidence suggesting that firm non-market strategies in political connections can be an important cause explaining the rising of market power of large firms. Our model with endogenous market power in both public final good market builds on an earlier paper by Atkeson and Burstein (2008), and De Loecker, Eeckhout, and Mongey (2021) as well. An increase in entry costs of the public good markets drives a decrease in participation rates of political connections, but an increase in both return to political contributions and firms'

[10]For a detailed explanation from the original document, see https://www.fec.gov/resources/record/2002/dec02.pdf#page=8

markups. Following methodologies in De Loecker, Eeckhout, and Unger (2020), we estimate firm-level markups using the production approach.

Government Allocation of Resources. Our paper also contributes to the literature studying the role of government in economic performance through allocation of resources across firms. In particular, our model design of a public sector demanding goods from private firms is motivated by García-Santana et al. (2022), who examine how the procedure of awarding public procurement contracts to private firms may affect the macroeconomy with Spanish administrative data. In addition, Cox et al. (2020) reveals the heterogenerous nature of the U.S. federal public procurement contracts, and how the concentration of contracts in sectors where prices are more sticky affects the short run fiscal transmission mechanism. Recent papers have been noticeably examining the role of non-market strategies in government allocation of resources. Political connections have been shown to affect renegotiation value of procurement contracts (Brogaard et al., 2020) and government financial subsidies (Aobdia et al., 2022). Companies with high corporate social responsibility also receive more government contracts (Flammer, 2018). By providing a reliable identification strategy, our paper comprehensively examines the role of political connections in receiving government resources, which have important implications on firm market power and market shares.

Congressional Committee Assignments. As an important congressional procedure in the United States politics, committee assignments have attracted extensive attention from researchers in economics and business. Our paper is also related to the emerging literature focusing on this specific congressional procedure. Grimmer and Powell (2013) exploits a novel identification strategy - committee exile, which is the involuntary removal of committee members after a party loses a sizable number of seats and find it has only limited electoral consequences. Their companion paper (Grimmer and Powell, 2016) extends this identification strategy to show that business interests see short-term access to influential legislators. Rather than politician level variations and outcomes, Bertrand et al. (2014) finds that lobbyists follow politicians they were initially connected to when those politicians switch to new committee assignments. Bertrand et al. (2020) generates a time-varying, pair-specific measure linking company interests to specific legislators, which is shown to be predictive of corporate donations to charities in the legislator's district. Our paper leverages committee exile from Grimmer and Powell (2013, 2016) as the identification strategy, and quantify the effect of political connection on not only non-market and market strategies, but also market power.

3 Institutional Background and Data

3.1 Committee Assignment and Exile

A congressional committee is a legislative sub-organization in the United States Congress that handles a specific duty, rather than the general duties of Congress. Given that committee members develop specialized knowledge of the matters under their jurisdiction, there are indeed

preferential committee assignments. For example, in the House of Representatives, Ways & Means, Energy & Commerce and Appropriations Committees are recognized as more powerful[11] compared to Rules, Veteran's Affairs and Small Business Committees, due to the essence of the issues oversighted by the committee. Equivalently, politicians in more powerful committees have more influence among interest groups compared to those in less powerful committees.

Committee exile, as first studied in Grimmer and Powell (2013, 2016), happens when there is a defeat in congressional election. Following the election and before any assignments can be made, two party leaders must negotiate the committee sizes and party ratios for each committee. In addition to losing its majority status, a party loses at least a proportional number of seats on every committee as committee ratios are adjusted to reflect the new majority's seat advantage. This causes some legislators to lose their committee seats, or to be exiled, because there are an insufficient number of slots to accommodate the returning members. In deciding whom to exile, both parties employ a seniority system removing the least senior (fewest terms on the committee) committee members.

We obtain the list of members of the US Congress, their committee assignments and seniority within each committee from Charles Stewart's Congressional Data Page[12] during 1993-2014 (103rd - 113th Congress). The committee exile, as in Grimmer and Powell (2013), includes 152 cases of involuntary leaves of congressional committee members during 103rd - 113th Congress. Exiled members are matched with their assignments and seniority by first and last names, as well as congressional districts.

3.2 Other Data Sources

Money in Politics. In the United States, as in many democracies, the well-established channels through which interest groups seek influence on rules and legislations provides researchers with visibility of campaign finance, lobbying and independent expenditures[13] to trace money in US politics. As a nonprofit organization based in Washington, D.C, Opensecrets tracks money in politics and its effect on elections and policy[14], and keeps the universe records of campaign contributions from individuals and PACs, lobbying expenditures and independent expenditures in details. We collect detailed information of all individual and PAC campaign contribution records[15], lobbying expenditures and independent expenditures from OpenSecrets

[11] According to OpenSecrets, Ways & Means, Energy & Commerce and Appropriations Committees top the list of number of revolving door people profiled. See https://www.opensecrets.org/revolving/top.php?display=C&chamb=H

[12] Stewart III and Woon (2017)

[13] An independent expenditure is an expenditure for a communication that expressly advocates the election or defeat of a clearly identified candidate and which is not made in coordination with any candidate or their campaign or political party.

[14] Opensecrets was created from a merger of the Center for Responsive Politics (CRP) and the National Institute on Money in Politics (NIMP) in 2021.

[15] In the United States, corporations are not allowed to directly donate to politicians. Instead, they create PACs to make campaign contributions.

during 1993-2014 (103rd - 113th Congress)[16], and restrict recipients of campaign contributions only within individual Congress committee members from either Democrats or Republicans.

Government Procurement and Subsidies. As a practice, the US government enters into contracts with firms to purchase goods and services. The Federal Procurement Data System (FPDS) tracks procurement contracts of the US federal government, which provides comprehensively detailed information on almost all federal contracts for 65 branches, departments and agencies of the federal government since 2001. We retrieve detailed contractual information from the USAspending.gov webpage[17], which reports detailed information on initial values, awarding date and renegotiation values on any contract with a transaction value of at least $3,000. Apart from government contracts, financial assistance accounts for another significant type of transferring taxpayer money to corporations. We rely on the Good Jobs First Subsidy Tracker[18], a national non-profit organization promoting corporate and government accountability, to obtain the information on subsidies received by corporations at federal, state and local levels.

Other Data. As in Bertrand et al. (2020) and Perez-Truglia et al. (2021), charitable donations can be used as a substitute of campaign contributions to seek political influence. To understand how political connections affect corproate charitable donations, we obtain charitable donations of corporate foundations among S&P500 firms from Bertrand et al. (2020).[19] Other CEO or firm-level variables come from either Execucomp or Compustat/CRSP merged. All monetary variables are in real values, deflated by Consumer Price Index (2015 = 100)[20].

3.3 Linking different datasets

Given the complex historical data and absence of common identifiers among the datasets we collect, we overcome the challenging data-linking process by fuzzy matching and hand-checking. First, to merge individual contributions and CEO compensations, we go through a fuzzy matching process between OpenSecrets individual donor names and Execucomp CEO names. Then we hand check all fuzzy-matched individuals and restrict that they share the same first and last names, occupation and (parent) organizations/firms. Second, to merge PAC contributions, lobbying expenditures and independent expenditures with listed firms, we perform a similar fuzzy matching process between Compustat firm names and organizations sponsoring the PACs. Thereafter, we also handcheck fuzzy-matched organizations to make sure they denote the same firm essentially. Finally, in a similar manner, firm names are fuzzy matched and hand checked with government contracts and subsidies recipients or their parents. We provide summary statistics the stylized pattern in the following part. We employ a threshold

[16]The full disclosure of independent expenditures start from 107th Congress (2001), from when we have the independent expenditures data.

[17]https://www.usaspending.gov/

[18]https://subsidytracker.goodjobsfirst.org/

[19]https://www.openicpsr.org/openicpsr/project/116689/version/V2/view

[20]https://fred.stlouisfed.org/series/CPIAUCSL

of Levinstein distance ≥ 0.8 in all the fuzzy matching processes, to avoid losing possibly correct pairs.

3.4 Data Facts

Summary Statistics. Our sample consists of 25,354 firm-Congress observations from 1993 (103rd Congress) to 2014 (113th Congress). In particular, since either firms or CEOs can have connections with more than 1 politicians or congressional committees, we observe 319,343 firm-Congress-politician and 17,267 CEO-Congress-politician connections. Table 3 reports summary statistics of the data at firm-Congress and firm-Congress-politician levels.[21] Compare to CEOs, firms on average donate more to each politician or committee, thus are more likely to connected to more politicians and committees.

Co-movement between Campaign Contributions and Markups. In Figure 11 we plot 50% and 95% percentiles of firm-level markups and corporate campaign contributions to congressional committee members for every two years (one Congress), respectively. Following De Loecker et al. (2020), we define firm-level markup as sales/(cost of goods sold + capital cost) and eliminate firms with reported cost-of-goods to sales and SG&A to sales ratios in the top and bottom 1%, where the percentiles are computed for every two years (one Congress) separately. Note that %50 percentiles of campaign contributions are always zero due to low participation rate in campaign contributions. During 1994-2014, we observe an increasing trends in both firm-level markups and campaign contributions of large firms. However, median of markups are almost constant and firm participation in campaign contributions does not increase over time. Our descriptive evidence suggests the positive correlation between the co-movement of campaign contributions and market power of large firms over time.

Patterns and Scales of Firm vs. CEO Contributions. Do CEOs and firms strategically make decisions in campaign contributions? In Figure 12 we aggregate all CEO or firm PAC campaign contributions to politicians with assignments in each committee. As shown in subfigure (a) and (b), apart from difference scales between CEO and firm PAC contributions, even aggregately, their money is has been directed in very different patterns. First, CEOs are more likely to donate to Senators while firms to House Representatives. Second, the importance of each committee varies a lot for CEOs and firms[22]. Although CEOs and firms have different

[21] A firm-Congress-politician panel is all possible combinations of firm $\times$ Congress $\times$ committee member pairs over all Congresses.

[22] For example, top committees receiving contributions from CEO include Commmerce, Science and Transportation (Senate), Armed Services (Senate) and Appropriations (Senate), while from firm include Energy and Commerce (House), Financial Services (House) and Ways and Mean (House). To investigate whether some committees are targeted or dominated by specific industries, we split total contributions by industries (1-digit SIC code), as shown in the heatplots from subfigure (c) and (d). Big industries, including finance, manufacturing and transportation & utilities, clearly dominate total contributions to committee members. However, compare to CEO contributions which are more diversified across all committees and common in most industries, firm contributions are more industry-related and concentrated in a few industries (finance, manufacturing and transportation & utilities). In particular, finance industry donates a lot more to financial services committee (House), and similar for transportation & utilities industry to energy and commerce committee (House), as well as manufacturing firms to appropriations (House) and energy and commerce (House).

aggregate directions in campaign contributions, it is a mystery in academic research how firms and CEOs individually manage such non-market strategies to politicians or committees. In Figure 13, we plot firm vis-à-vis CEO strategies on campaign contribution to politicians or committees, in scaled contributions (by CEO total compensation or firm sales) or share of contributions (within total contributions), both of which are residualized by log of sales and log of employment. We find that on average an CEO's campaign contribution strategies are positively correlated with firm's, at both politician and committee levels. Due to the huge scale difference between CEO individual and firm PAC campaign contributions, we consider firms are more important in building up political connections and use firm PAC contributions to measure political connections throughout the paper.

4 Empirical Strategy

4.1 Committee Exiles and Identifying Assumptions

It is clear that companies never seek political influence randomly. Instead, they choose whether to engage in campaign contributions, whom to connect in Congress committees, and the exact amount of contributions to relevant politicians. The decisions in campaign contributions, therefore, are correlated with many firm-level, as well as politician observable and unobservable characteristics which may affect firm outcomes and strategies. To address this concern, we exploit exile of congressional committee members, as introduced in Grimmer and Powell (2013, 2016), as a source of exogenous variation in a firm's political connections. After a defeat in a congressional election, committee exile happens when there are not sufficient number of slots to accommodate the returning members who win the election in their congressional districts. The reason is that the outgoing majority party is forced to relinquish power by loss of valued committee assignments for returning incumbents, and electoral losses are spread unevenly across committees[23].

However, the decisions of both parties on whom to exile depends on the seniority rule to remove the least senior committee members (fewest terms served on the committee). Consequently, firms can strategically direct their funds to very senior politicians who will seldomly be exiled to avoid loss of political connections, so that committee exile is not exogenous to firms. Therefore, to leverage committee exile as our identification strategy, we keep only marginal politicians[24] who are subject to exiles in case a congressional election defeat happens.

Since our identification strategy relies on the exogeneity of exile to firms, we verify two

[23]For any new congress, the committee assignment process begins with the committee assignments and party ratios of the previous congress. Following the election, although new and returning members submit committee or transfer requests, the majority and minority party leaders must negotiate the committee sizes and party ratios for each committee, to reflect the majority status. Once a member has received an assignment on a committee, it is assumed that she or he will have the option to continue to serving on it.

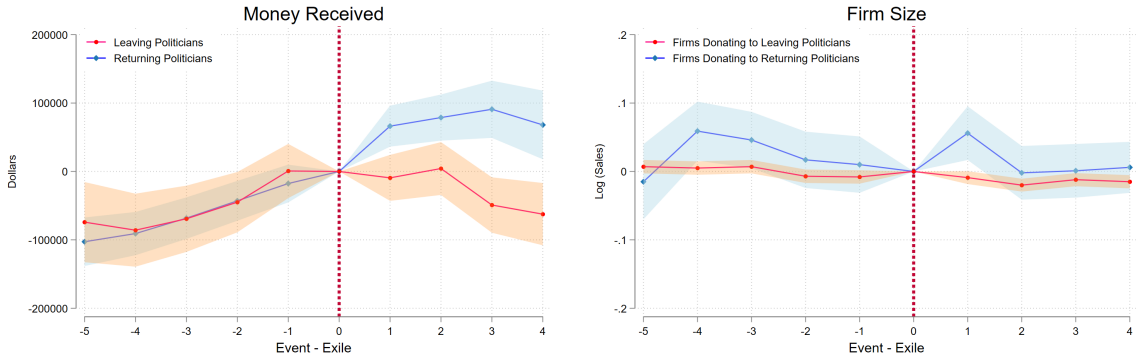
[24]In all of our empirical analysis we keep politicians with seniority less than or equal to 4 terms (8 years), but the results are robust to other thresholds.

identifying assumptions. First, exiled and non-exiled politicians should be indifferent in their political abilities measured by observed characteristics, for example, funds received during the congress before congressional election defeat happens. To verify this, we aggregate all firm PAC campaign contributions at politician-Congress level and regress funds received on a dummy of politician ever exiled interacted with an event dummy around exile happens. We compare funds received by exiled (leaving) and non-exiled (remaining), before and after the committee exile happens. Second, because larger firms may employ more resources to predict outcomes in politics, we verify that larger firms do not have a higher or lower chance of experiencing exiled politicians.

On the left panel of Figure 3, we plot money received by exiled (leaving) and non-exiled (remaining) politicians, before and after the exile happens. Consistent with Grimmer and Powell (2013), we find that leaving politicians receive significantly less money than remaining politicians after they are exiled, but not before. This finding implies that committee exile is not determined by the money they receive before exile happens. In other words, campaign contributions cannot determine commitee exile. On the right panel of Figure 3, we plot estimated coefficients and depict 95% confidence intervals of sizes, measure by log (sales), of firms donating to leaving and remaining politicians before and after the committee exile. Larger firms are not able to predict whether a politician will be exiled in the next Congress.

Figure 3: Identification Assumptions

This figure visualizes two identifying assumptions of our identification strategy. In the left panel we plot estimated coefficients and depict 95% confidence intervals of money received by leaving and remaining politicians before and after the committee exile. In the right panel we plot estimated coefficients and depict 95% confidence intervals of sizes, measure by log (sales), of firms donating to leaving and remaining politicians before and after the committee exile.



4.2 Baseline Empirical Model

We construct a panel of firm PAC contributions to congressional committee members at firm-Congress-politician level. We make two adjustments before the empirical analysis, to make all the politicians comparable in the sample. First, we drop politicians without any contributions received because these politicians are not recognized as "valuable" by firms, as those who received contributions. Second, as in the validation of identification, we restrict

our sample within marginal politicians who may be exiled during a congressional defeat. To estimate the average effect of one political connection with committee member on firm-level market power measures, including sales, profits and markups, we adopt the following baseline empirical model:

$$\begin{aligned} Y_{i,t} = \alpha + \beta_0 \text{Connected}_{i,p,t-1} + \beta_1 \text{Exile}_{p,t} + \beta_2 \text{Connected}_{i,p,t-1} \times \text{Exile}_{p,t} \\ + X_{i,t-1} + \delta_i + \eta_p + \gamma_t + \epsilon, \end{aligned} \tag{1}$$

where $Y_{i,t}$ is the outcome variable of interest of the firm i in Congress $t+1$. $\text{Connection}_{i,p,t-1}$ is equal to one if firm i has PAC contributions to politician p in Congress $t-1$, and zero otherwise. $\text{Exile}_{i,p,t}$ is a dummy variable, defined as one if the politician p connected to the firm is in power at Congress $t-1$ but exiled at Congress t, and zero otherwise. Firm level controls contain log of sales and employment. We also include firm, CEO, politician and Congress fixed effects to capture unobserved characteristics of firms and politicians, as well as time effects. The main coefficient of interest is β_2 estimating the average effect of an exiled politician on the outcome variables of the firm connected to her, comparing to the effect of a remaining politician β_0. We expect $\beta_0 > 0$, capturing both the positive effect of political contributions on firm outcomes and the endogenous effects vice versa. Meanwhile, we expect $\beta_2 < 0$, representing the effect of an unexpected loss of political connection of the firm. Since we assume the political influence of a politician comes from her being in a committee, we then expect the overall effect of contributions made to an exiled politician $\beta_0 + \beta_2 = 0$.

4.3 Main Results

Table **??** reports the estimated coefficients and standard errors of the baseline regressions. From column (1) to (4) we measure firm-level market power as log of sales, log of profits and two markup measures, as defined in Table 2. According to column (1), a 10% increase in firm PAC contributions to non-exiled politicians leads to a 0.039% increase in firm sales, which is statistically significant at 1% level. Equivalently, a \$10 increase in firm PAC contributions to non-exiled politicians on average leads to a \$48,922 increase in firm sales in a Congress, which implies a strikingly high return to political connections with committee members. For profits, a 10% increase firm PAC contributions to non-exiled politicians leads to a 0.49% increase in firm profits, which is equivalent to a \$15,396 increase in profits from \$10 increase in firm PAC contributions to non-exiled politicians. In columns (3) and (4) we study the effect of political connections on firm-level markups, namely, firm sales over total costs. A 10% increase in firm PAC campaign contributions to non-exiled politicians, on average, leads to a 0.14% increase in firm-level markup, measured by sales over the sum of variable, fixed and capital using costs. What is noticeable is that firm-level markups are also positively correlated with campaign contributions.

4.4 Robustness

After we show that more successful political connections leads to higher market power in the baseline results, we check for robustness to address the following concerns. First, firms can essentially have different levels of participation in campaign contributions which can be correlated to market power, but are absorbed into the error term in our baseline regression. To make firms comparable in terms of their strategies in campaign contributions, we control for firm total contributions in the Congress, historically total contributions up to the Congress, or total number of politicians contributed in the Congress. The estimation results are in Table 6 and our baseline results are robust to controlling for these contribution strategies.

Second, we use alternative measures of political connections including historical total contributions to the politician or a dummy of contribution, to uncover the effect of "stock" of political contributions or "flow" of political contributions on firm-level market power. As shown in Table 8 and Table 4, our conclusions still hold. Finally, we test the log-linearity and monotonicity between campaign contributions and marker power measures by dividing campaign contributions into quintiles. The first quintile is zero contributions, and second to fifth quintile are generated by quartiles of non-zero contributions. As shown in Table 9, most of the effects are held in second and third quintiles, and the relationship is neither linear nor monotonic. We think that there could be an effective threshold in political connections. As long as the participating firm pays the entry fee, it can build the connection. The money contributed over the threshold may not lead to higher returns.

4.5 Channels

Although our baseline regressions imply the role of political connections in firm sizes, the channels through which political connections affect sales are still unclear. In this section we delve into potential channels via which firm political connections with committee members affect firm size (sales) and market power. In particular we focus on value and number of government procurement contracts newly awarded in each Congress, financial subsidies awarded and effective tax rates, all of which are pointed out in previous literature (Brogaard et al., 2020; Aobdia et al., 2022; Richter et al., 2009). By purchasing goods and services, government procurement contracts are an essential component of economic activity and firm productions and sizes. Financial subsidies and taxes, on the other hand, are directly associated with cost of production and financing decisions. To clearly identify the effect of losing political connections (committee exile) on the potential channels, we define the affected (treatment) group as firms ever experiencing exiles of connected committee members, and unaffected (control) group as firms never experiencing exiles of connected committee members in a congressional defeat. We estimate a dynamic difference-in-difference regression in an event study setting:

$$Y_{i,t} = \alpha + \sum_{\substack{\tau \neq 0 \\ -3 \leq \tau \leq 3}} \beta_\tau \times \text{Affected}_i \times \mathbf{1}_{t=\tau} + \beta_0 \text{Affected}_i + X_{i,t} + \gamma_t + \eta_p + \epsilon_{i,t}, \tag{2}$$

where Affected$_i$ is a dummy that equals to one if firm i is in the affected group and zero in the unaffected group, as defined above. The relative periods around firm i experiencing exile of a connected politician p, $\tau = t - Exile_{i,p}$, cover three lagged and leading periods (6 years before and after) to have a cleaner effect of the exile. We include log of sales, employment, total historical campaign contributions and existing number of government contracts as firm-level controls, with time[25] and politician fixed effects.

Table 10 reports the estimated treatment effects over time of potential channels[26]. To understand the dynamics of channels over time, in Figure 4 we also plots estimated coefficients and depict 95% confidence intervals of affected and unaffected firms over time. Compared to firm not experiencing committee exile, firms experiencing committee exile during a congressional defeat decrease in value of newly awarded government contracts and financial subsides, and face higher effective tax rates. These results have three implications. First, we are reassured that politicians in the Congress play a key role in government economic activities which are, in particular, allocation of government resources including procurement contracts and financial subsidies. Second, corporate campaign contributions provide an important channel to access to both influential legislators and government resources with less competition and higher market shares. Third, political connections with politicians can implicitly generate tax savings for firms. Taking together, corporate political connections with congress members provides access to public procurement contracts with less competition, and hence increase firms market shares and market power.

5 Reactions of Firms

Firms are strategic economic agents in making decisions and allocating internal resources. As shown in the previous section, loss of powerful committee members shrinks sales and increases costs. In this section we comprehensively unfold how firms purposefully seek political influence via different non-market strategies, and how their market strategies are affected by non-market strategies. By repeating the event study specification of equation 2 and replacing dependent variables with firm outcome variables associated different firm strategies, we investigate how firms make decisions and allocate resources after they experience committee exile of connected politicians. Although it is impossible to examine an exhaustive list of strategies, we characterize the most relevant and important ones, which will be elaborated in detail in the following empirical analysis.

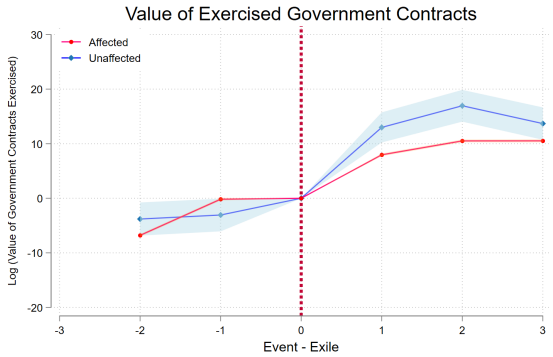
[25]The way we write the specification implies that time fixed effects capture over-time evolvement of firms in the control group.

[26]Government procurement data is incomprehensive in 1999-2000 (106th Congress), so we drop 106th Congres, which corresponds to t=-3, for the analysis of government procurement contracts.

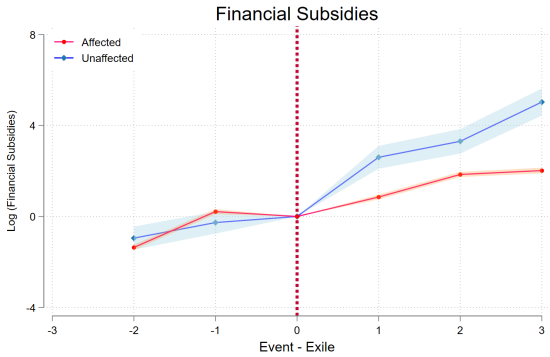
Figure 4: Channels

This figure plots estimated coefficients and depicts 95% confidence intervals of channels via which political connections affect firm sales over time, within a six-congress (12 years) time horizon. Firms are categorized as either affected or unaffected by committee exile during a congressional election defeat. In all the regressions we keep politicians who have ever received campaign contributions in a Congress, and with average seniority in all assigned committees smaller or equal to 4 (8 years), as well as firms ever participated in campaign contributions. Firm level controls include log of sales, log of employment and log of historical total campaign contributions. Panel (a) examines log of newly exercised government contracts in each Congress, within firms ever receiving government contracts. Panel (b) examine log of financial subsidies, within firms ever receiving financial subsidies. The effective tax rates in Panel (c), are computed by (income taxes total - deferred taxes)/(pretax income - equity in earning + special items + interest expense) as in Richter et al. (2009). Government contracts and financial subsidies data is dropped in the first period (106th Congress spanning 1999-2000) due to imcompleteness. Base time is t = 0, which is the Congress before committee exile happen. All monetary variables are deflated by annual CPI (2015 = 100).

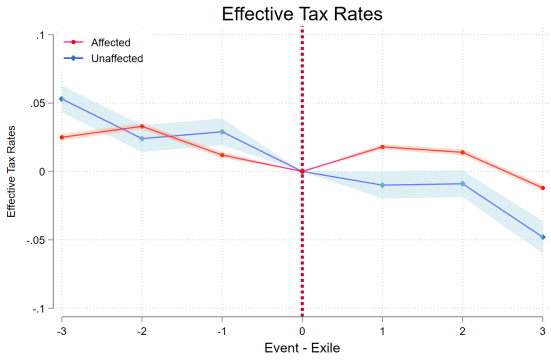
(a) Value of Government Contracts



(b) Subsidies



(c) Effective Tax Rates



5.1 Connection with Congress members

The point of departure of this section starts with examination of campaign contributions strategies to congress members, after loss of connections to powerful politicians. Specifically, we ask whether affected firms[27] remedy their political influence in the Congress, by turning to other politicians and donating more. In the event study, our outcome variable of interest is log of number of politicians donated by the firm PAC or total amount of campaign contributions during the Congress. In Panel (a) of Figure 5, we find that compared to unaffected firms, affected firms substantially increase the number of politicians to give campaign contributions, but only for a relatively short period. Intuitively, when firms experience exiles of connected politicians, they strategically turn to other incumbent congress members to gain political influence. This finding is consistent with Grimmer and Powell (2013), who conclude that contributions are directed from exiled legislators to new committee members.

As for corporate PAC total campaign contribution amounts shown in Panel (b) of Figure 5, however, unaffected firms cut down their campaign contributions upon successfully keeping political connections, while affected firms do not change much of their campaign contributions given the increase in numbers of connected politicians, as concluded from Panel (a). Our explanations are two-folded. On one hand, when firms experience exiles of previously connected politicians and switch to new incumbent congress members, they will start from a diversification strategy, that is, choosing a few politicians but donating relatively small amounts to each person to minimize their risks of losing politicians again. On the other, when firms ensure the successful political connections, they will allocate firm resources to other non-market or market strategies.

5.2 Lobbying Expenditures

Apart from campaign contributions to access politicians, there are a number of ways firms can have political influence. The sheer relevance of the $3.26 billion lobbying expenditures in 2014[28], makes it absolutely the most influential way for large organizations to seek an impact on legislations or bills. At the same time, as shown in Bertrand et al. (2020), corporate philanthropy, which reaches $5.5 billion in 2014[29], can also be used to seek political influence. Compared to previous literature, our identification strategy leveraging exogenous variations of congress members allow us to uncover the relationships between lobbying and political connections with committee members.

We repeat the event study specification in Equation 2 and replace the dependent variables with our variables of interest: log of firm PAC lobbying expenditures and log of charitable donations from corporate foundations[30].Table 12 reports our estimation results. In Figure

[27]As defined before, firms experiencing exiles of connected politicians during a congressional election defeat.

[28]Source: OpenSecrets

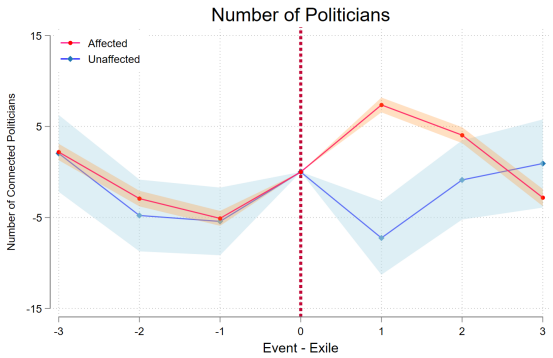
[29]Source: Bertrand et al. (2020)

[30]The data of corporate foundations is from Bertrand et al. (2020), who restrict the sample within S&P500 firms. In our analysis of corporate charitable donations, we drop firms without any charitable donations in any period.

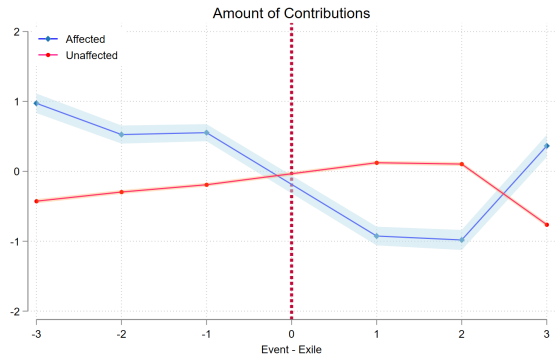
Figure 5: Campaign Contributions

This figure plots estimated coefficients and depicts 95% confidence intervals of firms' campaign contribution strategies after experiencing exiles of connected politicians, within a six-congress (12 years) time horizon. Firms are categorized as either affected or unaffected by committee exile during a congressional election defeat. In all the regressions we keep politicians who have ever received campaign contributions in a Congress, and with average seniority in all assigned committees smaller or equal to 4 (8 years), as well as firms ever participated in campaign contributions. Firm level controls include log of sales, log of employment and log of historical total campaign contributions. Panel (a) and (b) examine log of number of congress members and total campaign contribution amount, respectively. Base group is t = 0. All monetary variables are deflated by annual CPI (2015 = 100).

(a) Number of Politicians



(b) Contribution Amount



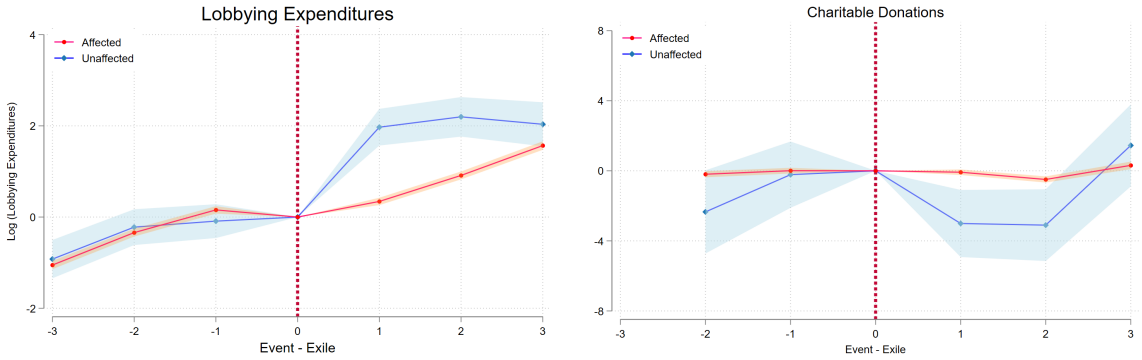
6, we plot estimated coefficients and depicts 95% confidence intervals of other non-market strategies after experiencing exiles of connected politicians over time. For firms experiencing exiles, lobbying expenditures and charitable donations keep consistent before and after the congressional election defeat. If firms secure political connections, however, they expand their lobbying expenditures dramatically but cut down charitable donations.

Along with strategical campaign contributions in the previous section, our results have a number of potentially important implications on how firms leverage different non-market strategies. First, campaign contributions to congress members might be the prioritized strategy when firms seek political influence, because other strategies change only when there are unexpected changes in political connections with congress members. Second, firms will lobby only if they are connected to incumbent congress members, implying that political connections with committee members determine the magnitude of the firm to try to influence legislations. Third, when firms secure more political connections, they decrease their charitable donations. Consistent with Bertrand et al. (2020) and Perez-Truglia et al. (2021), our results suggests that corporate philanthropy can be an alternative tool to have political influence. In other words, the two pillars of non-market strategies can be intercorrelated - corporate social responsibility can be used as a form of corporate political activities.

Figure 6: Other Non-market Strategies

This figure plots estimated coefficients and depicts 95% confidence intervals of firms' lobbying expenditures and charitable donations after experiencing exiles of connected politicians, within a six-congress (12 years) time horizon. Firms are categorized as either affected or unaffected by committee exile during a congressional election defeat. In all the regressions we keep politicians who have ever received campaign contributions in a Congress, and with average seniority in all assigned committees smaller or equal to 4 (8 years), as well as firms ever participated in campaign contributions. Dependent variables are log of lobbing expenditures and charitable doantions, respectivley. Base group is t = 0. All monetary variables are deflated by annual CPI (2015 = 100).

(a) Lobbying Expenditures (b) Charitable Donations



5.3 Corporate Policies

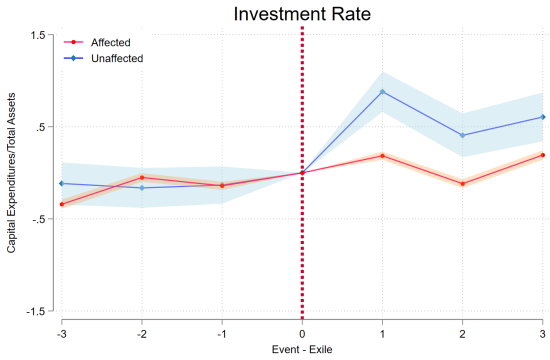
Thus far, our analysis has demonstrated corporate political connections are important in shaping firms' non-market strategies. Since corporate policies are interdependent, we now show that political connections are an determining factor in firm production decisions, with the previous event study design as in equation 2, and the same treatment (affected) and control (unaffected) groups. In particular, we focus on the two most important production decisions: capital investment and R&D expenditures. The former shows firm scale of capital while the latter captures firm investment in technology (Maybe some PAPERS!).

Table 13 reports the estimation results. In Figure 7, we plot estimated coefficients and depicts 95% confidence intervals of corporate policies affected by political connections. As shown in Panel (a), firms securing political connections after a congressional election defeat tend to have higher investment rates, which is legitimate because these firms are awarded more valuable procurement contracts and subsidies, and less tax-constrained (See Figure 4). They have more incentives and resources to invest in production. However, Panel (b) indicates that there is a shrinkage of R&D expenditures of the firms securing political connections, implying the hindering role of political connections on productivity growth in firm decisions. This is also consistent with Akcigit et al. (2022) who shows a similar role of political connections on firm innovation activities.

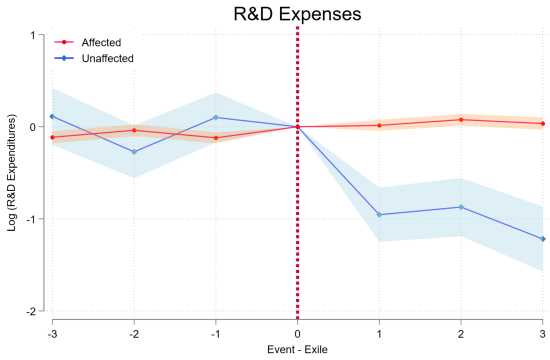
Figure 7: Corporate Policies

This figure plots estimated coefficients and depicts 95% confidence intervals of corporate policies (market strategies) after experiencing exiles of connected politicians, within a six-congress (12 years) time horizon. Firms are categorized as either affected or unaffected by committee exile during a congressional election defeat. In all the regressions we keep politicians who have ever received campaign contributions in a Congress, and with average seniority in all assigned committees smaller or equal to 4 (8 years), as well as firms ever participated in campaign contributions. Firm level controls include log of sales, log of employment and log of historical total campaign contributions. Panel (a) and (b) examine capital investment rate and log of R&D expenses, respectively. Base group is t = 0. All monetary variables are deflated by annual CPI (2015 = 100).

(a) Investment



(b) R&D Expenditures



6 The Model

To quantify the general-equilibrium effects of political connections on market power, we develop and estimate a parsimonious model of imperfect competition and government procurement in a large economy. We build on De Loecker, Eeckhout, and Mongey (2021) and García-Santana, di Giovanni, Jeenas, Moral-Benito, and Pijoan-Mas (2022) with two main assumptions. First, there are many markets where heterogeneous firms compete strategically in their own, small markets. Second, there is a private good submarket and public good submarket within each market, and all firms in a market choose not only whether to enter the private submarket, but also whether to build up political connections to access the public submarket. We start with a model in which labor is the only input to production.

6.1 Setup

Environment. Time is discrete. There are two types of agents: households and firms. Households are identical, consume goods, supply labor and trade shares in a representative portfolio of all firms in the ecnomy which pay dividends. There are a continuum of size 1 of households indexed by i. Firms are organized in a continuum of markets indexed $j \in [0, 1]$. There are two final goods in the economy: the private sector good, Y_p used by households to consume, and the public sector good Y_g, purchased by the government to produce public consumption. Each market contains M potential entrant firms, of which, $M_{jp} \leq M$ firms choose to pay the entry cost ϕ_p enter the private good market and produce. And $M_{jg} \leq M$ firms choose

to pay a fixed entry cost ϕ_g in order to build up political connections and enter the public good market[31]. To make sure the set of firms entering the public submarkets also enters the private ones, we assume $\phi_p \leq \phi_g$. The entering firms are indexed $i \in \{1, ..., M_{jp}\}$ and $i \in \{1, ..., M_{jg}\}$, respectively. A single firm produces a single good indexed ij.

Household. The utility of consumption of the differentiated final goods is the double Constant Elasticity of Substitution (CES) aggregator of consumption utility from goods within markets and across the continuum of markets. The cross-market elasticity of demand is denoted $\theta_p > 1$ and $\theta_g > 1$. The within-sector elasticity of demand is denoted $\eta_p > 1$ and $\eta_g > 1$. These elasticities satisfy $\eta_p > \theta_p$ and $\eta_g > \theta_g$, indicating that both households and government are more willing to substitute goods within a market rather than across markets. Households discount the future at rate β, choose consumption of each good c_{ijt} and inelastically supply one unit of labor. A household maximizes:

$$\sum_{t=0}^{\infty} \beta^t U(C_t - \bar{\psi}^{-\frac{1}{\psi}} \frac{N_t^{1+\frac{1}{\psi}}}{1+\frac{1}{\psi}}) \quad \text{where} \quad C_t = [\int_0^1 c_{jpt}^{\frac{\theta_p}{\theta_p - 1}} dj]^{\frac{\theta_p - 1}{\theta_p}} \quad \text{and} \quad c_{jpt} = [\sum_{i=1}^{M_{jpt}} M_{jpt}^{-\frac{1}{\eta_p}} c_{ijpt}^{\frac{\eta_p}{\eta_p - 1}}]^{\frac{\eta_p - 1}{\eta_p}}. \tag{3}$$

Households consume their income in each period and buy X_t share of portofolio of firms at price Q_t. Households receive after-tax labor income W_t and returns on shares due to sale and dividends Π_t. Households do not save. Therefore, their budget constraint is given by:

$$\int_0^1 \sum_{i=1}^{M_{jpt}} p_{ijpt} c_{ijpt} dj + Q_t X_{t+1} \leq (1-\tau) Z_t = (1-\tau)(W_t N_t + (Q_t + \Pi_t) X_t). \tag{4}$$

Government. The government randomly select a measure M_{jgt} of firms from the set of firms that enter the public good sector and purchases from these selected firms. I_g represents the set of sectors with firms selected by the government. Similar to private submarkets, the final goods of public sectors are imperfectly competitive. The government collect lumpsum tax $T = \tau Z$ and choose their consumption c_{ijgt} to maximize their utility:

$$\sum_{t=0}^{\infty} \beta^t U(C_t) \quad \text{where} \quad C_{gt} = [\int_{I_g} c_{jgt}^{\frac{\theta_g}{\theta_g - 1}} dj]^{\frac{\theta_g - 1}{\theta_g}} \quad \text{and} \quad c_{jgt} = [\sum_{i=1}^{M_{jpt}} M_{jgt}^{-\frac{1}{\eta_g}} c_{ijgt}^{\frac{\eta_g}{\eta_g - 1}}]^{\frac{\eta_g - 1}{\eta_g}}, \tag{5}$$

and the buget constraint for the government is given by:

$$\int_{I_{jg}} \sum_{i=1}^{M_{jgt}} p_{ijgt} c_{ijgt} dj \leq T_t = \tau Z_t. \tag{6}$$

[31] As long as we assume the entry cost is higher for the public submarkets, it is easy to show that firms choosing to enter the public submarket will always enter the private one.

Firm. Firms are heterogneous in productivity denoted by z_{ijt}. The production technology is linear in labor such that $y_{ijt} = y_{ijpt} + y_{ijgt} = z_{ijt}(n_{ijpt} + n_{ijgt})$. Firms need to use resource equivalent to ϕ_g produced by $\frac{\phi_g}{W}$ unit of labor to build up political connections in order to have a possitive probability to obtain a government contract. Firms face no adjustment costs over time and do not accumulate assets. Since there is no aggregate shocks, we can drop time subscripts and discuss the firm's static problem that will eventually maximize firm's uility in infinite time horizon.

Timing. At the begining of each period, productivity shocks for the M potential firms in each sector are realized, which determines z_{ijt}. Given the realization of the shocks, potential firms decide whether to operate in the private good submarket and whether to build politicla connections and enter the public good submarket. Then the government selects firms to purchase from and firms produce or stay out.Firms that operate in the market make their production choices and pay wages. In the next period, all firms productivity evolves.

Market Competition and Equilibrium. With a finite nuber of firms in each market, firms exert market power. We follow De Loecker, Eeckhout, and Mongey (2021) and model firm's behavior by means of Cournot quantity competition. Firms indirectly compete with all firms in the economy but there are no strategic interactions between a given firm in market j and another firm in market j'. Each firm is therefore infinitesmially small relative to all firms in other markets and take the price indices of all other markets p_{-j} as given.

Within a market j, there is strategic interaction within either public and private submarket. Firm i chooses its quantity y_{ijp} and y_{ijg}, taking the quantities y_{-ijp} and y_{-ijg} of its $M_{jp} - 1$ and $M_{jg} - 1$ competitors as given, respectively.

Since we assume private and public sectors are two seperate submarkets, a firm's strategy in the public sector does not have an impact on the price of its good in the private sector(this must hold). Without financial frictions, a firm's strategy in the public sector will not directly affect its strategy in the private sector. Therefore, the two choices of output quantities y_{ijp} and y_{ijg} by a given firm will not affect each other.

Then, given market demand, the firm maximizes its profit:

$$\begin{aligned}\pi(y_{ijp}, y_{ijg}; \mathbf{y}_{-ijp}, \mathbf{y}_{-ijg}) = &\max_{y_{ijp}, y_{ijg}, \mathbb{1}(\phi_g>0)} p(y_{ijp}; \mathbf{y}_{-ijp}, P_p, Y_p) y_{ijp} - \frac{W}{z_{ij}} y_{ijp} - W\phi_p \\ &+ \mathbb{1}(\phi_g > 0)\big(p(y_{ijg}; \mathbf{y}_{-ijg}, P_g, Y_g) y_{ijg} - \frac{W}{z_{ij}} y_{ijg} - W\phi_g\big). \qquad (7)\end{aligned}$$

6.2 Political Connections and Public Procurement

The government has control over the subset of goods purchased by the public sector. For simplicity, the model features a basic random selection rule: any firm that pays the entry cost into the public sector ϕ has the same probability of being selected ($d_{it} = 1$). We assume a fixed tax rate τ and $T = \tau Z$ $(= WN + \Pi)$. Entry cost ϕ_g represents the average campaign contributions given by the firms to politicians in order to reveal their productivity. In the

simple model without saving, we assume the political connection is temporary and only last until the start of next period.

The government follows a simple stochastic rule for the allocation of procurement contracts based on the number of applications (all political connected firms). In this case, the total number of selcted goods/firms are fixed to $\{G_{jg}\}_{j\in J}$ and the probability of a firm being selcted depends both on G_{ig} and the number of participated firms M_{jg} in sector j: $Pr(d_{it} = 1|\phi > 0) = \frac{G_{jg}}{M_{jg}}$.

6.3 Comparative Statics

In this section, we study the effects of changing parameters on market structures. In particular, we focus on the change of entry cost into the public submarkets ϕ_g. In year 2002, the restrictions on the limits of political contributions by both CEOs and firms were lifted, leading to the increase in contributions by most participated CEOs and firms. Although the overall participant rate among listed firms does not decrease, considering the increase in overall productivity and sales among these firms, the participant rate would have decreased should the productivity distribution of firms hold the same. An increase in the entry cost to build political connections ϕ_g helps to generate the decrease in the participant rate of political contributions. In this paper, we simplify the procedure of government procurement decisions and use the increase in ϕ_g to discuss the general equilibrium effects driven by the increase in political contributions cap.

Results. Figure 8 depicts our model predictions. Holding the distribution of firm productivity, market structure and the number of government contracts the same, an increase in ϕ_g leads to a decrease in entrants into the public submarkets and thus an increase in firms' markup of the goods sold to the government, and sales are reallocated to higher markup firms, both contribute to the higher "political" markup. The production in the private submarkets is not affected if we fix the price of the final private good to 1. Therefore, the increase in firms' overall markups mostly reflect a compositional effect.

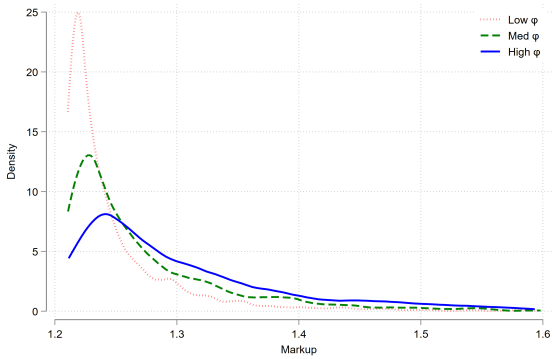
6.4 Estimation

We estimate the model using the data from year 2000 to 2014 (107th-113th Congress), at firm-Congress level. As shown in Table 1, we choose a set of external parameters from previous literature and data, and estimate parameters that matches the key moments of the data. At this stage, apart from externally chosen parameters (elastiticity of substitutes η_g, η_p, θ_g, θ_p, preference taste $\bar{\psi}$ and labor supply elasticity ψ), there are 4 parameters to be estimated: market structure M, variance of firm productivity σ, public submarkets entry cost ϕ_g and tax rate to fund government procurement τ. The estimates in different period are independent because the model is static. We do not specify functional forms in the main estimation as they can be recovered non-parametrically.

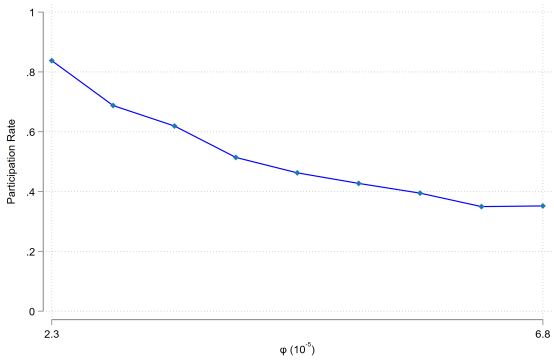
Figure 8: Model Predictions

This figure visualizes model predictions on the effect of ϕ. Panel (a) depicts distribution of markups under high and low ϕ scenarios. Panel (b) plots participation rate of political connections against different values of ϕ.

(a) Distribution of Markups



(b) Comparative Statics



6.4.1 Estimation Procedure

Market. We identify the number of potential firms within each market by average markups from the data. Average markups will increase as number of potential firms decrease. The variance of markups within each market is determined by the distribution of firm productivity.

Government procurement. The tax rate τ to fund government procurement can be estimated in two ways. Following García-Santana et al. (2022), τ can be directly identified from the share of government procurement contract value in total sales. On the other hand, we estimate the increase in markup in return to political contributions β_{exile} in our baseline results, as shown in Table 4. In that case, we can identify τ indirectly by matching it to the moment $\beta_{exile} \times \overline{\text{Contributions}}$.

6.4.2 Estimation Results

Market structure M have similar effect on average markups as entry cost ϕ_g. To focus on the effect of public submarkets, we estimate M, firm productivity dispersion σ and $\bar{\psi}$ using the first congress years with comprehensive procurement, contribution and other firm financial data (2001-2002) and set the values of the two parameters of the rest years equal to the ones from 2001-2002. The estimated parameters are displayed in Table 1b.

Consistent with the decreasing in political connection participation, we observe an increasing in entry cost ϕ_g of public submarkets. Second, the overall ratio of contract value over sales increases, leading to an increase in τ. As discussed in section 6.3, the increase in the two parameters will lead to an increase in the average and variance of markups.

Table 1: Model Parameters

This table shows the parameters externally chosen or to be estimated in the model.

(a) External Parameters

Parameter	Symbol	Value	Source
Goods Market			
Elasticity of Substitutes within private submarkets	η_p	5.75	De Loecker et al. (2021)
Elasticity of Substitutes across private submarkets	θ_p	1.2	De Loecker et al. (2021)
Elasticity of Substitutes within public submarkets	η_g	5.75	De Loecker et al. (2021)
Elasticity of Substitutes within private submarkets	θ_g	1.2	De Loecker et al. (2021)
Labor Market			
Labor supply elasticity	ψ	0.25	Chetty et al. (2011)
Government Procurement Contracts			
Value of procurement contracts/Total Sales	$\tau_{t=107\text{th Congress}}$	0.0020	Sample Average
	$\tau_{t=108\text{th Congress}}$	0.0026	
	$\tau_{t=109\text{th Congress}}$	0.0036	
	$\tau_{t=110\text{th Congress}}$	0.0104	
	$\tau_{t=111\text{th Congress}}$	0.0784	
	$\tau_{t=112\text{th Congress}}$	0.0712	
	$\tau_{t=113\text{th Congress}}$	0.1128	

(b) Calibrated Parameters: By Congress

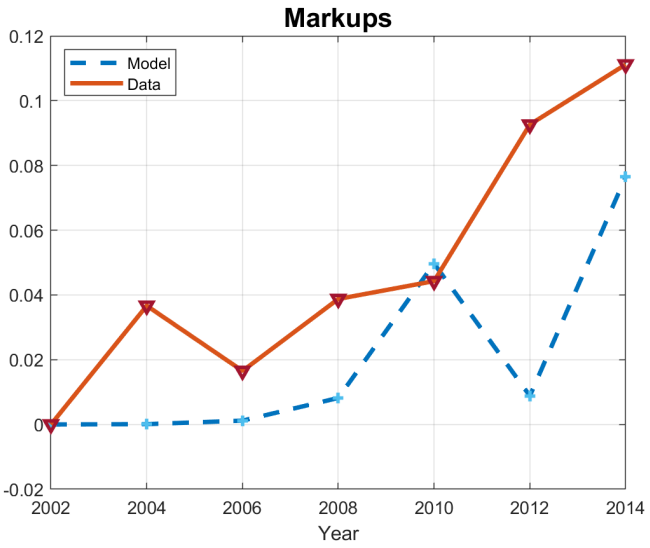
Parameter Symbol	Standard Deviation of Firm productivity σ_t	Entry Cost of Political Connections $\phi_{g,t}$ $(\times 10^{-6})$
107th Congress	0.059	1.751
108th Congress	0.070	1.904
109th Congress	0.081	2.984
110th Congress	0.075	10.078
111th Congress	0.147	50.926
112th Congress	0.049	19.934
113th Congress	0.064	70.592

6.4.3 Implications

In the previous section, we do not target the distribution of markups. With the estimation results, we can now analyze the contribution to the rise of markups from two channels: competition within the public submarkets and increase in the output of public good (government expenditures). We first compare the increase in markups from the model with the ones obtained from the data. Second, we decompose the rise in markups into the two channels mentioned above. In the end, we anaylze the change of wages and employment over time.

Markups. Our model predict 69% and 86% of the rise of markups of all firms and top 10% firms, respectively, as can be seen from figure 9. We decompose the change in markups into the two channels: ϕ_g and τ by shutting down one of the two channels. Over the period, the changes in entry cost donimates the changes in markups and account for almost all of the rise of markups. At the same time, the increase in tax rate τ contribute to the increase of markups for large firms.

Figure 9: Markups: Data vs. Model

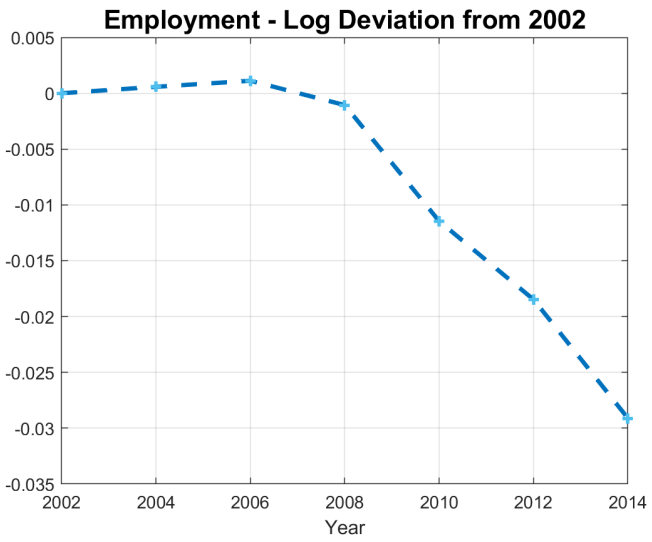


Labor Markets. Our model predicts a decrease in equilibrium employment. The employment decreases because for a given an equilibrium wage, firms with higher market power sell less at higher prices and thus hire fewer workers.

7 Conclusion

Political connections have an indispensible foothold in firm's non-market environment. The impacts of corporate political connections associated with firms' funds in politics, however, are challenging to perorate due to the endogeneity of political connections to other non-market or market strategies. To provide a systematic and quantitative study on the effect of political connections, we exploit an important congressional procedure to unfold the comprehensive consequences and implications of political connections with congressional committee members

Figure 10: Implications: Employment



on firm strategies and market power. Our identification strategy allows us to conceive two sensible roles of political connections. First, political connections do reward firms with higher market power via government procurement contracts, financial subsidies and effective tax rates. Second, there is no isolated strategy in both non-market and market environment. Firms can leverage different non-market strategies to tactically seek political influence, while on the other hand, non-market strategies affect market strategies and outcomes. Overall, our empirical evidence is suggestive of firm strategic decisions in exerting political influence, which has a contributing role in the rise of market power of large firms over time.

On the other hand, our model allows us to evaluate the general-equilibrium effect of corporate political connections, which can be informative on the overall economic consequences of the Bipartisan Campaign Reform Act of 2002. The raised limits on campaign contributions reallocate resources to large firms, which can be a channel contributing to the rise of market power of large firms in De Loecker et al. (2020). As a concrete mechanism affecting firm strategies and market power, political connections are supposed to have their significant roles in within-firm as well as across-firm wage inequality, both of which shed lights on our future lines of research.

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A The Model

A.1 Demand

A.1.1 Household

$$Y = \left(\int_j (\frac{1}{J_p})^{\frac{1}{\theta_p}} \Big(\sum_i (\frac{1}{M_{jp}})^{\frac{1}{\eta_p}} y_{ijp}^{\frac{\eta_p - 1}{\eta_p}} \Big)^{\frac{\eta_p}{\eta_p - 1} \frac{\theta_p - 1}{\theta_p}} \right)^{\frac{\theta_p}{\theta_p - 1}} \tag{8}$$

subject to the budget constraint

$$\int_j \sum_i p_{ijp} y_{ijp} dj \leq (1 - \tau) Z_p (= WN + \Pi) \tag{9}$$

where Z_p is the total income of household in each period. Then the optimization problem can be written as:

$$\mathcal{L} = \left(\int_j (\frac{1}{J_p})^{\frac{1}{\theta_p}} \Big(\sum_i (\frac{1}{M_{jp}})^{\frac{1}{\eta_p}} y_{ijp}^{\frac{\eta_p - 1}{\eta_p}} \Big)^{\frac{\eta_p}{\eta_p - 1} \frac{\theta_p - 1}{\theta_p}} dj \right)^{\frac{\theta_p}{\theta_p - 1}} - \Lambda \left(\int_j \sum_i p_{ijp} y_{ijp} dj - (1 - \tau) Z_p \right) \tag{10}$$

which leads to

$$\frac{y_{i'jp}}{y_{ijp}} = (\frac{p_{i'jp}}{p_{ijp}})^{-\eta_p} \Leftrightarrow \frac{\sum_{i'} p_{i'jp} y_{i'jp}}{y_{ijp}} = \frac{\sum_{i'} p_{i'jp}^{1-\eta_p}}{p_{ijp}^{-\eta_p}} \Leftrightarrow y_{ijp} = \frac{Z_{jp} p_{ijp}^{-\eta_p}}{p_{jp}} \tag{11}$$

where $p_{jp} y_{jp} = Z_{jp} = \sum_{i'} p_{i'jp} y_{i'jp}$ and $p_{jp} = \Big(\sum_i (\frac{1}{M_{jp}}) p_{ijp}^{1-\eta_p} \Big)^{\frac{1}{1-\eta_p}}$.
Re-write the above lagarangian equation use sector level output and price y_{jp} and p_{jp}:

$$\mathcal{L} = \left(\int_j (\frac{1}{J_p})^{\frac{1}{\theta_p}} y_{jp}^{\frac{\theta_p - 1}{\theta_p}} dj \right)^{\frac{\theta_p}{\theta_p - 1}} - \Lambda \left(\int_j p_{jp} y_{jp} dj - (1 - \tau) Z_p \right) \tag{12}$$

and similar to the results above

$$\frac{y_{j'p}}{y_{jp}} = (\frac{p_{j'p}}{p_{jp}})^{-\theta_p} \Leftrightarrow \frac{\sum_{j'} p_{j'p} y_{j'p}}{y_{jp}} = \frac{\sum_{j'} p_{j'p}^{1-\theta_p}}{p_{jp}^{-\theta_p}} \Leftrightarrow y_{jp} = \frac{Z_p p_{jp}^{-\theta_p}}{P_p} \tag{13}$$

where $p_p y_p = Z_p = \int_j p_{jp} y_{jp}$ and $P_p = \Big(\int_j (\frac{1}{J})^{\frac{1}{\theta_p}} p_{jp}^{1-\theta_p} \Big)^{\frac{1}{1-\theta_p}}$.

A.1.2 Government

$$Y = \left(\int_j (\frac{1}{J_g})^{\frac{1}{\theta_g}} \Big(\sum_i (\frac{1}{M_{jg}})^{\frac{1}{\eta_g}} y_{ijg}^{\frac{\eta_g - 1}{\eta_g}} \Big)^{\frac{\eta_g}{\eta_g - 1} \frac{\theta_g - 1}{\theta_g}} \right)^{\frac{\theta_g}{\theta_g - 1}} \tag{14}$$

subject to the budget constraint

$$\int_j \sum_i p_{ijg} y_{ijg} dj \leq T (= (1 - \tau) Z_p) \tag{15}$$

where T is the total tax obtained by the government. Then the optimization problem can be written as:

$$\mathcal{L} = \left(\int_j (\frac{1}{J_g})^{\frac{1}{\theta_g}} \Big(\sum_i (\frac{1}{M_{jg}})^{\frac{1}{\eta_g}} y_{ijg}^{\frac{\eta_g - 1}{\eta_g}} \Big)^{\frac{\eta_g}{\eta_g - 1} \frac{\theta_g - 1}{\theta_g}} dj \right)^{\frac{\theta_g}{\theta_g - 1}} - \Lambda \left(\int_j \sum_i p_{ijg} y_{ijg} dj - (1 - \tau) Z_g \right) \tag{16}$$

which leads to

$$\frac{y_{i'jg}}{y_{ijg}} = \big(\frac{p_{i'jg}}{p_{ijg}}\big)^{-\eta_g} \Leftrightarrow \frac{\sum_{i'} p_{i'jg} y_{i'jg}}{y_{ijg}} = \frac{\sum_{i'} p_{i'jg}^{1-\eta_g}}{p_{ijg}^{-\eta_g}} \Leftrightarrow y_{ijg} = \frac{Z_{jg} p_{ijg}^{-\eta_g}}{p_{jg}} \tag{17}$$

where $p_{jg} y_{jg} = Z_{jg} = \sum_{i'} p_{i'jg} y_{i'jg}$ and $p_{jg} = \Big(\sum_i \big(\frac{1}{M_{jg}}\big) p_{ijg}^{1-\eta_g} \Big)^{\frac{1}{1-\eta_g}}$.
Re-write the above lagarangian equation use sector level output and price y_{jg} and p_{jg}:

$$\mathcal{L} = \left(\int_j (\frac{1}{J_g})^{\frac{1}{\theta_g}} y_{jg}^{\frac{\theta_g - 1}{\theta_g}} dj \right)^{\frac{\theta_g}{\theta_g - 1}} - \Lambda \left(\int_j p_{jg} y_{jg} dj - (1 - \tau) Z_g \right) \tag{18}$$

and similar to the results above

$$\frac{y_{j'g}}{y_{jg}} = \big(\frac{p_{j'g}}{p_{jg}}\big)^{-\theta_g} \Leftrightarrow \frac{\sum_{j'} p_{j'g} y_{j'g}}{y_{jg}} = \frac{\sum_{j'} p_{j'g}^{1-\theta_g}}{p_{jg}^{-\theta_g}} \Leftrightarrow y_{jg} = \frac{Z_g p_{jg}^{-\theta_g}}{P_g} \tag{19}$$

where $p_g y_g = Z_g$ and $P_g = \Big(\int_j (\frac{1}{J})^{\frac{1}{\theta_g}} p_{jg}^{1-\theta_g} \Big)^{\frac{1}{1-\theta_g}}$.

A.1.3 Firm's Choices: Cournot-Nash Equilibrium

From the above derivations, we obtain

$$p_{ijp} = y_{ijp}^{-\frac{1}{\eta_p}} y_{jp}^{\frac{1}{\eta_p}-\frac{1}{\theta_p}} \frac{P_p}{Y^{-\frac{1}{\theta_p}}} \tag{20}$$

same for public sector

$$p_{ijg} = y_{ijg}^{-\frac{1}{\eta_g}} y_{jg}^{\frac{1}{\eta_g}-\frac{1}{\theta_g}} \frac{P_g}{Y^{-\frac{1}{\theta_g}}} \tag{21}$$

Since we assume private and public sectors are two seperate submarkets, a firm's strategy in the public sector will not have an impact on the price of its good in the private sector(this must hold). Without financial frictions, a firm's strategy in the public sector will not directly affect its strategy in the private sector. Therefore, the two choices of output quantities y_{ijp} and y_{ijg} by a given firm will not affect each other.

Conditional on entry of both submarkets (entry costs already paid), a firm's profit maximization problem can be written as (let $X_p = \frac{P_p}{Y^{-\frac{1}{\theta_p}}}$ and $X_g = \frac{P_g}{Y^{-\frac{1}{\theta_g}}}$):

$$\pi_{ij} = \max_{y_{ijp}, y_{ijg}} y_{ijp}^{1-\frac{1}{\eta_p}} y_{jp}^{\frac{1}{\eta_p}-\frac{1}{\theta_p}} X_p - \frac{W}{z_{ij}} y_{ijp} + y_{ijg}^{-\frac{1}{\eta_g}} y_{jg}^{\frac{1}{\eta_g}-\frac{1}{\theta_g}} X_g - \frac{W}{z_{ij}} y_{ijg} \tag{22}$$

Taking the FOC wrt. both choice variables (notice that within sector total quantities y_{jp} and y_{jg} are affected by individual firms and market share $s_{ijp} = \frac{\partial y_{jp}}{\partial y_{ijp}} \frac{y_{ijp}}{y_{jp}}$ and $s_{ijg} = \frac{\partial y_{jg}}{\partial y_{ijg}} \frac{y_{ijg}}{y_{jg}}$),

$$\frac{W}{z_{ij}} = (1 - \frac{1}{\eta_p}) p_{ijp} + (\frac{1}{\eta_p} - \frac{1}{\theta_p}) p_{ijp} s_{ijp} \tag{23}$$

$$\frac{W}{z_{ij}} = (1 - \frac{1}{\eta_g}) p_{ijg} + (\frac{1}{\eta_g} - \frac{1}{\theta_g}) p_{ijg} s_{ijg} \tag{24}$$

and therefore, we obtain the markup in each submarket

$$p_{ijp} = \mu_{ijp} \frac{W}{z_{ij}} \tag{25}$$

$$\mu^*_{ijp} = \frac{[\frac{1}{\theta_p} s_{ijp} + (1 - s_{ijp}) \frac{1}{\theta_p}]^{-1}}{[\frac{1}{\theta_p} s_{ijp} + (1 - s_{ijp}) \frac{1}{\theta_p}]^{-1} - 1} \tag{26}$$

$$p_{ijg} = \mu_{ijg} \frac{W}{z_{ij}} \tag{27}$$

$$\mu^*_{ijg} = \frac{[\frac{1}{\theta_g} s_{ijg} + (1 - s_{ijg}) \frac{1}{\theta_g}]^{-1}}{[\frac{1}{\theta_g} s_{ijg} + (1 - s_{ijg}) \frac{1}{\theta_g}]^{-1} - 1} \tag{28}$$

The firm will choose to sell to HHs and the government up to the point s.t.

$$\frac{p_{ijp}}{p_{ijg}} = \frac{\mu^*_{ijp}}{\mu^*_{ijg}} \tag{29}$$

Notice that effect of entry costs of public submarket ($\mathbb{1}(\phi_g > 0)$) is similar to the effect of entry costs of private submarket ($\mathbb{1}(\phi_p > 0)$). As we assume government choose a fixed number of total contracts N_{jg} for each sector j and the probability of obtaining government contracts is a decreasing function of number of participated firms M_{jg} $\forall j$, firms' entry decisions can be written as:

$$\mathbb{1}(\phi_g > 0) = \mathbb{1}(y^*_{ijg}(\mu^*_{ijg} - 1)\frac{W}{z_{ij}} > \frac{\phi_g}{f(M_{jg})}) \tag{30}$$

Therefore, the higher the entry cost ϕ_g, the higher the entry threshold $\bar{z}_{ij}$ is for a firm to enter the public sector, the higher s_{ijg} for all the participated firms and therefore higher markup μ_{ijg} for a firm that enter the public submarket.
In this setting, apart from the general equilibrium force driven by taxation, the fact that a firm sells goods to the government does not affect its market share and thus its markup in the private submarket.

A.2 Solution

Without intercation between the public and the private submarkets within each sector, the solution is similar to the one in De Loecker, Eeckhout, and Mongey (2021).
Household Solution The household's comsumption choices $\{c_{ijp}\}_{i\in\mathcal{M}_{jp},j\in J_p}$ are given by:

$$c(p_{ijp}; \mathbf{p}_{-ijp}, P_p, C_p) = \left(\frac{p_{ijp}}{p_{jp}(p_{ijp}; \mathbf{p}_{-ijp})}\right)^{-\eta_p} \left(\frac{p_{jp}(p_{ijp}; \mathbf{p}_{-ijp})}{P_p}\right)^{-\theta_p} C_p \tag{31}$$

where $p_{jp}(p_{ijp}; \mathbf{p}_{-ijp}) = \left(\sum_i (\frac{1}{M_{jp}}) p_{ijp}^{1-\eta_p}\right)^{\frac{1}{1-\eta_p}}$ and $P_p = \left(\int_j (\frac{1}{J})^{\frac{1}{\theta_p}} p_{jp}^{1-\theta_p}\right)^{\frac{1}{1-\theta_p}}$. The aggregate expenditure can not exceed after-tax total income $(1-\tau)Z = WN + \Pi$.
The household's labor supply is given by: $N^s(W) = \bar{\psi} W^{\psi}$, which only depends on W. We interpret the labor supply as the number of workers with fixed working hours instead of the hours worked by each worker since we only have information about aggregate employment.
Government Solution Similar for the government's comsumption choices $\{c_{ijg}\}_{i\in\mathcal{M}_{jg},j\in J_g}$ are given by:

$$c(p_{ijg}; \mathbf{p}_{-ijg}, P_g, C_g) = \left(\frac{p_{ijg}}{p_{jg}(p_{ijg}; \mathbf{p}_{-ijg})}\right)^{-\eta_g} \left(\frac{p_{jg}(p_{ijg}; \mathbf{p}_{-ijg})}{P_g}\right)^{-\theta_g} C_g \tag{32}$$

where $p_{jg}(p_{ijg}; \mathbf{p}_{-ijg}) = \left(\sum_i \left(\frac{1}{M_{jg}}\right) p_{ijg}^{1-\eta_g} \right)^{\frac{1}{1-\eta_g}}$ and $P_g = \left(\int_j (\frac{1}{J})^{\frac{1}{\theta_g}} p_{jg}^{1-\theta_g} \right)^{\frac{1}{1-\theta_g}}$. The aggregate expenditure can not exceed $T = \tau Z$.

Firm Solution We solve the firm entry and production decisions backwards. Firms take as given their belief about aggregate outcomes (W, P, Y). In the last stage, given the set of entrants M_{jp} and M_{jg} for the private and the public submarkets within sector j, respectively, firms choose their output y_{ijp} and y_{ijg} taking into account the choices by the other firms within the same sector y_{-ijp} and y_{-ijg}. The FOC condition of the firm profit maximization problem is given by:

$$p_{ijp}(y_{ijp})[1 + \frac{1}{\epsilon_{ijp}}] = \frac{W}{z_{ij}} \tag{33}$$

$$p_{ijg}(y_{ijg})[1 + \frac{1}{\epsilon_{ijg}}] = \frac{W}{z_{ij}} \tag{34}$$

where $\epsilon_{ijp} = \frac{p_{ijp}(y_{ijp})}{p'_{ijp} y_{ijp}}$ and $\epsilon_{ijg} = \frac{p_{ijg}(y_{ijg})}{p'_{ijg} y_{ijg}}$ is the residual demand elasticity.

Market Equilibrium The unique Cournot-Nash equilibrium allocation among M_{jp} and M_{jg} entrants satisfies:

$$p_{ijp} = \mu_{ijp}(\frac{W}{z_{ij}}), \quad \mu_{ijp} = \frac{\epsilon_{ijp}}{\epsilon_{ijp} - 1} \tag{35}$$

$$p_{ijg} = \mu_{ijg}(\frac{W}{z_{ij}}), \quad \mu_{ijg} = \frac{\epsilon_{ijg}}{\epsilon_{ijg} - 1} \tag{36}$$

where the residual demand elasticity ϵ and market share s are given by:

$$\epsilon_{ijp} = [s_{ijp}\frac{1}{\theta_p} + (1 - s_{ijp})\frac{1}{\eta_p}]^{-1}, \quad s_{ijp} = \frac{p_{ijp} y_{ijp}}{\sum_{i'}^{M_{jp}} p_{i'jp} y_{i'jp}} = \frac{1}{M_{jp}} (\frac{p_{ijp}}{p_{jp}})^{1-\eta_p} \tag{37}$$

$$\epsilon_{ijg} = [s_{ijg}\frac{1}{\theta_g} + (1 - s_{ijg})\frac{1}{\eta_g}]^{-1}, \quad s_{ijg} = \frac{p_{ijg} y_{ijg}}{\sum_{i'}^{M_{jg}} p_{i'jg} y_{i'jg}} = \frac{1}{M_{jg}} (\frac{p_{ijg}}{p_{jg}})^{1-\eta_g} \tag{38}$$

Wage Normalize the price for final private goods to 1 ($P_p = 1$), we obtain the wage through the following equations:

$$P_p = \left[\int_j \frac{1}{J} \left((\sum_i \frac{1}{M_{jp}} p_{ijp}^{1-\eta_p})^{\frac{1}{1-\eta_p}} \right)^{1-\theta_p} dj \right]^{\frac{1}{1-\theta_p}} \tag{39}$$

$$\Leftrightarrow$$

$$\frac{W}{P_p} = \left[\int_j \frac{1}{J} \left(\sum_i \frac{1}{M_{jp}} (\frac{z_{ij}}{\mu_{ijp}})^{\eta_p - 1} \right)^{\frac{1-\theta_p}{1-\eta_p}} dj \right]^{\frac{1}{\theta_p - 1}} \tag{40}$$

Wage of Final Public Good Apply the obtained wage to the price of public final good:

$$P_g = \left[\int_j \frac{1}{J} \left((\sum_i \frac{1}{M_{jg}} p_{ijg}^{1-\eta_g})^{\frac{1}{1-\eta_g}} \right)^{1-\theta_g} dj \right]^{\frac{1}{1-\theta_g}} \tag{41}$$

$$\Leftrightarrow$$

$$\frac{W}{P_g} = \left[\int_j \frac{1}{J} \left(\sum_i \frac{1}{M_{jg}} (\frac{z_{ij}}{\mu_{ijg}})^{\eta_g - 1} \right)^{\frac{1-\theta_g}{1-\eta_g}} dj \right]^{\frac{1}{\theta_g - 1}} \tag{42}$$

Labor Market Clearing

$$N_p^d = Y_p (\frac{W}{P_p})^{-\theta_p} \int_j \frac{1}{J} \left(\sum_i (\frac{z_{ij}}{\mu_{ijp}})^{\eta_p - 1} \right)^{\frac{\eta_p - \theta_p}{1-\eta_p}} \left(\sum_i \frac{1}{z_{ij}} (\frac{z_{ij}}{\mu_{ijp}})^{\eta_p} \right) dj + \int_j M_{jp} \phi_p dj \tag{43}$$

$$N_g^d = Y_g (\frac{W}{P_g})^{-\theta_g} \int_j \frac{1}{J} \left(\sum_i (\frac{z_{ij}}{\mu_{ijg}})^{\eta_g - 1} \right)^{\frac{\eta_g - \theta_g}{1-\eta_g}} \left(\sum_i \frac{1}{z_{ij}} (\frac{z_{ij}}{\mu_{ijg}})^{\eta_g} \right) dj + \int_j M_{jg} \phi_g dj \tag{44}$$

$$N^d = N_p^d + N_g^d \tag{45}$$

$$Y_g = Y_p \frac{\tau}{1-\tau} \tag{46}$$

$$N^s = \bar{\psi} \big(\frac{(1-\tau)W}{P_p} \big)^{\psi} \tag{47}$$

$$N^d = N^s \tag{48}$$

Firm Entry To close the equilibrium described above, we now discuss how the number of firms in both submarkets in each sector is determined. A firm enters any submarkets within its sector if it expect positive profit:

$$\mathbb{1}(\phi_p > 0) = \mathbb{1}(y_{ijp}^* (\mu_{ijp}^* - 1) \frac{W}{z_{ij}} \geq \phi_p) \tag{49}$$

$$\mathbb{1}(\phi_g > 0) = \mathbb{1}(y_{ijg}^* (\mu_{ijg}^* - 1) \frac{W}{z_{ij}} \geq \frac{\phi_g}{f(M_{jg})}) \tag{50}$$

Although the Cournot Nash Equilibrium described above given $\{M_{jp}\}_{j \in J_p}$ and $\{M_{jg}\}_{j \in J_g}$ is unique, there can be multiple equilibria due to the symetric homogeneous sectors. We select one equilibrium following the procedure described in De Loecker, Eeckhout, and Mongey (2021).

A.3 Solve the Equilibrium: Procedure

We follow De Loecker, Eeckhout, and Mongey (2021) to solve the model:

1. all firms draw the productivity;

2. starting with an equilibirum where all firms enter both submarkets in each market/sector and obtain equilibrium markups for all firms;

3. normalize P = 1 and obtain equilibrium wage W and output Y and profits for each firm (if a firm enters two submarkets, then it has two profits);

4. identify the sector and index of the firm with the lowest profit(among all possible profits including those obtained from the public and the private submarkets), if it is negative, mark it as out of market and put the markup and output of this firm to 0, then get the equilibrium markups for that sector, and get the W, Y and profits for all other firms;

5. repeat 4 until all firms have positive profits.

B Appendix B: Tables and Figures

Table 2: Variable Definitions

This table provides definitions of variables in the tables, as well as their sources.

Variable	Definition	Main Data Source
Firm PAC Contributions	Campaign contributions from Political Action Committee (PAC) sponsored by the firm to a committee member in a Congress	OpenSecrets
Firm PAC Historical Contributions	Total campaign contributions from PAC sponsored by the firm to a committee member to a member up to current Congress	OpenSecrets
Firm PAC Contributions to Incumbent Members	Total campaign contributions from PAC sponsored by the firm to all current incumbent members in Congress	OpenSecrets
Firm PAC Contributions to Historically Incumbent Members	Total campaign contributions from PAC sponsored by the firm to all historically incumbent members up to current Congress	OpenSecrets
Number of Contracts	Firm's total active number of procurement contracts in the Congress	usaspending.gov
Value of Contracts	Firm's total value of active procurement contracts in the Congress	usaspending.gov
Financial Subsidies	Total financial subsidies awarded to the firm by federal, state or local government	Good Jobs First
Effective Tax Rates	(income taxes total - deferred taxes)/(pretax income - equity in earning + special items + interest expense)	Compustat
Number of Politicians	Total number of committee members connected to the firm via campaign contributions in a Congress	OpenSecrets
Lobbying Expenditures	Total lobbying expenditures associated with firm PAC	OpenSecrets
Independent Expenditures	Total independent expenditures associated with firm PAC	OpenSecrets
Charitable Donations	Total charitable donations from the corporate foundations	Bertrand et al. (2020)
Investment	Capital Expenditures/Gross Property, Plant and Equipment	Compustat
Equity Issuance	Sales of Equity/Total Assets	Compustat
Distributions to Shareholders	(Common Dividends + Preferred Dividends)/Total Assets	Compustat
Profits	Sales - (Cost of Goods Sold + Capital Cost + Selling, General, and Administrative Expense)	Compustat
Markup 1	Sales/(Cost of Goods Sold + Capital Cost)	Compustat
Markup 2	Sales/(Cost of Goods Sold + Capital Cost + Selling, General, and Administrative Expense)	Compustat

Table 3: Summary Statistics

This table reports summary statistics of the data. Panel (a) reports firm-Congress level. Panel (b) reports firm PAC and CEO individual campaign contributions to Congressional committee members, conditional on participation of each type. Panel (c) reports the data unconditional on participation. All monetary variables are deflated by annual CPI (2015 = 100).

(a) Firm-Congress

	N	Mean	SD	Min	Median	Max
CEO Total Compensation (Thousands)	25,354	10,501.28	11,663.35	292.17	6,518.97	66,939.58
Sales (Millions)	25,354	10,599.65	23,806.43	24.79	2,670.22	163993.66
Employment (Thousands)	24,996	15.90	33.58	0.03	4.43	226.40
Firm PAC Contributions	25,354	38,727.40	132979.23	0.00	0.00	924982.44
CEO Contributions	25,354	1,267.21	3,615.67	0.00	0.00	22,763.10
Lobbying Expenditures (Firm PAC)	25,354	811386.15	2.90e+06	0.00	0.00	2.04e+07
Independent Expenditures (Firm PAC)	25,354	13,263.78	83,571.04	0.00	0.00	731768.38
Investment Rate	24,858	0.56	1.34	0.00	0.19	10.09
R&D Exenditures (Millions)	25,354	174.48	646.85	0.00	0.00	4,905.41
Equity Issuance	24,858	0.24	0.80	0.00	0.02	6.25
Distribution to Shareholders	24,858	0.42	1.16	0.00	0.07	8.61
Profitability	25,282	-0.05	0.23	-1.09	0.00	0.51
Markup: Measure 1	23,397	1.83	1.49	0.48	1.38	10.84
Markup: Measure 2	23,416	1.13	0.30	0.34	1.08	2.40
Number of Politicians Connected with Firm	25,354	12.60	39.37	0.00	0.00	459.00
Number of Politicians Connected with CEO	25,354	0.68	1.95	0.00	0.00	30.00

(b) Firm-Congress-Politician: Conditional

	N	Mean	SD	Min	Median	Max
Firm PAC	319,343	3,562.89	3,658.61	4.50	2,244.21	85,156.18
CEO Individual	17,267	2,018.97	1,511.62	22.49	1,511.03	18,814.76

(c) Firm-Congress-Committee

	N	Mean	SD	Min	Median	Max
Firm PAC: Contributions	187,322	15,140.85	30,041.86	10.51	6,175.56	913880.63
CEO: Contributions	41,285	2,458.28	2,114.15	22.49	1,651.65	34,655.78
Firm PAC: Number of Politicians	187,322	4.24	5.66	1.00	2.00	99.00
CEO: Number of Politicians	41,285	3.05	4.88	1.00	1.00	85.00

(d) Firm-Congress-Politician: Unconditional

	N	Mean	SD	Min	Median	Max
Firm PAC Contributions	13441673	84.65	782.58	0.00	0.00	85,156.18
CEO Contributions	13441673	2.59	90.36	0.00	0.00	18,814.76
Firm PAC Total Contributions	13441673	38,943.00	133252.39	0.00	0.00	924982.44
CEO Total Contributions	13441673	1,281.46	3,646.03	0.00	0.00	22,998.42
Lost Connection (Dummy)	13441673	0.14	0.35	0.00	0.00	1.00

Table 4: Baseline Results

This table reports estimated coefficients and standard errors of the baseline regression results. The main independent variables a dummy of connected, a dummy of exile, and their interactions. From column (1) to (4) the 1-period ahead dependent variables are log of sales, log of profits and two measures of markups, respectively.In all the regressions we keep politicians who have ever received campaign contributions to Congress members, with average seniority in all assigned committees smaller or equal to 4 (8 years). Firm level controls include log of sales and employment. We also include firm, CEO, politician and Congress fixed-effects. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Log (Sales)$_{i,t}$ × 1,000	Log (Profits)$_{i,t}$ × 1,000	Markup 1 × 100	Markup 2 × 100
	(1)	(2)	(3)	(4)
Connected_i,p,t-1 = 1	0.620***	-4.15***	0.381**	0.090**
	(0.085)	(1.53)	(0.191)	(0.036)
Exile$_{p,t}$ = 1	0.019	0.230	0.054	0.007
	(0.092)	(1.55)	(0.202)	(0.039)
Connected_i,p,t-1 = 1 × Exile$_{p,t}$ = 1	**-0.594*****	**-7.48***	**-1.68*****	**-0.207****
	(0.217)	(3.93)	(0.504)	(0.096)
Log (Sales)$_{i,t-1}$	425.2***	-68.7***	-95.1***	-11.0***
	(0.438)	(9.01)	(1.07)	(0.205)
Log (Employment)$_{i,t-1}$	14.9***	-75.0***	11.7***	0.548***
	(0.053)	(1.09)	(0.130)	(0.025)
Observations	5,391,776	3,274,638	4,090,408	4,090,752
R^2	0.96590	0.85177	0.86608	0.94660
Within R^2	0.25185	0.00226	0.00255	0.00071
Firm FE	✓	✓	✓	✓
CEO FE	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓
Politician FE	✓	✓	✓	✓

Table 5: Robustness: Exile-able Politicians

This table reports estimated coefficients and standard errors of regressions within politicians who have ever been exiled, with the same specification as the baseline regression. The main independent variables a dummy of connected, a dummy of exile, and their interactions. From column (1) to (4) the 1-period ahead dependent variables are log of sales, log of profits and two measures of markups, respectively.In all the regressions we keep politicians who have ever received campaign contributions to Congress members, with average seniority in all assigned committees smaller or equal to 4 (8 years). Firm level controls include log of sales and employment. We also include firm, CEO, politician and Congress fixed-effects. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Log (Sales)$_{i,t}$ × 1,000	Log (Profits)$_{i,t}$ × 1,000	Markup 1 × 100	Markup 2 × 100
	(1)	(2)	(3)	(4)
Connected_i,p,t-1 = 1	1.97***	7.60	2.37***	0.309***
	(0.279)	(4.67)	(0.571)	(0.112)
Exile$_{p,t}$ = 1	0.070	0.691	0.152	0.017
	(0.139)	(2.34)	(0.294)	(0.058)
Connected_i,p,t-1 = 1 × Exile$_{p,t}$ = 1	-2.08***	-21.5***	-4.59***	-0.523***
	(0.336)	(5.81)	(0.718)	(0.141)
Log (Sales)$_{i,t-1}$	429.2***	-48.9**	-85.8***	-11.3***
	(0.924)	(19.0)	(2.20)	(0.430)
Log (Employment)$_{i,t-1}$	14.5***	-81.2***	10.4***	0.566***
	(0.111)	(2.27)	(0.263)	(0.051)
Observations	1,222,791	773,932	960,097	960,165
R^2	0.96652	0.85014	0.85846	0.94142
Within R^2	0.25210	0.00248	0.00215	0.00075
Firm FE	✓	✓	✓	✓
CEO FE	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓
Politician FE	✓	✓	✓	✓

Table 6: Robustness: Controlling for Contribution Strategies

This table reports estimated coefficients and standard errors of the regression results in which we control for firm contribution strategies, measured by firm total contributions in the Congress, all historical contributions up to the Congress or the number of politicians contributed in the Congress. The main independent variables are a dummy of connection, a dummy of exile, and their interactions. The 1-period ahead dependent variables are log of sales from column (1) to (3), log of profits from column (4) to (6), markup measure 1 from column (7) to (9), and markup measure 2 from column (10) to (12), respectively. In columns (1), (4), (7) and (10) we control for firm total campaign contributions in one Congress. In columns (2), (5), (8) and (11) we control for firm historical total campaign contributions in all Congresses. In columns (3), (6), (9) and (12) we control for number of politicians contributed in the Congress. In all the regressions we keep politicians who have ever received campaign contributions to Congress members, with average seniority in all assigned committees smaller or equal to 4 (8 years). Firm level controls include log of sales and employment. We also include firm, CEO, politician and Congress fixed-effects. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Log (Sales)$_{i,t}$ × 1,000			Log (Profits)$_{i,t}$ × 1,000			Markup 1 × 100			Markup 2 × 100		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Connected_i,p,t-1 = 1	0.523***	0.581***	0.501***	-2.23	-3.36**	-1.21	0.462**	0.553***	0.420**	0.096***	0.087**	0.092**
	(0.085)	(0.085)	(0.085)	(1.54)	(1.54)	(1.54)	(0.191)	(0.191)	(0.191)	(0.036)	(0.036)	(0.037)
Exile$_{p,t}$ = 1	0.019	0.018	0.019	0.234	0.234	0.239	0.054	0.055	0.054	0.007	0.007	0.007
	(0.092)	(0.092)	(0.092)	(1.55)	(1.55)	(1.55)	(0.202)	(0.202)	(0.202)	(0.039)	(0.039)	(0.039)
Connected_i,p,t-1 = 1 × Exile$_{p,t}$ = 1	-0.616***	-0.589***	-0.615***	-7.46*	-7.54*	-7.55*	-1.67***	-1.69***	-1.68***	-0.205**	-0.206**	-0.207**
	(0.217)	(0.217)	(0.217)	(3.93)	(3.93)	(3.93)	(0.504)	(0.504)	(0.504)	(0.096)	(0.096)	(0.096)
Log (Sales)$_{i,t-1}$	424.6***	424.6***	424.7***	-43.9***	-53.5***	-35.8***	-93.1***	-91.8***	-94.6***	-10.9***	-11.0***	-10.9***
	(0.439)	(0.439)	(0.439)	(9.04)	(9.04)	(9.03)	(1.08)	(1.08)	(1.08)	(0.206)	(0.206)	(0.206)
Log (Employment)$_{i,t-1}$	14.9***	14.9***	14.9***	-73.3***	-75.1***	-74.1***	11.8***	11.7***	11.7***	0.555***	0.548***	0.549***
	(0.054)	(0.053)	(0.054)	(1.09)	(1.09)	(1.09)	(0.130)	(0.130)	(0.130)	(0.025)	(0.025)	(0.025)
Log (Firm PAC Total Contributions)$_{i,t-1}$	0.107***			-5.84***			-0.323***			-0.022***		
	(0.006)			(0.131)			(0.017)			(0.003)		
Log (Firm PAC Historical Total Contributions)$_{i,t-1}$		0.183***			-3.56***			-0.774***			0.015***	
		(0.009)			(0.165)			(0.021)			(0.004)	
Log (Number of Politicians Contributed)$_{i,t-1}$			0.212***			-13.8***			-0.188***			-0.010
			(0.012)			(0.272)			(0.034)			(0.007)
Observations	5,388,577	5,391,776	5,391,776	3,271,752	3,274,638	3,274,638	4,087,209	4,090,408	4,090,408	4,087,553	4,090,752	4,090,752
R^2	0.96588	0.96590	0.96590	0.85182	0.85179	0.85189	0.86612	0.86612	0.86608	0.94662	0.94660	0.94660
Within R^2	0.25180	0.25191	0.25190	0.00282	0.00240	0.00305	0.00264	0.00289	0.00256	0.00072	0.00072	0.00071
Firm FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CEO FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Politician FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 7: Robustness: Dollar Amount of Campaign Contributions

This table reports estimated coefficients and standard errors of regression results in which we use log of PAC contributions to denote political connections. The main independent variables are log of firm PAC contributions, a dummy of exile, and their interactions. From column (1) to (4) the 1-period ahead dependent variables are log of sales, log of profits and two measures of markups, respectively.In all the regressions we keep politicians who have ever received campaign contributions to Congress members, with average seniority in all assigned committees smaller or equal to 4 (8 years). Firm level controls include log of sales and employment. We also include firm, CEO, politician and Congress fixed-effects. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Log (Sales)$_{i,t}$ × 1,000	Log (Profits)$_{i,t}$ × 1,000	Markup 1$_{i,t}$ × 100	Markup 2$_{i,t}$ × 100
	(1)	(2)	(3)	(4)
Log (Firm PAC Contribution)$_{i,p,t-1}$	0.044***	-0.262**	0.022*	0.006**
	(0.006)	(0.105)	(0.013)	(0.002)
Exile$_{p,t}$ = 1	-0.249*	-3.18	-0.741**	-0.089
	(0.132)	(2.31)	(0.299)	(0.057)
Log (Firm PAC Contribution)$_{i,p,t-1}$ × Exile$_{p,t}$ = 1	**-0.039*****	**-0.493***	**-0.115*****	**-0.014****
	(0.015)	(0.267)	(0.034)	(0.007)
Log (Sales)$_{i,t-1}$	425.2***	-68.7***	-95.1***	-11.0***
	(0.438)	(9.01)	(1.07)	(0.205)
Log (Employment)$_{i,t-1}$	14.9***	-75.0***	11.7***	0.548***
	(0.053)	(1.09)	(0.130)	(0.025)
Observations	5,391,776	3,274,638	4,090,408	4,090,752
R^2	0.96590	0.85177	0.86608	0.94660
Within R^2	0.25185	0.00226	0.00255	0.00071
Firm FE	✓	✓	✓	✓
CEO FE	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓
Politician FE	✓	✓	✓	✓

Table 8: Robustness: Stock of Campaign Contributions

This table reports estimated coefficients and standard errors of the regression results in which we measure political connections by historically total campaign contributions from the firm to the politician. The main independent variables are log of firm PAC contributions, a dummy of exile, and their interactions. From column (1) to (4) the 1-period ahead dependent variables are log of sales, log of profits and two measures of markups, respectively.In all the regressions we keep politicians who have ever received campaign contributions to Congress members, with average seniority in all assigned committees smaller or equal to 4 (8 years). Firm level controls include log of sales and employment. We also include firm, CEO, politician and Congress fixed-effects. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Log (Sales)$_{i,t}$ × 1,000	Log (Profits)$_{i,t}$ × 1,000	Markup 1$_{i,t}$ × 100	Markup 2$_{i,t}$ × 100
	(1)	(2)	(3)	(4)
Log (Firm PAC Historical Contribution)$_{i,p,t-1}$	0.086***	-0.027	0.005	0.010***
	(0.006)	(0.107)	(0.013)	(0.003)
Exile$_{p,t}$ = 1	-0.127	-1.82	-0.423*	-0.054
	(0.105)	(1.82)	(0.235)	(0.045)
Log (Firm PAC Historical Contribution)$_{i,p,t-1}$ × Exile$_{p,t}$ = 1	**-0.034*****	**-0.465***	**-0.108*****	**-0.014****
	(0.013)	(0.243)	(0.031)	(0.006)
Log (Sales)$_{i,t-1}$	425.2***	-68.7***	-95.0***	-11.0***
	(0.438)	(9.01)	(1.07)	(0.205)
Log (Employment)$_{i,t-1}$	14.9***	-75.0***	11.7***	0.548***
	(0.053)	(1.09)	(0.130)	(0.025)
Observations	5,391,006	3,274,157	4,089,818	4,090,162
R^2	0.96589	0.85176	0.86607	0.94660
Within R^2	0.25186	0.00226	0.00255	0.00071
Firm FE	✓	✓	✓	✓
CEO FE	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓
Politician FE	✓	✓	✓	✓

Table 9: Robustness: Quintiles of Campaign Contributions

This table reports estimated coefficients and standard errors of the regression results in which we divide campaign contributions into quintiles. Quintile 1 includes zero contributions, and quintile 2-5 are divided by quartiles of non-zero contributions. The main independent variables are log of firm PAC contributions, a dummy of exile, and their interactions. From column (1) to (4) the 1-period ahead dependent variables are log of sales, log of profits and two measures of markups, respectively.In all the regressions we keep politicians who have ever received campaign contributions to Congress members, with average seniority in all assigned committees smaller or equal to 4 (8 years). Firm level controls include log of sales and employment. We also include firm, CEO, politician and Congress fixed-effects. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Log (Sales)$_{i,t}$ × 1,000	log_profit_cong_lead1_r	Markup 1	Markup 2
	(1)	(2)	(3)	(4)
Firm PAC Contributions$_{p,t}$ - Q2	0.541***	-1.14	1.01***	0.078
	(0.136)	(2.47)	(0.304)	(0.058)
Firm PAC Contributions$_{p,t}$ - Q3	0.594***	-5.61*	0.749**	0.209***
	(0.162)	(2.87)	(0.359)	(0.069)
Firm PAC Contributions$_{p,t}$ - Q4	0.684***	-6.32**	0.330	0.118*
	(0.161)	(2.87)	(0.360)	(0.069)
Firm PAC Contributions$_{p,t}$ - Q5	0.724***	-4.68	-1.06***	-0.054
	(0.165)	(2.92)	(0.369)	(0.071)
Firm PAC Contributions$_{p,t}$ - Q2 × Exile$_{p,t}$ = 1	-0.902**	-11.3	-1.01	-0.233
	(0.373)	(6.92)	(0.867)	(0.166)
Firm PAC Contributions$_{p,t}$ - Q3 × Exile$_{p,t}$ = 1	-0.719	-20.2**	-2.15**	-0.283
	(0.453)	(8.15)	(1.05)	(0.200)
Firm PAC Contributions$_{p,t}$ - Q4 × Exile$_{p,t}$ = 1	-0.438	0.085	-2.76***	-0.211
	(0.449)	(8.09)	(1.05)	(0.201)
Firm PAC Contributions$_{p,t}$ - Q5 × Exile$_{p,t}$ = 1	-0.157	2.38	-1.24	-0.093
	(0.451)	(7.96)	(1.04)	(0.200)
Exile$_{p,t}$ = 1	0.018	0.219	0.054	0.007
	(0.092)	(1.55)	(0.202)	(0.039)
Log (Sales)$_{i,t-1}$	425.2***	-68.7***	-95.1***	-11.0***
	(0.438)	(9.01)	(1.07)	(0.205)
Log (Employment)$_{i,t-1}$	14.9***	-75.0***	11.7***	0.548***
	(0.053)	(1.09)	(0.130)	(0.025)
Observations	5,391,776	3,274,638	4,090,408	4,090,752
R^2	0.96590	0.85177	0.86608	0.94660
Within R^2	0.25185	0.00227	0.00256	0.00071
Firm FE	✓	✓	✓	✓
CEO FE	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓
Politician FE	✓	✓	✓	✓

Table 10: Channels

This table reports estimated coefficients and standard errors of potential channels benefiting firm sales. In all the regressions we keep politicians who have ever received campaign contributions in a Congress, and with average seniority in all assigned committees smaller or equal to 4 (8 years), as well as firms ever participated in campaign contributions. In Panel (a) with standard diff-in-diff design, we regress dependent variables on a dummy of firm experiencing committee exile interacted with a dummy of post-exile periods. In Panel (b) with dynamic diff-in-diff design, we regress dependent variables on a dummy of firm experiencing committee exile interacted with time (Congress) dummies. Column (1) and column (2) study channels of log of number and value of government contracts newly awarded in each Congress, respectively. Column (3) examine channels of log of financial subsidies. The effective tax rates in column (4). All variables are defined and computed as in Table 2. Government contracts and financial subsidies data is dropped in the first period (106th Congress spanning 1999-2000) due to imcompleteness. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

(a) Standard Diff-in-Diff

	Log (Value of New Exercised Contracts)	Log (Financial Subsidies)	Effective Tax Rates
Affected × After = 1	-4.309***	-2.013***	0.035***
	(0.726)	(0.167)	(0.003)
R-squared	0.311	0.179	0.008
No. obs	93,322	331,807	236,016
Firm Controls	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes

(b) Dynamic Diff-in-Diff

	Log (Value of New Exercised Contracts)	Log (Financial Subsidies)	Effective Tax Rates
Affected × t-3			-0.028***
			(0.005)
Affected × t-2	-2.925**	-0.409	0.009*
	(1.291)	(0.264)	(0.005)
Affected × t-1	2.097*	0.482*	-0.017***
	(1.274)	(0.252)	(0.005)
Affected × t+1	-5.014***	-1.748***	0.028***
	(1.174)	(0.260)	(0.005)
Affected × t+2	-4.792***	-1.458***	0.023***
	(1.203)	(0.280)	(0.006)
Affected × t+3	-2.939**	-3.013***	0.036***
	(1.261)	(0.308)	(0.007)
R-squared	0.349	0.182	0.015
No. obs	93,322	331,807	236,016
Firm Controls	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes

Table 11: Firm Strategies after Committee Exile: Campaign Contributions

This table reports estimated coefficients and standard errors of firm campaign contribution strategies after committee exile. In all the regressions we keep politicians who have ever received campaign contributions in a Congress, and with average seniority in all assigned committees smaller or equal to 4 (8 years), as well as firms ever participated in campaign contributions. In Panel (a) with standard diff-in-diff design, we regress dependent variables on a dummy of firm experiencing committee exile interacted with a dummy of post-exile periods. In Panel (b) with dynamic diff-in-diff design, we regress dependent variables on a dummy of firm experiencing committee exile interacted with time (Congress) dummies. Firm level controls include log of sales and employment. Column (1) examines log of number of members connected. Column (2) examines log of total campaign contributions. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

(a) Standard Diff-in-Diff

	Number of Politicians	Log (PAC Contributions)
Affected × After = 1	6.084***	1.149***
	(1.304)	(0.043)
R-squared	0.339	0.256
No. obs	402,121	401,557
Firm Controls	Yes	Yes
Politician FE	Yes	Yes

(b) Dynamic Diff-in-Diff

	Number of Politicians	Log (PAC Contributions)
Affected × t-3	0.154	-1.400***
	(2.199)	(0.072)
Affected × t-2	1.858	-0.822***
	(2.056)	(0.067)
Affected × t-1	0.333	-0.745***
	(1.942)	(0.064)
Affected × t+1	14.626***	1.049***
	(2.102)	(0.069)
Affected × t+2	4.927**	1.086***
	(2.260)	(0.074)
Affected × t+3	-3.746	-1.127***
	(2.513)	(0.082)
R-squared	0.341	0.265
No. obs	402,121	401,557
Firm Controls	Yes	Yes
Politician FE	Yes	Yes

Table 12: Firm Strategies after Committee Exile: Other Non-Market Strategies

This table reports estimated coefficients and standard errors of other corporate non-market strategies after committee exile. In all the regressions we keep politicians who have ever received campaign contributions in a Congress, and with average seniority in all assigned committees smaller or equal to 4 (8 years), as well as firms ever participated in campaign contributions. In Panel (a) with standard diff-in-diff design, we regress dependent variables on a dummy of firm experiencing committee exile interacted with a dummy of post-exile periods. In Panel (b) with dynamic diff-in-diff design, we regress dependent variables on a dummy of firm experiencing committee exile interacted with time (Congress) dummies. Firm level controls include log of sales and employment. Column (1) examines log of firm lobbying expenditures. Column (2) examines log of independent expenditures, which starts only from two periods before exile. Column (3) examines log of charitable donations of which we restrict the sample within S&P 500 firms, collected from Bertrand et al. (2020). All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

(a) Standard Diff-in-Diff

	Log (Lobbying Expenditures)	Log (Independent Expenditures)	Log (Charitable Donations)
Affected × After = 1	-1.202***	1.493***	-0.402
	(0.130)	(0.154)	(0.509)
R-squared	0.164	0.166	0.089
No. obs	402,121	340,754	222,872
Firm Controls	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes

(b) Dynamic Diff-in-Diff

	Log (Lobbying Expenditures)	Log (Independent Expenditures)	Log (Charitable Donations)
Affected × t-3	-0.130		4.157***
	(0.219)		(1.171)
Affected × t-2	-0.120	-1.618***	6.652***
	(0.205)	(0.236)	(0.865)
Affected × t-1	0.246	-1.989***	4.060***
	(0.193)	(0.220)	(0.811)
Affected × t+1	-1.628***	0.052	2.147***
	(0.209)	(0.236)	(0.828)
Affected × t+2	-1.285***	-0.024	2.272***
	(0.225)	(0.254)	(0.844)
Affected × t+3	-0.467*	-1.890***	3.131***
	(0.250)	(0.282)	(0.876)
R-squared	0.167	0.169	0.092
No. obs	402,121	300,288	222,872
Firm Controls	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes

Table 13: Corporate Policies: Market Strategies

This table reports estimated coefficients and standard errors of some of firm production and financing policies after committee exile. In all the regressions we keep politicians who have ever received campaign contributions in a Congress, and with average seniority in all assigned committees smaller or equal to 4 (8 years), as well as firms ever participated in campaign contributions. In Panel (a) with standard diff-in-diff design, we regress dependent variables on a dummy of firm experiencing committee exile interacted with a dummy of post-exile periods. In Panel (b) with dynamic diff-in-diff design, we regress dependent variables on a dummy of firm experiencing committee exile interacted with time (Congress) dummies. Firm level controls include log of sales and employment. From column (1) to (4), we examine investment rates, R&D expenditures, equity issuance and distribution to shareholders, all of which are defined in Table 2. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

(a) Standard Diff-in-Diff

	Investment Rate	Log (R&D Expenditures)	Equity Issuance	Distributions to Shareholders
Affected × After = 1	-0.546***	1.081***	0.008	0.364***
	(0.071)	(0.095)	(0.020)	(0.086)
R-squared	0.013	0.058	0.010	0.016
No. obs	399,816	402,121	399,816	399,816
Firm Controls	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes

(b) Dynamic Diff-in-Diff

	Investment Rate	Log (R&D Expenditures)	Equity Issuance	Distributions to Shareholders
Affected × t-3	-0.225*	-0.226	-0.046	-0.706***
	(0.120)	(0.160)	(0.034)	(0.145)
Affected × t-2	0.113	0.234	-0.112***	-0.485***
	(0.112)	(0.150)	(0.032)	(0.135)
Affected × t-1	-0.008	-0.221	-0.091***	-0.578***
	(0.106)	(0.141)	(0.030)	(0.128)
Affected × t+1	-0.696***	0.970***	-0.153***	0.108
	(0.115)	(0.153)	(0.033)	(0.138)
Affected × t+2	-0.525***	0.949***	0.032	-0.259*
	(0.123)	(0.165)	(0.035)	(0.149)
Affected × t+3	-0.413***	1.253***	0.015	0.033
	(0.137)	(0.183)	(0.039)	(0.165)
R-squared	0.014	0.058	0.011	0.021
No. obs	399,816	402,121	399,816	399,816
Firm Controls	Yes	Yes	Yes	Yes
Politician FE	Yes	Yes	Yes	Yes

Figure 11: Co-movement between Campaign Contributions and Markups

This figure depicts 50% and 95% percentiles of firm-level markups and corporate campaign contributions to congressional committee members, respectively. Following De Loecker et al. (2020), we define firm-level markup as sales/(cost of goods sold + capital cost) and eliminate firms with reported cost-of-goods to sales and SG&A to sales ratios in the top and bottom 1%, where the percentiles are computed for every two years (one Congress) separately. Both markup and campaign contributions are measured in every two years (one Congress), and %50 percentiles of campaign contributions are always zero. All monetary variables are deflated by annual CPI (2015 = 100).

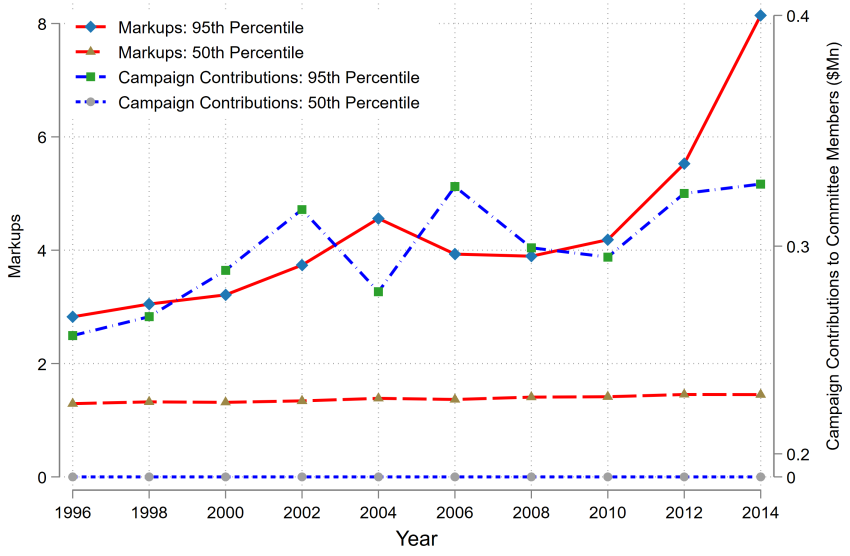
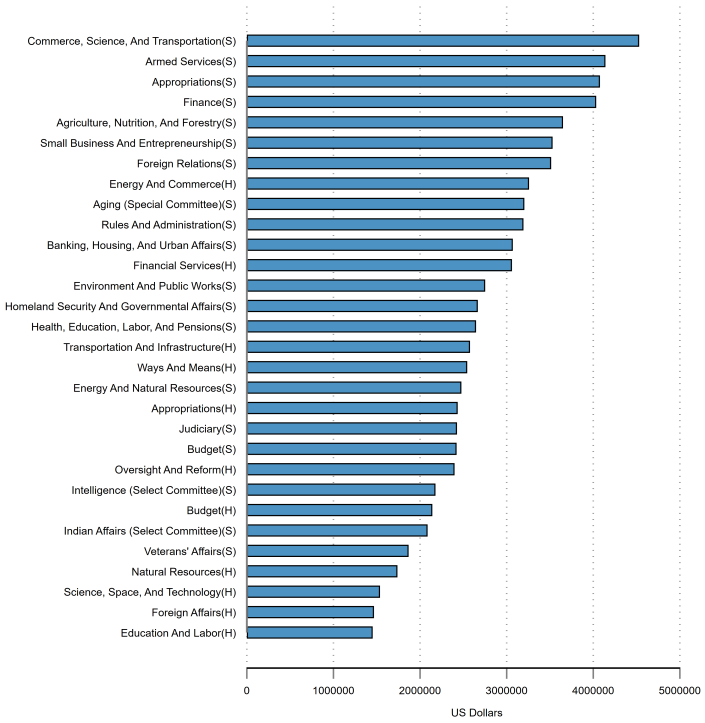


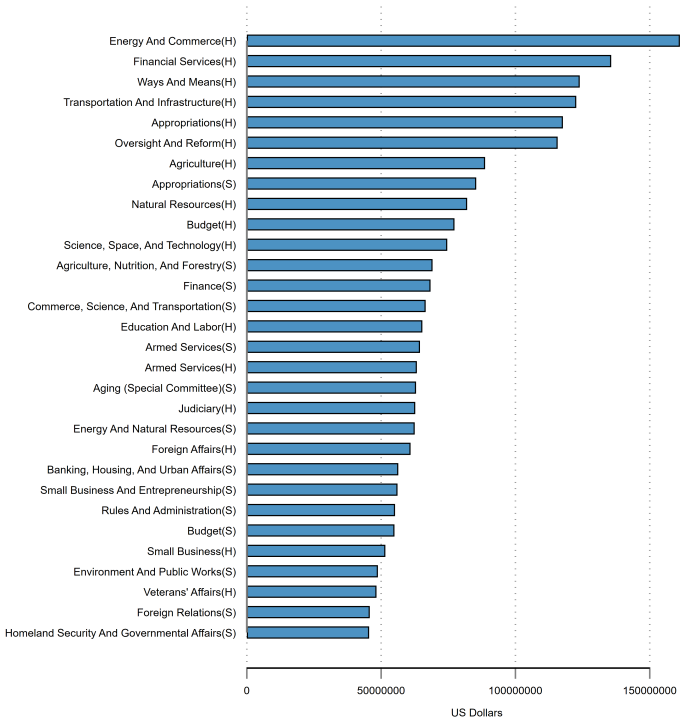
Figure 12: Firm vs. CEO Aggregate Campaign Contributions to Congressional Committees

This figure plots total campaign contributions to each congressional committee over 1993-2014. Subfigure (a) and (b) list the top 30 committees in terms of total campaign contributions received from CEOs or firm PACs, respectively. Subfigure (c) and (d), in heatplots, show top 30 committees in terms of total campaign contributions received from CEOs or firm PACs, by 1-digit SIC industry code. Senate committees end with (S), and House committees with (H). All monetary variables are deflated by annual CPI (2015 = 100).

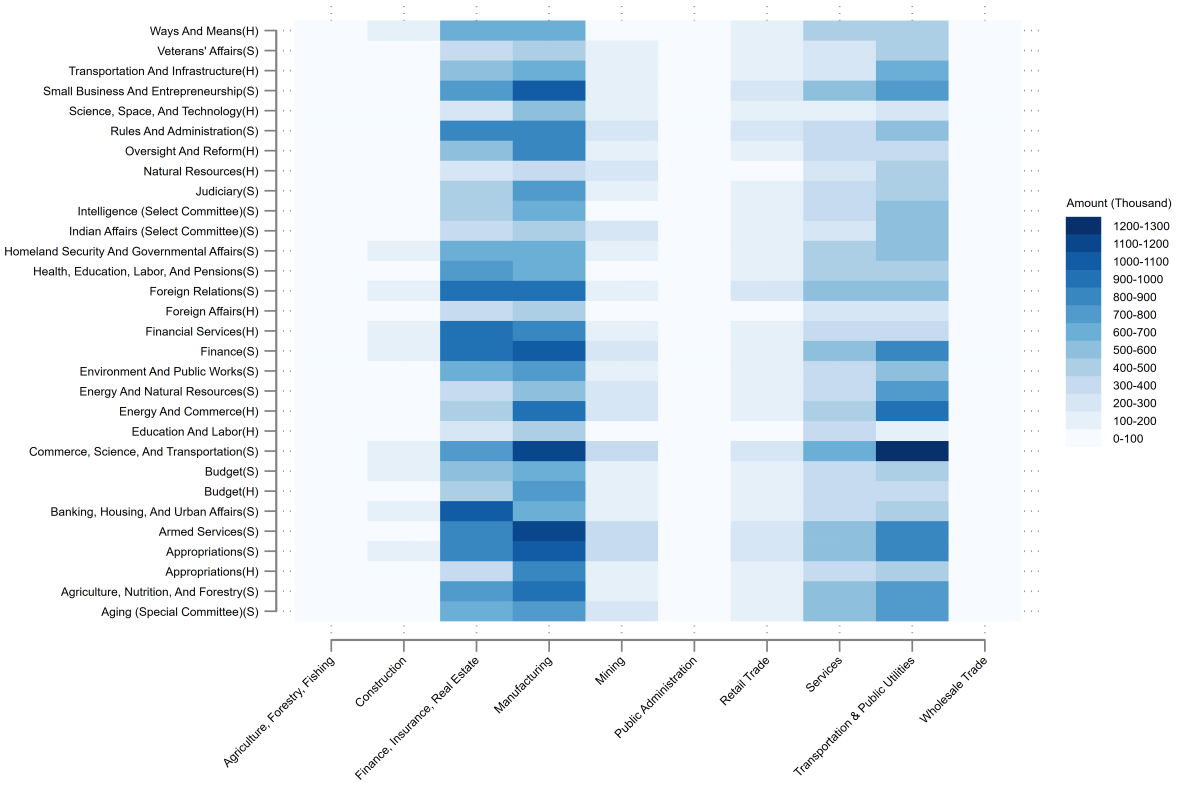
(a) CEO: Total Campaign Contributions



(b) Firm: Total Campaign Contributions



(c) CEO: Campaign Contributions by Industry



(d) Firm: Campaign Contributions by Industry

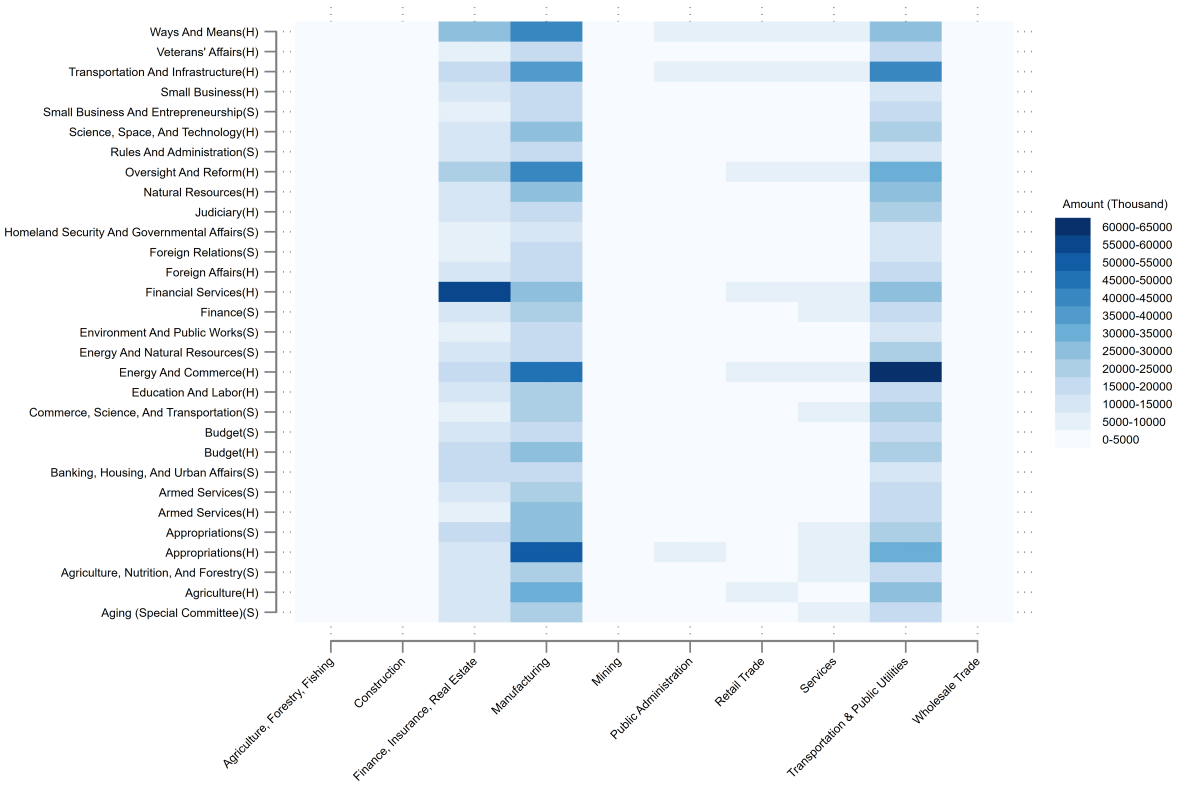
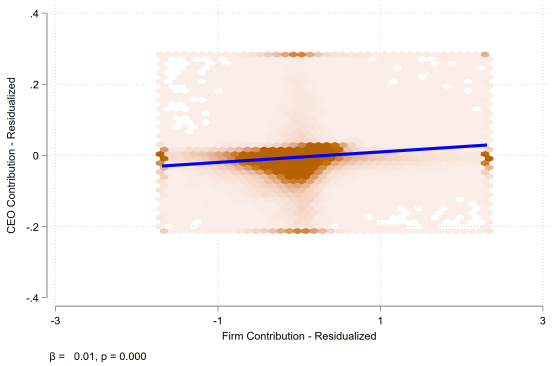


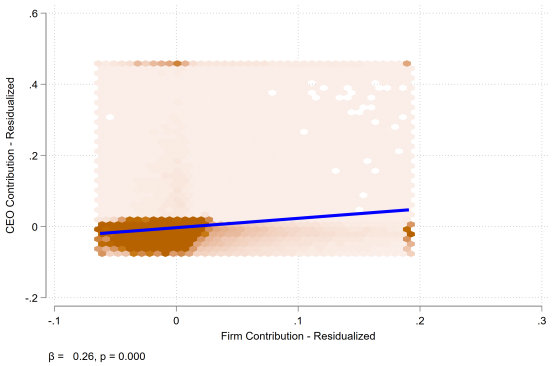
Figure 13: Firm vs. CEO Strategies on Campaign Contributions to Congressional Committees

This figure shows firm and CEO strategies on campaign contribution to politicians or committees, in scaled contributions (by CEO total compensation or firm sales) or share of contributions (within total contributions), both of which are residualized by log of sales and log of employment. In subfigure (a) and (b), we scatterplot CEO and firm strategies on campaign contributions to committees in hexagon bins with linear fit, in scaled and share of contributions, respectively. In subfigure (c) and (d), we scatterplot CEO and firm strategies on campaign contributions to politicians in hexagon bins with linear fit, in scaled and share of contributions, respectively. All monetary variables are deflated by annual CPI (2015 = 100).

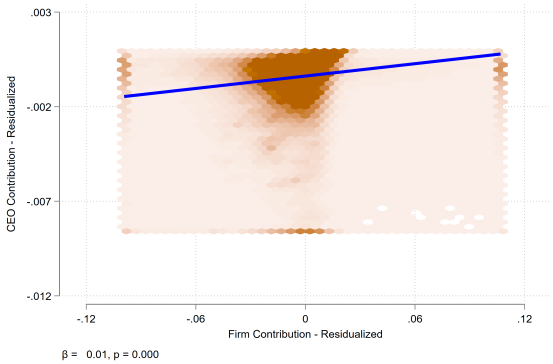
(a) Scaled Contributions to a Committee



(b) Share of Contributions to a Committee



(c) Scaled Contributions to a Politician



(d) Share of Contributions to a Politician

