Political Connections and the Allocation of Procurement Contracts

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Abstract

This paper analyzes whether political connections of publicly traded corporations in the United States affect the allocation of government procurement contracts. The paper classifies the political affiliation of S&P 500 companies using hand-collected data that detail the past political position of each of their board members. Using this classification, the study focuses on the change in control of both House and Senate following the 1994 midterm election and on the change in the Presidency following the 2000 election. An analysis of the change in the value of the procurement contracts awarded to these companies before and after 1994 and 2000 indicates that companies that are connected to the winning (losing) party are significantly more likely to experience an increase (decrease) in procurement contracts. The results remain significant after controlling for industry classifications, geographical location of the company, as well as for several other company characteristics. In total, these findings suggest that the allocation of procurement contracts is influenced in part by political connections. Thus, this study provides evidence on one direct avenue through which political connections add value to U.S. companies.

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1. Introduction

A growing body of research finds that political connections add value to the corporation. Studies such as Roberts (1990), Fisman (2001), Faccio (2006), Jayachandran (2006), and Goldman, Rocholl, and So (2009) use stock market data to demonstrate that the value of politically connected companies is affected by changes in the political landscape.[1] However, while these studies point to the value of having political connections, they remain silent about the exact source of this value. It is thus an important open question how politicians can add value to corporations, and this question is particularly relevant in light of the increased interaction between the political system and the private sector following the financial and economic crisis.

The present study attempts to shed light on this question by analyzing the allocation of government procurement contracts across the largest U.S. publicly traded companies. Government procurement contracts total more than 3.1 trillion dollars over the sample period between 1990 and 2004, and thus the allocation of these contracts is perhaps the most direct way in which political connections may influence company values.[2] The goal of this study is to understand whether companies' political connections affect the value of procurement contracts that they receive. If political connections do influence the awarding of government contracts, then companies that are connected to a political party will receive more government contracts during periods in which that political party has greater control relative to periods in which that party has less control. In contrast, during the same time, companies that are connected to the opposing party will receive fewer contracts. Thus, the empirical approach we take is to analyze changes in contracts following changes in the political landscape.

To provide a specific example, consider the case of Phillips Petroleum and Occidental Petroleum, two S&P500 companies that receive government procurement

[1] Fisman, Fisman, Galef, and Khurana (2006) is a notable exception as they do not find the effect with companies that are connected to Vice President Dick Cheney.

[2] Studies by Khwaja and Mian (2005) and Faccio, Masulis, and McConnell (2006) also study how politicians affect firm value. These studies, discussed below, look at companies in foreign countries and focus on the impact of politicians on a company's loans.

contracts during the 1990s and which are both in the Petroleum and Natural Gas industry.[3] Table 1 shows that Phillips Petroleum has several former Republicans on its board of directors and no former Democrat while Occidental Petroleum has several former Democrats on its board and no former Republican. For example, Phillips Petroleum has on its board James Edwards who was the Energy Secretary under President Reagan between 1981 and 1982. Occidental Petroleum has on its board Albert Gore who was a Tennessee Senator with the Democratic Party until 1971. For our study, Phillips Petroleum is defined as a Republican company and Occidental Petroleum as a Democratic company.[4]

What happens then to the government contracts that these companies receive once there is a change in the political landscape, as for example around the 1994 midterm election in which control of the House and Senate changes from the Democratic to the Republican Party? Table 1 shows that both companies experience big changes in their government contracts around this time. Philips Petroleum's government procurement contracts increase from a total of $120.0 million during the 1990 to 1993 period to a total of $289.3 million in the period between 1995 and 1998. In contrast, Occidental Petroleum experiences a decrease in contracts from $169.5 million during the 1990 to 1993 period to $143.7 million in the period between 1995 and 1998. Thus, while both companies operate in the same industry and have similar characteristics, the company with a Republican (Democratic) board experiences an increase (decrease) in its government contracts following the election. This anecdotal case study demonstrates what we analyze more rigorously in the remainder of the paper.

The paper looks at a sample of all companies that are in the S&P500 between the years 1990 and 2004 with a focus on the years 1994 and 2000. The choice of 1994 and 2000 as the two focal points of the analysis is based on the fact that there is a shift in political control from one party to another in both the 1994 midterm election and the

[3] The industry classification is based on the Fama-French industry classification.
[4] Note that Philips is based in Oklahoma while Occidental is based in California. Thus, our multivariate analysis will also require controlling for the geographical state in which the firm is located.

2000 presidential election.[5] Furthermore, the choice of both a midterm and a presidential election is motivated by the consideration that the way in which politicians can influence contract awards to specific companies is by its nature not a transparent one. As officials in both the legislative branch and the administrative branch have capacity to influence awards, it is important to consider political power changes in both branches. In particular, the 1994 midterm election results in a shift of control in both the House and the Senate from being majority controlled by Democrats to being majority controlled by Republicans. The Republican Party gained a majority of seats in the House for the first time since 1954. This election also changed control of the Senate from Democrats to Republicans, for the first time since 1986. The 2000 presidential election results in a shift of control of the presidency from Democratic to Republican. The two changes above imply that the influence over the allocation of procurement contracts is likely to switch from Democrats to Republicans.[6]

For each company, the study first identifies the political party to which the company is connected, as measured by the political background of the individuals on the board of directors. The study then calculates the change in the value of each company's procurement contracts surrounding the 1994 and the 2000 election. Specifically, companies in the S&P500 in 1994 and in 2000 are classified in order to define those that are connected to the Republicans and those that are connected to the Democrats. The classification of political connections is based on hand-collected data detailing the past political positions held by each of the board members of S&P500 companies in 1994 and 2000. A company is classified as being Republican (Democratic) if it has at least one director with a past political position with the Republicans (Democrats) and no other

[5] In principle, the analysis could be extended to other elections in which a power shift occurs. We face two constraints though: First, we cannot analyze the presidential change in 1992 because the board data (described in section 2.4.) are not available in the EDGAR database before 1993. Second, given the long-term nature of procurement contracts (described in section 2.1.) we can only analyze elections with power shifts that occur prior to 2004. These constraints result in the selection of the 1994 midterm election and the 2000 presidential election as the two major shifts of control to be analyzed in this paper.

[6] More generally, the situation in which companies succeed in influencing the allocation of government contracts is one example of the case in which an interest group may use non-market interactions to achieve certain goals (see Baron, 1999).

directors with any past political position with the Democrats (Republicans).[7] Given the above classification, for each company in the 1994 (2000) sample we calculate the change in the total value of its procurement contracts between 1990 and 1993 (1996 and 1999) and between 1995 and 1998 (2001 and 2004). The procurement contracts that are considered include all contracts awarded to the company itself and to any of its subsidiaries.

The main findings for the 1994 sample are that companies connected to the Republicans are more likely to experience an increase in the value of their procurement contracts following the 1994 change in the political landscape. The paper also finds that companies connected to the Democrats are more likely to experience a decrease in the value of their procurement contracts following the 1994 change. These results are both economically and statistically significant and remain significant after controlling for several company characteristics such as size, book-to-market ratio, and capital expenditure. In economic terms the dollar value of having connections to the winning party in 1994 implies an additional average increase in contracts of close to $120 million a year relative to other companies in the S&P500.

The results for the 2000 sample are qualitatively the same as for the 1994 sample. In this case, again, the findings are that companies that are connected to the Republicans are more likely to experience an increase in contracts while companies that are connected to the Democrats are more likely to experience a decrease in contracts following the 2000 presidential election. The only difference here is that the decrease in contracts of the Democratic companies is not statistically significant. The dollar value of having connections to the winning party in 2000 is slightly smaller than in 1994 implying an additional average increase in contracts of about $45 million a year relative to the remaining S&P500 companies in our sample.[8]

[7] In some of the multivariate analysis we add another group defined as "Both" to include companies with political connections to both parties.

[8] In the empirical specification, Republican companies are compared to all S&P 500 companies, and Democratic companies are compared to all S&P500 companies. A simpler analysis that compares Republican companies to Democrat companies yields even stronger and more pronounced results.

To fully exploit the panel nature of our data, we supplement the separate analysis of the events of the 1994 and 2000 elections by using a difference-in-difference (DID) methodology that combines in one regression the two events along with the two non-events of the 1996 and 1998 elections. Specifically, we compute the four-year change in contracts for each firm around the four events and then run a DID regression with a dummy variable for the event years 1994 and 2000. The additional benefit of this approach is that it allows us to control for the past change in government contracts for each firm.[9] The results using this approach are qualitatively the same as before. Here, again, we find that increases (decreases) in contracts to Republican (Democrat) companies are higher (lower) in the years in which Republicans gain control relative to the years in which they do not. In addition, we find that while Democratic companies loose contracts in the two event years, the loss is only significant around the 1994 event.

We explore next whether certain types of political connections are more valuable than others. In our analysis of the heterogeneity of the effects of connections, we focus on the sample of Republican firms and ask whether some of these firms do better than others. For example, we ask whether Republican companies that hire individuals with a more recent political appointment receive more contracts than companies that hire people whose political job ended a long time ago; the idea being that connections of recent politicians may be stronger than those of less recent ones. The findings show that the increase is indeed larger for recent politicians but the difference fails to be significant. The heterogeneity analysis does show that a company with political directors who have a longer tenure with the company generate a larger increase in contracts. This evidence suggests that cultivating relations between the company and government officials takes time. Once the political director establishes these connections after a few years, she can better exert her influence on government officials. The overall evidence is that some political connections matter more than others, but the lack of statistical significance for

[9] Note that we use overlapping time periods in order to maintain a four year window around each event. The nature of government contracts requires us to consider time periods longer than one or two years. This is because contract awards are given over several years. In addition, shorter time periods may not take into account the fact that the increase or decrease in contracts following the political power shift may occur with a different delay for different companies.

many of these connection types indicates that establishing political connections is a first-order effect, while the type of connections is of secondary importance. This result is consistent with the evidence in Goldman, Rocholl, and So (2009).

The paper addresses several interpretations of the results. First, one might ask whether companies that are defined as Republican simply have preferences that are naturally aligned with the Republican agenda and, therefore, also receive more contracts when Republicans are in power. This argument especially has merit on an industry level as Republicans tend to favor certain industries while Democrats tend to favor others (e.g. oil companies likely have a preference for the Republican agenda). Thus, Republican directors may simply serve in companies in those industries that stand to benefit from a Republican win due to the Republican political platform, regardless of whether the company itself is politically connected. The analysis is thus repeated after controlling for the increase in government contracts for firms in the same industry with industry dummies. The results remain unaffected by these controls. Furthermore, a direct test of the distribution of Democratic and Republican companies across the Fama-French 30 industries (Figure 1) suggests that the two distributions are not statistically different from each other. Thus, political board members represent connections rather than industry-level preferences.[10]

A second question, related to the above point, is whether the results are due to the fact that Republican companies are on a different trajectory than Democratic companies and are thus inherently different. Therefore, the analysis is repeated after controlling for a number of company characteristics including companies' past sales growth (as well as past growth in procurement contracts and company size). Controlling for these trends does not affect the results. A more general approach that captures any possible unobserved difference in trends between Republican and Democratic companies is the DID test which, as reported, yields similar findings. Thus, the results are due to the political connection of the board and the specific change in the political landscape.

[10] The fact that board connections do not represent industry preferences has also been established in Goldman, Rocholl, and So (2009) who show that post election stock returns of companies connected to the winning (losing) party go up (down) above those of their industry.

Third, as argued in Roberts (1990) and in Cohen, Coval, and Malloy (2010), the geographical location (e.g. state) at which the firm is located may impact its government contracts. Thus, in our analysis we control for the state in which the firm is headquartered and whether or not the state is a Republican or a Democratic state based on its elected senators and find that the results remain robust.

Fourth, the present study focuses on individual connections of the board of directors as a form of obtaining government access. Past studies in the political science literature have argued that companies use political donations as well as lobbying in much the same way (see review of the existing studies below). Hence, our analysis is repeated after controlling for political donations and lobbying. We find that companies' preferences in donating more to Republicans or Democrats do not explain changes in contract awards, while the political classification of the board of directors still remains significant as before. The same is true for lobbying expenditures. These results can be viewed as additional indication that board affiliations represent more than company preferences for a certain political party. This is because companies with agendas that correlate with a given party are also likely to donate to the political campaign of that party. Thus, controlling for political donations is one way of controlling for any unobserved company level political preferences.

Fifth, given our results that political connections are valuable in obtaining government contracts one should ask why not all firms establish these connections. Unlike political donations or lobbying activity, we argue that establishing political connections via personal ties creates advantages for companies. While all firms can easily lobby and make political donations, not all companies are able to attract former politicians to sit on their boards. This is because former politicians who are both *able and willing* to use their past connections are in limited supply. Descriptive statistics of the timing of nominations suggest that political directors tend to join boards when their supply increases (i.e. after their party loses control) as opposed to when the demand for their services increases (i.e., when their former party gains control). Thus, it would seem likely that not all companies can attract these individuals.

Sixth, while there are alternative ways to establish political connections, e.g. by hiring a former politician as a consultant for specific contract applications, nominating an individual to the board has several advantages. First of all, government contracts are just one way in which political connections can add value. Thus, hiring a former politician to the board allows a company to use her in a number of additional ways. Furthermore, hiring a former politician as a consultant leaves the door open for her to consult with other companies who may compete for these contracts. Thus, nominating her to the board is more likely to bind her to the company. Moreover, a former politician may prefer to sit on the board rather than to work as a consultant even though she may be able to extract more surpluses from consulting. This may have to do with the idea that consulting for several firms and using connections to obtain government contracts for more than one company may expose her to increased criticism.[11]

Finally, related questions are whether a firm can use other means to increase its government contracts and, if so, whether the value of the political connections measured in this paper is above and beyond other types of connections? It is our contention that the value of connections is relative to other firms in the S&P500 who may use other forms of political connections that are not controlled for. To the extent that other firms have alternative ways to gain political connections we show that board connections add value relative to other types of connections. While it is impossible to control for all other ways in which a firm can establish connections, we specifically control for lobbying expenditures and political donations and thus capture something that is correlated with other unobserved measures of connections.

In sum, the paper shows that companies that are connected to the winning party experience a statistically and economically significant increase in their procurement contracts upon changes in political control following major elections, while those connected to the losing party suffer a decrease in contracts following these changes. The results remain significant after controlling for industry, geography, and company

[11] Note that it is possible that some firms use former politicians as consultants. To the extent that these firms do not hire politicians to their boards our analysis shows that board members add value above and beyond these unobserved alternative forms of connections.

characteristics. In this paper, we highlight one crucial way in which political connections at the board level can have a direct influence on company value. However, we do not argue whether these findings are a result of corruption and resource misallocation or of companies benefiting from natural social connections.

Our paper builds on the literature that starts with Roberts (1990) and continues with Fisman (2001), Faccio (2006), Jayachandran (2006), Goldman, Rocholl, and So (2009), and Cooper, Gulen, and Ovtchinnikov (2010). These papers show that political connections are valuable. The key to these studies is that they all measure changes in stock returns as a way to proxy for the value of connections. This paper, in contrast, identifies one direct, cash-flow related avenue through which connections matter - namely, government contracts.

In this sense, the most closely related papers to our work are studies by Khwaja and Mian (2005), Faccio, Masulis, and McConnell (2006), as well as by Mian, Sufi, and Trebbi (2010). These papers all show the various direct ways in which companies may benefit from having political connections.[12] In particular, Khwaja and Mian (2005) demonstrate that companies in Pakistan with political connections receive more loans and default on these loans at a much higher rate relative to non-connected companies. Similarly, Faccio, Masulis, and McConnell (2006) look at a cross-country sample of bankrupt companies that are politically connected and show that these companies are much more likely to get bailed out. Mian, Sufi and Trebbi (2010) show that higher campaign contributions from the financial services industry lead to more favorable votes on related legislation. While our study complements the above papers, it differs from them in that it focuses on a direct measure of the value created by political connections in the U.S. which is a country with a strong legal system and relatively low levels of corruption.[13]

[12] Shleifer and Vishny (1994) analyze theoretically the opposite case in which politicians use their connections to a company in order to further their political objectives while Bertrand, Kramarz, Schoar, and Thesmar (2006) show empirically that politically connected companies can help their politicians.

[13] Karpoff, Lee, and Vendrzyk (1999) provide evidence on the treatment of companies who receive government defense procurement contracts and then commit fraud in an attempt to deceive the government. They show that the penalty incurred by these companies is much less severe if the company is in the group of the top 100 government contractors.

The existing literature in political science has mostly focused on how political donations and lobbying activity influence the government. For example, Snyder (1990) shows that political donations are a form of corporate investment, while Ansolabehere, de Figueirdo, and Snyder (2003) argue that patterns of political donations are not consistent with an investment that aims to gain a financial return. Ansolabehere, Snyder, and Ueda (2004), Aggrawal, Meschke, and Wang (2007), and Goldman, Rocholl, and So (2009) all find evidence consistent with this view.[14] In particular, Goldman, Rocholl, and So (2009) find that companies that donate more to Republicans (Democrats) are in industries that stand to benefit from a Republican (Democratic) regime. Finally, Stratmann (2005) provides a summary of the literature which relates donations to indirect measures of firm value. Looking at lobbying, Groseclose, Milyo, and Primo (2000) argue that companies' expenditures on lobbying activities far outweigh their political donations. Work by, among others, Wright (1990), Goldberg and Maggi (1999), de Figueiredo and Silverman (2006), Drope and Hansen (2004), Bombardini and Trebbi (2009), and Mian, Sufi and Trebbi (2010) all show that lobbying activity is used to influence the transfer of government resources to various industry groups.[15]

We add to this literature by focusing on company-level rather than industry-level connections. Furthermore, unlike most of the above work we explore the direct monetary reward that accrues to the company (somewhat similar to De Figueiredo and Silverman 2006 who show this in the context of universities lobbying).

The rest of the paper is organized as follow. In Section 2 we describe the data and the empirical methodology. In Section 3 we present the key findings and their interpretation. Section 4 shows robustness tests; Section 5 concludes.

[14] One notable exception are Cooper, Gulen, and Ovtchinnikov (2008) who show that the number of individuals the company donates to can impact long-term stock returns.

[15] See also the theoretical work of Grossman and Helpman (1994) that models the optimal lobbying behavior of interest groups.

2. Data description

The analyses in this paper utilize elections in the period between 1990 and 2004 as well as two types of data. In particular, we focus on the 1994 midterm election and the 2000 presidential election. The first data set comprises information on all U.S. government procurement contracts in the sample period between 1990 and 2004. The second data set consists of original data containing information regarding the political affiliation of each board member of all companies in the S&P500 at the end of 1994 and at the end of 2000.[16] Both data sets are described in more detail below. In addition, we hand-collect information regarding the subsidiaries of all S&P500 companies in 1994 and 2000 and obtain CRSP and COMPUSTAT data as well as Fama-French and SIC industry classification data. Finally, the SDC Platinum database by Thompson Financial is used for checking merger and acquisition activities or divestitures by S&P500 companies in the sample period.

2.1. Procurement process and data

The process of awarding government contracts begins when an agency of the federal government identifies a need for a purchase of a good or service. Each agency has a contracting officer who posts a solicitation on the Federal Business Opportunities website, which is called a Request For Proposal (RFP). Companies then submit their offers for review by agency personnel who evaluate the alternative offers and make the final decision.[17]

While in theory government contracts are awarded based on the merits of each proposal, in practice people in-the-know argue that personal connections and insider information play an important role in affecting a firm's likelihood of winning a bid. For example, the executive director of Project on Government Oversight (a Washington based non-profit organization) argued that "…relationships have become infinitely more

[16] In some of the analyses, we also use data on the political affiliations of board members in 1996 and 1998.
[17] For more details on this process see Halchin (2006).

important than a contractor being able to show that they are the best person for the job…" (see Palmer, 2005).

In practice, connected companies have a leg-up on the competition. This can happen in several ways: First, companies that are able to have one-on-one meetings with the contracting agency before the RFP comes out are able to get more details on what the government agency is looking for and hence are better able to design a proposals that will fit these needs. Second, companies that have access to the contracting agency can also affect the proposal itself and tailor it to be more suitable for their company. The government actually encourages interactions between companies and the contracting agency as a way to solicit information to help design a proposal that is feasible. Thus, a firm that is able to get one-on-one time with the government agency has a higher chance of winning the bid. Third, connections may also help in meeting with lawmakers and attempting to increase funding for goods and services that the company is already providing. A manager of Sprint's government system division was quoted as saying that talking to congress "…can be helpful. GSA [General Service Administration] certainly listens to the Hill." (see Palmer, 2005).

Finally, as one contracting consultant points out in her explanation of how to win contract bids, "successful vendors know that… government buyers do business with people they know…How do you get known and meet people? Use internal private networks (like a corporate board)."[18]

The above discussion suggests that if former politicians who sit on the board of a company are able to help their company meet and advise these government officials and thus help shape the RFP, then they can increase the chances that their company would win the contract.

Data on procurement contracts on the company level are available from the Federal Procurement Data System – Next Generation (FPDS-NG).[19] The FPDS-NG,

[18] See article by Judy Bradt of Summit Insight at http://www.summitinsight.com/index.asp

[19] A "procurement contract" is any of a number of documented legal interactions between the government and a contractor including a "contract award" (the basic terms and conditions of the contract including the goods and services to be provided), a "modification" (which may be an exercise of an option to modify the contract), or an "order" (for example an order against a government-wide contract).

which is operated and maintained by Global Computer Enterprises, replaced the Federal Procurement Data Center (FPDC).[20] The FPDS-NG contains all procurement contracts that are awarded by the U.S. Government and that exceed an individual transaction value of $2,500.[21] The largest exceptions to this reporting requirement are the U.S. Postal Service and several legislative and judicial branch organizations.[22] FPDS-NG reports procurement contracts for each company that is a separate legal entity, independent of the ultimate owner of that company. This means that procurement contracts for subsidiaries of companies are not aggregated on the parent company level, which aggravates the use of these data for the purpose of academic research. The exact matching procedure used in this paper is described in detail below.

Table 2 shows the aggregate value and number of procurement contracts over the sample period between 1990 and 2004. The yearly value increases substantially over the sample period from $158 billion in 1990 to $351 billion in 2004. Similarly, the number of procurement contracts increases from 371,514 in 1990 to 2,843,212 in 2004. In particular, the value increases greatly after 2001 as a result of the increased spending following the events of September 11, 2001.

The total number of procurement contracts in the sample period exceeds 11.5 million and the aggregate value is more than $3.1 trillion. Table 2 also shows which departments award the major share of these procurement contracts. The defense department is by far the largest contractor with an average share of 65% of the awarded value, followed by the Energy Department with an average share of 10% and NASA with an average share of 5%. Note that defense-related spending is broadly defined and can include contracts with many non-defense companies such as IBM and Compaq. Other departments comprise the remaining 20% share. The figures in Table 2 suggest that the

[20] FPDC, implemented under Public Law 93-400, provides data for Congress, the Executive branch, the private sector, and the public. FPDC was a part of the U.S. General Services Administration and operated and maintained the original Federal Procurement Data System. FPDS-NG is the central repository of statistical information on federal contracting.

[21] The reporting threshold for individual transactions was $25,000 before 2004.

[22] US Census Bureau reports total procurement amount annually in the Consolidated Federal Funds Report (CFFR) but no detailed data on the company level are available. The total procurement amount in FPDS-NG covers more than 85% of the total amount in CFFR over the sample period.

share of the Defense Department is relatively stable over time, with a maximum of 68.9% in 2004 and a minimum of 58.8% in 1993; this is the year when NASA is awarded its highest relative share in any of the sample years.

2.2. Subsidiary data

Many companies receive a substantial share of their procurement contracts through their subsidiaries. As an example, Halliburton receives aggregate procurement contracts of $7 million in 1998, while its subsidiary KBR receives procurement contracts of $43 million in the same year. For this reason, we collect information on all subsidiaries of S&P500 companies from Exhibit 21 (Subsidiaries of the Registrant) of their annual 10-K reports. These are available in the EDGAR database of the SEC. S&P 500 companies and their subsidiaries are then matched with the list of companies in the FPDS-NG database.[23] The procurement contracts of S&P500 companies and their subsidiaries are finally summed up to obtain the aggregate value of procurement contracts for each company in the S&P500 and for each year over the sample period.

2.3. Resulting sample

This procedure results in a total sample of 405 S&P500 companies that receive procurement contracts in the period between 1990 and 1998 and a total sample of 417 companies that receive procurement contracts in the period between 1996 and 2004. For the first event period, a number of companies are involved in substantial merger and acquisition activities or divestitures over the sample period. To ensure consistency and comparability of the procurement contracts of these companies over time, their procurement contracts are adjusted in the following way. First, 22 companies in the S&P500 are acquired by other companies in the S&P500 during the sample period. In this case, the procurement contracts of the target company are added to those of the acquiring

[23] The procurement data used in this paper are based on the September 2006 status of FPDS-NG.

company before the merger and are thus comparable to the procurement contracts of the combined entity after the merger.[24] Second, 45 companies in the S&P500 are acquired by non-S&P500 companies and are thus excluded from the sample. Third, over the sample period 8 S&P500 companies sell units or divisions in which the transaction value exceeds one billion dollars. To ensure the comparability of the awarded government contracts, these companies are excluded as well. The final sample for the first event period thus consists of 330 companies.

For the second event period, the same criteria are applied. Out of the 407 sample companies, 12 companies merge with other S&P500 companies, and thus the procurement contracts of these target companies are added to those of the acquiring companies. An additional 15 companies are further excluded; 8 companies merge with non-S&P500 companies, and 7 companies sell units or divisions with a transaction value of more than one billion dollars. After excluding these companies, the final sample results in a total of 380 companies.

2.4. Board data

Board connections are derived by considering the composition of the board of directors at the end of 1994 and 2000 of all S&P500 companies with procurement contracts and analyzing the background of each board member.[25] Section 14 of the Securities and Exchange Commission (SEC) Act requires companies to file a definite proxy statement (submission type Def 14a), containing information about their board members. These filings, which are hand-collected from the EDGAR database of the SEC, contain a brief description of each board member's career background. Based on these data, it is possible to identify whether board members are connected to the Republicans, to the Democrats, or to neither. A board member is defined as being politically connected if he or she at any time prior to 1994 and 2000, respectively, held a position such as

[24] For these companies, the accounting variables such as sales, assets, EBITD, capital expenditure, and book-to-market ratio are adjusted in the same way.
[25] When using the difference in difference method we also collect board data for 1996 and 1998.

Senator, Member of the House of Representatives, Member of the Administration, or was a Director of an organization such as the CIA, SEC, or FDA. A full list of these positions is provided in Table 3.

Panel a) of Table 3 shows the descriptive statistics for the 330 sample companies used in the analysis of the 1994 midterm election. According to the definition used in this paper, 81 of the 330 companies are connected to the Republican Party as they have at least one board member with a former political position with the Republicans, but no board member with a former position with the Democratic Party. Similarly, 39 companies are defined as being connected to the Democratic Party as they have at least one board member connected to the Democrats, but no board member connected to the Republicans. The remaining 210 companies are connected either to both parties (30 companies) or to neither (180 companies). Note that the expectation is that companies connected to both parties should not exhibit any change in contracts. This is true as long as the strength of their connection to one party is the same as the strength of their connection to the other. In the subsequent analysis, we discuss a number of alternative definitions of political connections using our board data to separate out companies that are not connected from companies that are connected to both parties. The descriptive statistics in Panel a) show that, on average, companies that are connected to the Republicans tend to be larger than those that are connected to the Democrats.

Panel b) of Table 3 presents the descriptive statistics for the 380 sample companies used in the analysis of the 2000 presidential election. While 55 companies are connected only to the Republicans, 39 companies are connected only to the Democrats. The remaining 286 sample companies are either connected to both parties (23 companies) or to neither (263 companies). Panel b) also confirms the evidence from Panel a) that companies that are connected to the Republicans tend to be larger than companies that are connected to the Democrats.

Figure 1 shows that the industry distribution of Republican and Democratic firms is relatively evenly distributed in both years and this suggests that there is no major concern about Republican or Democratic companies representing industry preferences

that are correlated with the agenda of one of the two parties. A chi-square test finds that the two distributions are not statistically different from each other (p-values of 0.9 for 1994 and 0.6 for 2000). Finally, while not reported in the table there are only 5 companies that switch from being connected to one party in 1994 to another party in 2000. Thus, political connections seem to be long-term connections.

Table 4 provides descriptive statistics of the timing of nominations. Panel a) of Table 4 shows that former politicians are hired long before either of the events studied. On average, these directors are on the board more than five years before the elections. Panel b) of Table 4 describes the timing of nominations relative to the presidential and legislative cycles. In particular, the table shows several key points. First, most of the nominations occur in a year following a presidential or a midterm election. More than 60% of the nominations (342 out of 550) occur in the year following a presidential or midterm election. Second, while the number of nominations of Republican (Democratic) board members is nearly the same under Republican or Democratic Presidents, Republicans are much more likely to be nominated in times of Democratic control of House and Senate. For example, under Republican Senate majority 83 out of 147 nominations are of Republican board members, representing 56% of the total. However, under Democratic Senate majority 303 out of 403 nominations are of Republican board members, representing 75% of the total. Thus, a higher percent of Republicans are nominated during a period of Democratic majority.

The numbers above suggest that nominations are driven more by supply than by demand. Demand-driven nominations would imply more Republican (Democratic) nominations under Republican (Democratic) regimes, while supply-driven nominations would potentially imply the opposite because the supply of former Republicans (Democrats) is higher when Democrats (Republicans) win the majority. Thus, it would seem that politicians do not get hired when they are most valuable (right at the beginning of their party's rule) but rather when they become available. This is consistent with a situation in which there is a limited supply of politicians who companies view as both *able* and *willing* to use their connections for the benefit of a specific company.

3. Empirical Results

The purpose of the empirical analysis is to determine whether the political connections of the board influence the value of procurement contracts that companies receive a) before and after the change in majority in House and Senate following the 1994 midterm election and b) before and after the change in Presidency following the 2000 presidential election. The analysis proceeds in two steps. First, we show univariate results. Second, we present multivariate analyses that control for other variables.

3.1. Univariate Results

The two variables of interest are the change in the value of procurement contracts a) between the four-year period before and the four-year period after the 1994 midterm election and b) between the four-year period before and the four-year period after the 2000 presidential election. To minimize the impact of outliers in a specific year and to take into account the long-term nature of public procurement contracts, the procurement contracts for each sample company are aggregated over the two four-year periods and then compared to each other. The first variable of interest, the change in the value of the sum of procurement contracts between the two periods around the 1994 midterm election, is defined as

$$\Delta C_i = \left(\sum_{t=1995}^{1998} C_{i,t} \right) - \left(\sum_{t=1990}^{1993} C_{i,t} \right)$$

where $C_{i,t}$ represents the dollar value of procurement contracts for company *i* in year *t*.[26]

Equivalently, the second variable of interest for the two periods around the 2000 presidential election is defined as

$$\Delta C_i = \left(\sum_{t=2001}^{2004} C_{i,t} \right) - \left(\sum_{t=1996}^{1999} C_{i,t} \right)$$

[26] Note that the election year is not included in the calculation of the dependent variable to eliminate any potential abnormal behavior in an election year. In a robustness test, we include the election years, and the results do not materially change.

As mentioned earlier, this variable turns out to have an uneven distribution across the sample companies with some extreme negative and positive values. As an example, the highest negative difference for the first event period is found for Perkin Elmer, which loses $6.6 billion in government procurement contracts; the highest positive difference is found for Lockheed Martin, which gains $29.2 billion in these contracts. More formally, we test whether the two variables of interest are normally distributed using the Shapiro-Wilk and the Shapiro-Francia test. The tests reject this null hypothesis at the 1% level for either of the sample periods. The variables exhibit significant levels of skewness and kurtosis which need to be taken into account in the design of the empirical specification.

Table 5 reports the average value of procurement contracts for the sample companies for the two event periods, sorted by their political connections.[27] The figures suggest that the mean value of procurement contracts to Republican companies is substantially higher than that to Democratic companies. The average value of procurement contracts for the two groups over the sample period amounts to $3,654 million and $816 million, respectively.

The average value of procurement contracts in the pre-election period between 1990 and 1993 is about $569 million and it increases to $709 million in the post-election period between 1995 and 1998. However, there is a remarkable difference between Republican and Democratic companies. While the average Republican company experiences an increase of $499 million in procurement contracts, the average Democratic company suffers a decrease of $67 million.

Panel b) of Table 5 presents the statistics for the second event period between 1996 and 2004. The numbers exhibit similar patterns as in Panel a). The highest value of procurement contracts is awarded again to Republican companies. They receive on average $3,763 million over the sample period. While companies with Republican boards receive on average $1,468 million worth of procurement contracts between 1996 and 1999, this number increases by $506 million to $1,974 million between 2001 and 2004.

[27] S&P500 companies receive procurement contracts totaling more than $475 billion between 1990 and 1998. This represents a substantial share of the $1,552 billion of total procurement contracts in FPDS-NG over that period.

The dollar increase in procurement contracts is much higher than for Democratic companies, who experience an increase of only $80 million from $359 million to $439 million. Overall, these figures provide the first piece of evidence suggesting that political connections of companies may influence how procurement contracts are allocated.

Figure 2 shows how contract awards vary before and after the two elections. From this figure one can see that the increase in contracts to Republican companies and the decrease in contracts to Democrat companies are manifested over several years following the elections. In particular, it is interesting to note the apparent heterogeneity of this change in contracts. While the reduction in contracts to Democrats seems to happen in the first years after the election, the increase in contracts to Republicans seems to happen only after a few years. For this reason we conduct our analysis by looking at four year rather than one or two year windows.

3.2. Empirical methodology

For our empirical analysis, we employ two main specifications, which we describe in detail in this section. In the first specification, we analyze in two separate analyses the development of procurement contracts around the 1994 and 2000 elections, while in the second specification, we combine in one analysis both the 1994 and 2000 elections as well as the 1996 and 1998 elections, using a difference-in-difference methodology.[28]

As discussed in the previous section the change in procurement contracts before and after the 1994 (2000) midterm election (presidential election) has a non-normal distribution with some extreme negative and positive outliers. In addition, as indicated by Figure 2 the change in procurement contracts materializes over a multi-year period after a change in power following the elections. For these two reasons we conduct the

[28] We restrict our analysis to these years because: 1) board data prior to 1994 is not available, and 2) at the time of our initial data collection process procurement contract data was only available up to 2004.

multivariate analysis using as the dependent variable the log of the change in the sum of procurement contracts between the four-year periods before and after any of the elections.

More specifically, we have for the 1994 midterm election:

$$\log \Delta C_i = \begin{cases} \log\left(\sum_{t=1995}^{1998} C_{i,t} - \sum_{t=1990}^{1993} C_{i,t}\right) & \text{if} \quad \sum_{t=1995}^{1998} C_{i,t} - \sum_{t=1990}^{1993} C_{i,t} > 1 \\ 0 & \text{if} \quad 1 > \sum_{t=1995}^{1998} C_{i,t} - \sum_{t=1990}^{1993} C_{i,t} > -1 \\ -\log\left[-\left(\sum_{t=1995}^{1998} C_{i,t} - \sum_{t=1990}^{1993} C_{i,t}\right)\right] & \text{if} \quad \sum_{t=1995}^{1998} C_{i,t} - \sum_{t=1990}^{1993} C_{i,t} < -1 \end{cases}$$

The equivalent variable for the change in procurement contracts around the 2000 presidential election is defined as:

$$\log \Delta C_i = \begin{cases} \log\left(\sum_{t=2001}^{2004} C_{i,t} - \sum_{t=1996}^{1999} C_{i,t}\right) & \text{if} \quad \sum_{t=2001}^{2004} C_{i,t} - \sum_{t=1996}^{1999} C_{i,t} > 1 \\ 0 & \text{if} \quad 1 > \sum_{t=2001}^{2004} C_{i,t} - \sum_{t=1996}^{1999} C_{i,t} > -1 \\ -\log\left[-\left(\sum_{t=2001}^{2004} C_{i,t} - \sum_{t=1996}^{1999} C_{i,t}\right)\right] & \text{if} \quad \sum_{t=2001}^{2004} C_{i,t} - \sum_{t=1996}^{1999} C_{i,t} < -1 \end{cases}$$

For the second main specification, we also define accordingly the same variable around the 1996 presidential election and the 1998 midterm election and use these two elections as a natural control group.

The choice of the dependent variable above addresses the uneven distribution of the raw variable, while it maintains its cardinality. Note also that this functional transformation is well behaved in that it is a continuous function (in practice there are no observations for which the change in the value of contracts is between 1 and -1).

The above dependent variable measures the log of the difference in contracts rather than the difference of the log. This is because we wish to focus on the dollar value

of the change in contracts. In contrast, using the change in log values would focus on the percentage change in contracts which would be less economically meaningful for our question. Namely, it is our contention that connections are economically important in that they generate additional dollars from government contracts regardless of the size of the company's existing contracts. For example, a company that first has government contracts worth $1 million and then obtains contracts worth $2 million will - according to the percentage measure - be viewed as a company with a larger increase than a company that starts out with $100 million in contracts and then receives $150 million. But, we believe that the latter company should be viewed as benefiting more from connections.

The independent variables of interest indicate whether or not a company is politically connected through its board members. We employ three types of variables: First, we use two dummy variables: dRep takes a value of one if a company has at least one board member connected to the Republicans, but no board member connected to the Democrats and a value of zero otherwise; dDem takes a value of one if a company has at least one board member connected to the Democrats, but no board member connected to the Republicans and a value of zero otherwise.

Second, we compute the ratio of the number of Republican board members to the number of all connected board members as well as the ratio of Democratic board members to the number of all connected board members and use these two ratios instead of the two dummy variables. If there are only Republican or only Democratic board members in a given company, then these two measures are identical to the two original dummy variables. These measures are different from the dummy variables though when there are both Republican and Democratic board members in a given company as they become positive fractions that are less than one. Third, we use the number of Republican and the number of Democratic board members as two final additional explanatory variables.

In addition, the paper uses a number of control variables. The first variable is lnCap, which captures the log of the size of the company.[29] The second variable, BM, represents the company's book-to-market ratio. The Herfindahl index (HHI) is included in order to take into account the intensity of competition in the industry in which the

[29] In the robustness section, we discuss controls that capture more flexible functional forms of size.

company operates. This index is calculated based on the sales of all competitors with the same 2-digit SIC code. In order to control for the investment level and the cost structure of the company, two accounting variables are included as further independent variables. The first accounting variable CAPEX/Sales is the ratio of capital expenditure to sales, which controls for the possibility that a company that has recently invested in its facilities is expected to subsequently increase its production. The second accounting variable CostGood/Sales is the ratio of cost of goods sold to sales, which is important to consider as cost-efficient producers are more likely to be awarded with procurement contracts.

To control for the possibility that Republican and Democratic companies are simply on different growth trajectories, are in industries that benefit from one of the two Parties, or are in States which benefit from one of the two Parties, we control for the growth in sales in the two-year period before the election (SalesGrowth), the industry of the company, and whether or not the State at which the company is headquartered is Republican, respectively.

More formally, we use variations of the following empirical specification, for which results are reported in Table 6 and Table 7:

$$\log \Delta C_i = c_0 + \beta_1(\ln Cap)_i + \beta_2(BM)_i + \beta_3(HHI)_i + \beta_4(CAPEX / Sales)_i + \\ + \beta_5(CostGood / Sales)_i + \beta_6(dRep)_i + \beta_7(dDem)_i + \varepsilon_i + \alpha_i \quad (1)$$

where $\log \Delta C_i$ is the log of the change in the sum of procurement contracts between the two periods before and after the 1994 (2000) midterm (presidential) election and α_i represents an industry dummy and a dummy for whether the company is headquartered in a Republican state.

For the second empirical specification of the difference-in-difference approach, for which the results are reported in Table 8, we have variations of the following:

$$\log \Delta C_{i,t} = c_0 + \beta_1(Controls)_{i,t} + \beta_2(dRep_{i,t} * dPow_t) + \beta_3(dDem_{i,t} * dPow_t) + \\ + \alpha_i + \alpha_t + \varepsilon_i \quad (2)$$

where α_i and α_t represent company and year fixed effects.

Finally we run a multivariate test to explore the heterogeneity of the effect of the increase in contracts to Republican companies. We analyze which characteristics of politically connected Republican companies can explain the cross section of the increase in contracts following the two elections. Namely, we ask why some Republican companies benefit more than others.

3.3. Multivariate results

The multivariate analysis comprises three parts; the separate cross-sectional analysis of the 1994 and 2000 elections, the difference-in-difference analysis of the 1994 and 2000 as well as 1996 and 1998 elections combined, and the cross-sectional analyses of the heterogeneity of Republican companies.

3.3.1. Cross-sectional analysis of 1994 and 2000 events

The results for the first main empirical specifications, as outlined in equation (1), are reported in Table 6 and Table 7. Table 6 reports the results of the cross-sectional analysis for the 1994 midterm election. Model 1 and Model 2 include the Republican and Democratic dummy variable, respectively, as well as the control variables. The coefficient for the Republican dummy variable is positive and significant at the 5% level, while the coefficient for the Democratic dummy variable is negative and significant at the 1% level. This suggests that Republican companies are more likely to experience an increase in government contracts in the post-election period, while Democratic companies are more likely to experience a decrease in government contracts in this period. Model 3 includes both political dummy variables at the same time showing that they remain significant.[30]

[30] Note that the two variables are negatively correlated with a correlation coefficient of -0.2046 (p-value = 0.0002).

Model 4 also includes the growth in sales as an additional control variable. The coefficient for this control variable is significant at the 10% level and thus suggests that companies that are on a growth trajectory before the election increase their government procurement awards after the election. The more important result for the purpose of this study is that the Republican and Democratic dummy variables remain significant at the 5% level even after controlling for the pre-election sales growth. Similarly, in Model 5 we test whether the value of procurement contracts before the election has an impact on the change in procurement contracts after the election, and we find that companies with a high starting value lose significantly more than companies with a low starting value. However, the results are not driven by the size of the initial contract.

The paper has so far focused on board members as the source for political connections. However, there are also several other ways in which a company may become politically connected, e.g. through indirect ways such as lobbyists and consultants, or through other direct ways such as donations. As mentioned in the introduction, existing studies provide at best mixed evidence on whether donations help companies in becoming politically connected. Furthermore, even if they do, Jayachandran (2006) raises the question whether donations have a causal effect on firm value or simply represent industry preferences. Consistent with the latter argument, Goldman, Rocholl, and So (2009) show that donations lose their explanatory power once the industry effect is taken into account. To test more formally for the impact of donations, we include in Model 6 controls for the political donations made by each company through contributions from company-related individuals and political action committees (PACs). The underlying data are from the Center for Responsive Politics (CRP), a non-partisan research organization that collects and aggregates information on these types of corporate donations to the Republican and Democratic Party. Specifically, we use these data to create two dummy variables dDonation_Rep and dDonation_Dem for the 1994 election. The first (second) variable takes a value of 1 if the company donates more to Republicans (Democrats) than to Democrats (Republicans) and zero otherwise. Model 6 shows that donations do not have any impact on contract awards, while the significance for the

coefficients for board affiliations remains unchanged.[31] Thus, the inclusion of further controls and, in particular, the donation variables does not change the main statement that Republican companies are more likely to see an increase in the value of their procurement contracts after the 1994 midterm election, while Democratic companies are more likely to lose contracts.

Finally, in Model 7 and Model 8, we control for the donation variables as well as two variations for the independent variables of interest. In Model 7, instead of using the dummy variables for political connections, we incorporate the ratios of the number of Republican and Democratic board members to the number of all connected board members. The results show that the coefficients for both variables go in the same direction as before. Companies with a higher percentage of Republican board members enjoy an increase in procurement contracts, while companies with a higher percentage of Democratic board members face a decrease in contracts. The coefficients are significant respectively at the 10% and 1% level and are thus in line with the results before.

In Model 8, we use the second variation of the key explanatory variables by incorporating the number of Republican and the number of Democratic board members. The results are again similar to those before and show that companies with Republican board connections see a significant increase, while those with Democratic board connections see a significant decrease in procurement contracts after the election. The overall results thus hold for a variety of different specifications for the key explanatory variables and stress the robustness of the observed patterns.

For the control variables, the coefficient for the Herfindahl index is positive and significant throughout the different models. This suggests that the lower is the level of competition in the industry in which a company operates the more likely the company is to gain more government contracts. Thus, it is easier for a company to gain government contracts in a less competitive industry.

In addition to controlling for the variables described above, it is also important to rule out the possibility that Republican and Democratic companies happen to be in certain

[31] As a further robustness test, we create a continuous donation variable, which records for each company the percentage amount donated to Republicans out of the total political donations made by that company. The results, available upon request, remain the same.

industries or to be located in certain states that benefit from an increase or suffer from a decrease in government spending. In this case, the observed pattern would not be due to a company's political affiliation, but simply due to the industry in which it operates or the state in which it is headquartered.

To address both the industry and geography components more formally, each model in Table 6 contains both an industry and a state dummy variable. The industry dummy variable is unique for each SIC 2 digit industry; while the state dummy variable takes a value of one if the company is headquartered in a state with a Republican senator and a value of zero otherwise. The observed results that the key political explanatory variables remain significant even after controlling for industry and geography thus suggest that the patterns are indeed driven by political connections.

Table 7 reports the results for the estimation of the second event period, which captures the time before and after the 2000 presidential election. The explanatory variables are the same variables as in Table 6 including again controls for industry and geography effects. In addition, we now add controls for company-level lobbying expenses which are available for the 2000 sample from the Center for Responsive Politics. Similar to donations, lobbying expenditures represent another potential avenue through which companies can generate political connections. We use two variations to control for lobbying by including either the ratio of lobbying expenses over sales or the absolute dollar amount of lobbying.

The overall results in Table 7 suggest that Republican companies significantly increase their government procurement contracts after the 2000 presidential election. The coefficient for the Republican dummy variable is significant for each specification. At the same time, the coefficient for the Democratic companies fails to be statistically significant.

The coefficients for the lobbying variables in Models 7 to 10 fail to be significant suggesting that lobbying does not affect the change in procurement contracts before and after the 2000 election. More importantly, the coefficients for the board connection variables are robust to the inclusion of these additional political connection variables.

Taken together the results are consistent with the results for the 1994 midterm election and suggest that the observed effect is not driven by specific industries, specific states, or a specific definition of the political connection of the board. At the same time the results indicate that board connections are significant in explaining the allocation of procurement contracts while donations and lobbying expenses are not.

The comparison of the two event periods shows that the coefficients for Republican companies tend to be similar in the 1994 and 2000 event while the coefficients for Democratic companies tend to be less negative in the 2000 event, implying a smaller decrease in contracts to Democratic companies following 2000. These results are consistent with the fact that the change in power from Democrats to the Republicans following 1994 was more pronounced relative to the change in the political landscape following the 2000 elections. In 2000, Republicans took over the presidency and kept their control of House and Senate. However, Senator Jeffords' resignation from the Republican Party in May 2001 resulted in a shift of the Senate majority to the Democrats for one and a half years until the 2002 midterm election. Thus, there was a partially and temporary offsetting effect to the shift in presidential power in the post-election period.

Overall, the empirical results suggest that companies that are connected to the Republican Party benefit from the Republican win in the 1994 midterm election as well as the Republican win in the 2000 presidential election. They receive more government contracts following the two respective elections. By contrast, companies connected to the Democratic Party lose government contracts after the elections. These results are robust to a number of control factors that capture company-, industry- and geography-specific characteristics and thus seem to be driven by political affiliations.

3.3.2. Difference-in-difference analysis

The results for the second main empirical specification as outlined in equation (2) are reported in Table 8. Here we make explicit use of the panel nature of our data and follow companies through time and across different electoral cycles. The dependent and

explanatory variables are the same ones as in Table 6 and Table 7, and they are calculated around the 1994, 1996, 1998, and 2000 elections. As a company may thus appear more than once, we control for firm fixed effects throughout the different models. We also control for various time, industry, and geography fixed effects, along with their interactions. The key variables of interest are the interaction variables dRep*dPow, dDem*dPow, and dBoth*dPow. The variable dPow takes the value of one for the years 1994 and 2000 and the value of zero for the years 1996 and 1998 in which there was no shift in power.

Model 1 tests the explanatory power of the three key variables of interest, using the main control variables as well as year and firm fixed effects. The results show that dRep*dPow is positive and highly significant at the 1% level. For dDem*dPow, the coefficient is negative and fails to be significant, while the coefficient for dBoth*dPow is positive and fails to be significant. The results are thus in line with the results in Table 6 and Table 7 in which Republican companies significantly gain procurement contracts in both the 1994 and 2000 elections, while Democratic companies significantly lose contracts in the 1994 election and tend to lose contracts in the 2000 election. Here, Republican companies gain procurement contracts when the Republicans win elections, while Democratic companies simultaneously tend to lose procurement contracts.

Model 2 controls in addition for the amount of procurement contracts in the four-year period before each election, and the results are very similar to those in Model 1. Model 3 includes industry fixed effects, using the Fama-French 30-industry classification. The results are again very similar to those before, with Republican companies seeing a significant increase in procurement contracts and Democratic companies seeing a significant decrease. Model 4 and Model 5 employ two further variations to control for industry effects by including dummy variables for each SIC 1 digit and each SIC 2 digit industry, respectively. The coefficients for the variables of interest do not change much.

In Model 6 we include dummy variables for the geographical state in which the company is headquartered. The results, again, are unaffected by this added control. To

further explore this issue Model 7 controls for the possibility that certain states are particularly important in certain years according to the electoral cycle. To test for this possibility the model includes interaction fixed effects of states and time. To further control for industries effects that may vary over the election cycle we control in Model 8, 9, and 10 for an interaction term of industry and time fixed effects.

Finally, we can use the difference-in-difference methodology to further separate the impact of the 1994 event from that of the 2000 event by inter-acting the board connections dummy with a 1994 time dummy and a 2000 time dummy, separately. In Model 9 we include the interaction effects of political connections to the Republican and Democratic parties and the 1994 and 2000 cycles, while in Model 10 we also include the respective interaction effects of companies with connections to both parties. The results are very similar to those reported in Table 6 and 7 and also help explain the previous results in Table 8.

The results indicate that the Republican company dummy is significant both for the 1994 and 2000 events and thus in line with the previous results. For the Democratic companies we find that the interaction variable for 1994 is negative and significant, while for 2000 it is negative but fails to be significant, again, consistent with the results in Table 6 and Table 7. The results for companies with connections to both parties are negative and insignificant for 1994, while they are positive and significant for 2000. This suggests that relations to both parties help in particular after the 2000 election, perhaps due to the overall increase in military spending after 2001 and the heavy representation of companies with these relations in this sector.

To sum up, the results of the difference in difference approach confirm the earlier event study findings reported in Table 6 and Table 7.

3.3.3. Heterogeneity of effects

One important open question is whether or not some political connections matter more than others. To explore this issue we next focus on companies with connections to the Republican Party and analyze whether some forms of connections lead to a larger

increase in contracts relative to other forms of connections. The results for the heterogeneity of these effects are reported in Table 9.

In Model 1, we test whether the specific nature of a political connection makes a difference. We follow the notion of relatedness in Goldman, Rocholl, and So (2009) and sort former politicians into those whose political experience is related to the industry of the company for which they work and those for whom this criterion does not apply. For example, if a former senator had previous political experience in finance (by say sitting on a respective committee) and is now on the board of a financial company then we define this connection as related. The findings here are that related connections appear to provide a larger increase in contracts relative to non-related connections but the difference fails to be statistically significant.

In Model 2, we analyze specifically those companies in which the Republican board member had a political career in the defense sector; this includes all the former Republican politicians who worked for the department of defense. Here, again, the results show that connections to the defense department provide a larger but statistically insignificant increase.

In Model 3, we analyze companies in which the Republican board member was a member of the government, which is particularly relevant for the 2000 presidential election. Likewise, in Model 4, the variable of interest focuses on companies in which the Republican board member was a congressman or senator. This is particularly important for the 1994 midterm election. The results show that none of these variables proves to be significant.

In Model 5, we test whether the number of years a board member has served on the board matters. Here we find that longer serving political directors do obtain larger increases in contracts which suggest that it takes time for the politically connected director to interact with government officials before she is able to affect contract awards. In Model 6 we analyze the effect of the time that has passed since the end of an individual's political career. Here we find that companies with directors who had a political appointment more recently experience a large but insignificant increase in contracts.

Finally, models 7 and 8 show how past contract size (Model 7) and timing of past contracts (Model 8) affect the increase in contracts post election. The results indicate that Republican companies that start with larger amounts of contracts tend to have a lower but insignificant increase in contracts while companies whose contracts arrive mostly in the two year period before the elections tend to see a large increase in contracts post election where this increase is statistically different than that of other Republican companies. This last result suggests that connections matter more when the company also has a legitimate existing relation with the contracting agencies. Namely, this seems to be sort of a leverage effect where the fact that you are already increasing your contracts with the government having a connection allows this increase to be even larger.

Overall, the results provide some indication to the type of situations where connections become more valuable. However, given the nature of the data one can only conclude that the statistical power of the results lies in the fact that companies have a political connection rather than in the exact extent and nature of this political connection.

4. Further tests and robustness

This section presents various robustness tests to be described in more detail below.

4.1. Choice of the dependent variable

The dependent variable in the multivariate estimations is the log of the change in the sum of procurement contracts between the two periods before and after the 1994 (2000) midterm (presidential) election. The choice of this dependent variable addresses the issue of the existence of extreme negative and positive outliers in the raw variable, while maintaining the cardinality of the observations.

An alternative estimation technique is to transfer the cardinal into an ordinal variable. We use this technique by dividing the sample into five groups with the same number of companies in each group. Companies are sorted into these five groups based on the value of ΔC_i. For example, Group 1 comprises those companies with the lowest ΔC_i implying that companies in this group have experienced the lowest increase or the highest decrease in the value of their contracts. The multivariate estimations are then rerun as ordered logit models where the dependent variable is now a number between 1 and 5 depending on which of the five ΔC_i groups the company falls in to. The rest of the control variables are exactly the same variables as before. The results of this estimation, which are available upon request, are the same as before. The Republican dummy variable is positive and significant for both the 1994 and 2000 election, while the Democratic dummy variable is negative for both elections, but significant only for the 1994 election. Thus, the results are robust to a different specification of the dependent variable.

4.2. More flexible functional forms of size

In the empirical estimations, we control for various company-specific factors to address the possibility that the observed differences in changes in procurement contracts between Republican and Democratic companies might not be due to their political connections, but rather due to the fact that these firms are different from each other and on potentially different trajectories. In particular, we address the potential concern that the results might be driven only by the largest companies. We perform an additional test to address this concern by allowing for more flexible functional forms of size. Thus, while we control for the size of the company in our estimations, it might be that only certain size groups benefit or suffer from a change in procurement contracts. Therefore, we create size quintiles (deciles) for our sample companies and include dummies for

these quintiles (deciles). The results, which are available upon request, do not materially change. The sign and significance of the political explanatory variables remain the same, which suggests that the results hold true also for more flexible forms of size.

4.3. First event period

One last point is that the period before the 1994 election comprises two different presidencies: a Republican presidency until 1992 and a Democratic Presidency after 1992. However, this setting imposes an even higher hurdle to find any evidence for the political influence on the allocation of procurement contracts. For robustness we repeat the analysis using the years 1993 and 1994 as the pre-period and the years 1995 to 1998 as the post-period. As the two periods do not have the same duration, we use as the dependent variable the log of the change in the average annual amount in contracts between the period from 1993 to 1994 and the period from 1995 to 1998. The results on the Republican and Democratic dummy variables remain as before.

5. Conclusion

Government involvement in the U.S. private sector and in particular in financial markets seems to be increasing. As government intervention in economic activity can result in a significant reallocation of resources, some companies have the incentive to become politically connected. In previous studies, these political connections have been shown to result in an increase in shareholder value as measured by changes in company stock prices around different political events.

This paper takes a first step in disentangling the source of this value by identifying one direct way in which political connections affect the value of the largest U.S. publicly traded companies. Based on the analysis of the individuals who serve on the board of directors of all S&P500 companies, the paper classifies these companies into

those that are connected to the Democrats and those that are connected to the Republicans. The paper asks whether political connections affect the allocation of procurement contracts awarded to these companies following the 1994 midterm election in which majority control in House and Senate shifts from the Democratic to the Republican Party and following the 2000 presidential election in which the Presidency shifts from the Democratic to the Republican Party.

The main findings are that following the 1994 midterm election and the 2000 presidential election Republican companies are more likely to experience an increase in the total value of their procurement contracts while Democratic companies are more likely to experience a respective decrease. These results remain statistically significant after controlling for company characteristics, geography, as well as the industry in which the company operates.

The results suggest that, even within the confine of the strong legal system of the U.S., political connections have a significant impact on the allocation of government resources.

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Figure 1: Distribution of politically connected companies across the Fama-French 30 industries

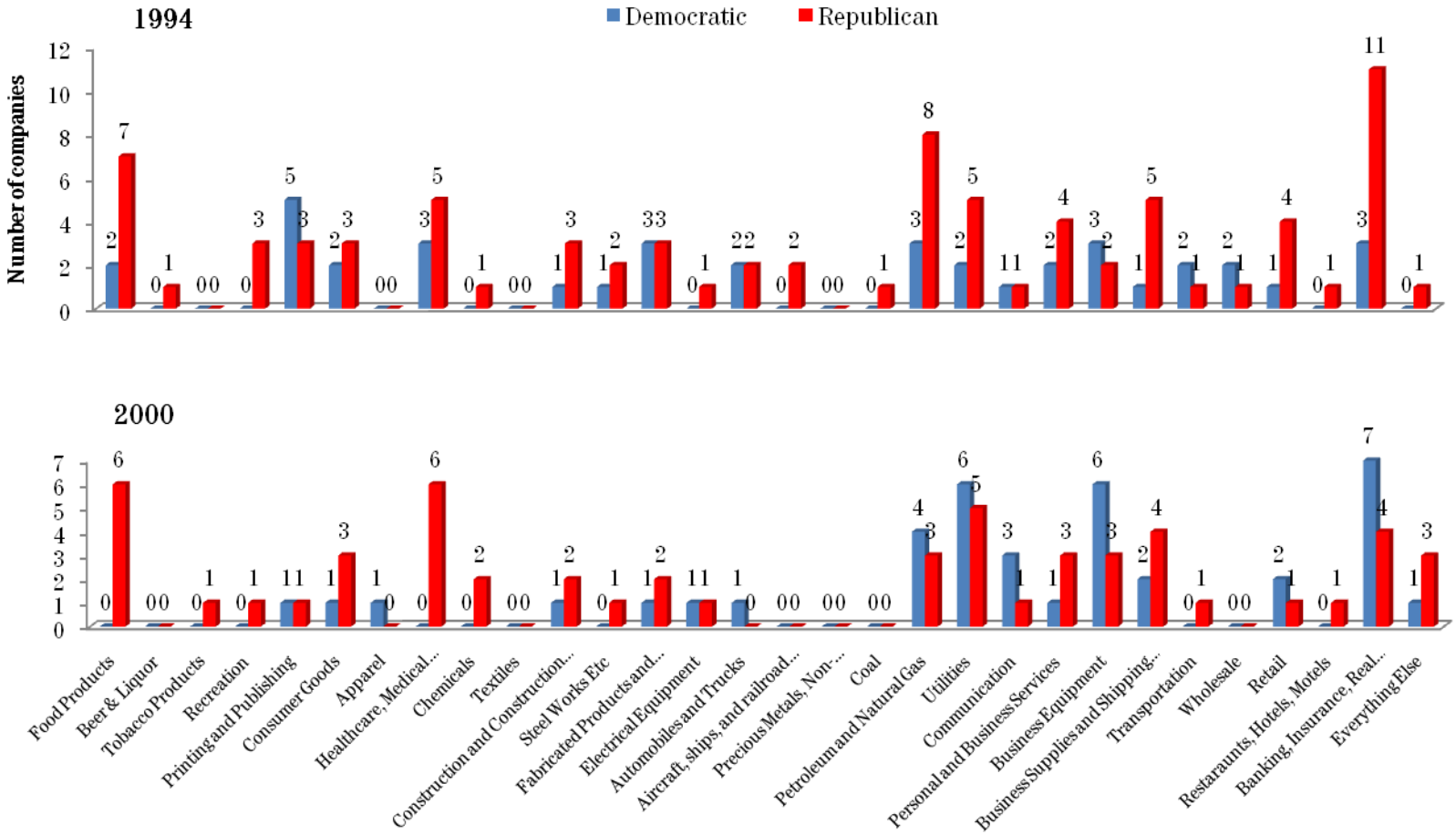

Figure 2: Time trends in procurement contracts relative to event year

Figure 2 shows the ratio of procurement contract dollars for each year relative to the dollar amount of contract in the event year (E). Contract amounts are aggregated for the two event years of 1994 and 2000. The ratio in year E+1 implies the sum of procurement contracts in 1995 and 2001 divided by the sum for 1994 and 2000. Reported ratios are for all companies, for Republican companies, for Democrat companies, and for Other companies that are neither Republican nor Democrat.

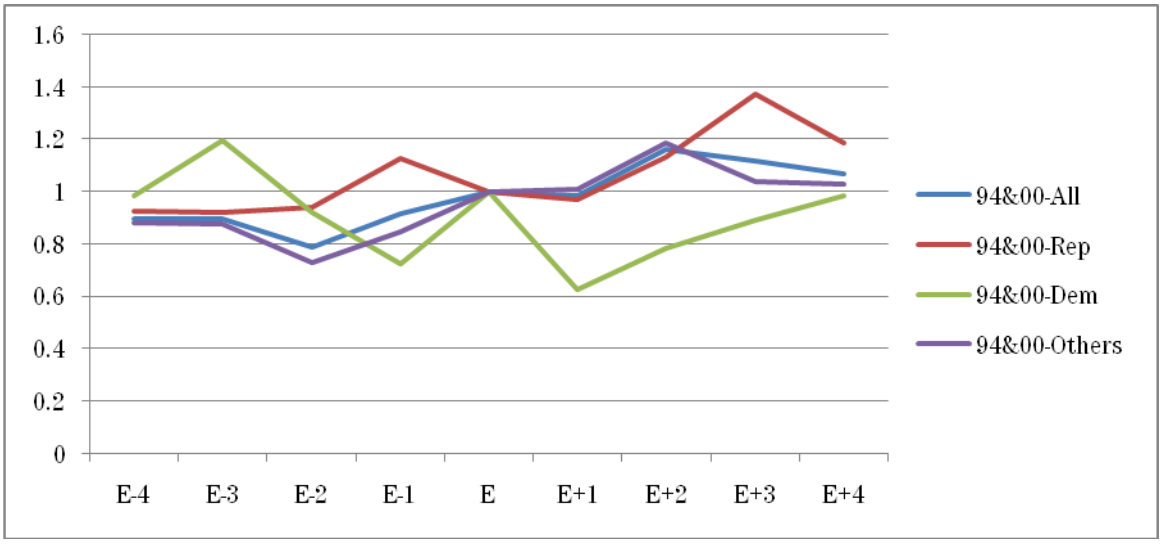

Table 1: Procurement awards of two sample companies

Table 1 shows descriptive statistics for two of our sample companies that receive procurement awards during the period surrounding the 1994 midterm election. Both companies are classified to the "petroleum and natural gas" industry based on the Fama-French 30 industry classification. The value of procurement contracts awarded by the U.S. government between 1990 and 1998 is found using information provided by FPDS-NG (Federal Procurement Data System – Next Generation). Accounting variables are from Compustat and are based on values at the end of 1994. The listed board members are those with a former political affiliation. For each board member with a former political position we provide information on his/her former position.

	Phillips Petroleum	Occidental Petroleum
Procurement ($million): 1990~1993(A)	120.0	169.5
Procurement ($million): 1995~1998(B)	289.3	143.7
Difference (B – A)	169.3	-25.8
Growth rate (%)	141.1	-15.2
Market Cap ($million)	8,568.7	6,099.4
Asset ($million)	11,436.0	17,989.0
Sales ($million)	12,211.0	9,236.0
EBITD ($million)	1,752.0	1,539.0
CAPEX ($million)	1,216.0	1,103.0
Book-to-market	0.66	0.93
Connected Board member (Nomination year)	James B. Edwards (1983) Lawrence S. Eagleburger (1993) Norman R. Augustine (1989)	Albert Gore (1972) Ray R. Irani (1984)
Connected Party	Republican	Democratic

The political career of connected board members

Board member	Year(s) of service	Position	Connected party
James B. Edwards	1981-82	Secretary of Energy Dept.	Republican
Lawrence E. Eagleburger	1989-93	Secretary of State Dept.	Republican
Norman R. Augustine	1977	Under Secretary of Defense Dept.	Republican
Albert A. Gore	1953-71	Senator in Tennessee	Democratic
Ray R. Irani	1994	Member of President Clinton's Export Council	Democratic

Table 2: Procurement awards in the United States between 1990 and 2004

Table 2 presents the value and number of procurement contracts awarded by the U.S. government between 1990 and 2004. It shows the total value of procurement contracts (in $ million), the number of contracts, and the share of the value awarded by the Defense Department, the Energy Department, and NASA. All procurement data are from FPDS-NG (Federal Procurement Data System – Next Generation).

Year	Value of Contracts (in $ million)	Number of Contracts	Share by Department(in % of value)			
			Defense	Energy	NASA	Others
1990	158,150	371,514	66.6	13.4	6.7	13.3
1991	169,079	422,275	62.5	14.3	8.6	14.6
1992	159,277	506,592	63.4	13.0	6.2	17.4
1993	165,534	450,340	58.8	12.0	12.9	16.3
1994	170,680	459,692	63.6	12.4	5.7	18.3
1995	165,275	527,085	65.5	11.1	4.4	19.0
1996	201,876	592,985	63.5	9.4	11.2	16.0
1997	177,945	537,696	66.0	10.5	3.4	20.0
1998	183,793	537,246	64.7	10.1	4.1	21.0
1999	189,312	567,669	64.8	10.7	3.6	20.9
2000	208,208	613,655	66.5	8.3	2.8	22.3
2001	213,840	691,568	66.2	9.4	2.5	21.9
2002	281,240	902,218	67.3	8.0	2.0	22.7
2003	335,237	1,503,145	65.6	8.9	4.2	21.3
2004	351,107	2,843,212	68.9	6.1	4.4	20.7
Mean	208,704	768,459	65.3	10.0	5.2	19.5
Sum	3,130,553	11,526,892				

Table 3: Summary statistics for the sample companies

Panel a) of Table 3 presents descriptive statistics for the 330 S&P500 companies that have government procurement contracts during the 1990 to 1998 period. Panel b) presents descriptive statistics for the 380 S&P500 companies that have government procurement contracts during the 1996 to 2004 period. These companies are sorted based on the political connections of their board members in 1994 (panel a) and 2000 (panel b). The reported values for Market Cap, Assets, Sales, Earning before income, tax, and depreciation (EBITD), Capital Expenditure (CAPEX) and Book-to-Market Equity Ratio are measured as of the end of 1994 (panel a) and 2000 (panel b). A company is classified as politically connected if it has at least one board member with the following former position: President, Presidential (Vice-Presidential) Candidate, Senator, Member of the House of Representatives, Governor, Mayor, (Assistant) Secretary, Deputy Secretary, Deputy Assistant Secretary, Under Secretary, Director (CIA, FEMA), Deputy Director (CIA, OMB), Commissioner (IRS, NRC, SSA, CRC, FDA, SEC), Representative to the United Nations, Ambassador, Staff (White House, President, Presidential campaign), Chairman of the Party Caucus, Chairman or Staff of the Presidential Election campaign, and Chairman or member of the President's Committee/Council.). A company is classified as Rep (Dem) if it has only Republican (Democratic) affiliated board members.

a) 1994 Midterm election

Variable	Full Sample		Rep		Dem	
	Mean	Median	Mean	Median	Mean	Median
Market Cap ($ million)	7,458	3,681	9,881	6,488	5,736	2,995
Asset ($ million)	14,199	4,744	21,378	8,247	12,671	4,863
Sales ($ million)	8,269	4,527	12,989	8,087	7,792	4,819
EBITD ($ million)	1,403	623	2,067	1,125	1,120	477
CAPEX ($ million)	548	233	826	356	467	222
Book-to-market	0.56	0.51	0.56	0.47	0.54	0.55
No. of companies	330		81		39	

b) 2000 Presidential election

Variable	Full Sample		Rep		Dem	
	Mean	Median	Mean	Median	Mean	Median
Market Cap ($ million)	28,027	8,998	40,804	13,661	21,413	7,268
Asset ($ million)	32,040	9,773	25,203	12,385	67,086	17,173
Sales ($ million)	13,848	6,865	18,843	10,157	18,936	8,998
EBITD ($ million)	2,864	1,244	3,554	2,084	3,933	1,364
CAPEX ($ million)	1,030	331	1,161	589	1,442	603
Book-to-market	0.48	0.36	0.39	0.30	0.65	0.54
No. of companies	380		55		39	

Table 4: Tenure and timing of nomination of political boards

Panel a) of Table 4 reports the mean, median, and maximum period of time (in years) between the nomination of a politically connected board member and the 1994 midterm election and the 2000 presidential election, respectively. Panel b) presents the number of nominations of politically connected board members in specific years. The first sorting criterion is based on the year in a presidential cycle in which a politically connected board member is nominated. 1st year refers to nominations in the next year after a presidential election (e.g. 1981, 1985, 1989); 2nd year refers to nominations in the second year after a presidential election (e.g. 1982, 1986, 1990); 3rd year refers to nominations in the third year after a presidential election (e.g. 1983, 1987, 1991), and 4th year refers to nominations in the fourth year after a presidential election (e.g. 1984, 1988, 1992). The second sorting criterion is based on whether a board member is nominated in an odd or an even year. The third sorting criterion is based on whether the incumbent President is from the Republican or Democratic Party. The fourth and fifth criteria are based on whether the Republican or Democratic Party holds the majority in the Senate and House, respectively. In election years, the calculation of the year starts on the day after the election; in non-election years it starts on Nov. 11th.

a) Tenure of connected boards before the 1994 election and the 2000 election

		1994 Election			2000 Election			All
		Rep	Dem	Total	Rep	Dem	Total	
Number of nominations of connected board members		188	65	253	198	99	297	550
Tenure	Mean	4.09	6.62	4.74	8.77	8.41	8.65	6.85
	Median	3	4	3	7	7	7	6
	Max	20	22	22	25	27	27	27

b) Nomination timing of connected boards

Nomination	Rep	Dem	Total
Total	386	164	550
Year in presidential cycle			
1st year	172	50	222
2nd year	93	35	128
3rd year	67	53	120
4th year	54	26	80
Odd/Even Years			
Odd Years	239	103	342
Even Years	147	61	208
President			
Republican	194	88	282
Democratic	192	76	268
Senate Majority			
Republican	83	64	147
Democratic	303	100	403
House Majority			
Republican	38	36	74
Democratic	348	128	476

Table 5: Value of procurement contracts for sample companies

Panel a) of Table 5 summarizes the value of procurement contracts (in $million) for the sample of 330 S&P500 companies between 1990 and 1998. Panel b) summarizes the value of procurement contracts (in $million) for the sample of 380 S&P500 companies between 1996 and 2004. A company is classified as Rep (Dem) if it has only Republican (Democratic) affiliated board members.

a) 1994 Midterm election

Year	Mean of procurement contracts ($ million)		
	Full Sample	Rep	Dem
1990~1998	1,434	3,654	816
1990~1993 (A)	569	1,394	391
1995~1998 (B)	709	1,893	323
Difference (B-A)	140	499	-67
Growth rate(%)	24.7	35.8	-17.3
No. of companies	330	81	39

b) 2000 Presidential election

Year	Mean of procurement contracts ($ million)		
	Full Sample	Rep	Dem
1996~2004	2,010	3,763	922
1996~1999 (A)	720	1,468	359
2001~2004 (B)	1,072	1,974	439
Difference (B-A)	352	506	80
Growth rate(%)	48.9	34.5	22.2
No. of companies	380	55	39

Table 6: Cross-section analysis for the change in procurement contracts of 1994 sample

The sample consists of 330 companies in the S&P 500 in the year 1994. The dependent variable is the log of the absolute value of the change in the sum of procurement contracts between 1990-1993 and 1995-1998; this variable is multiplied by 1 if the change is positive and -1 if it is negative. lnCap is the log of the company's market capitalization. BM is the ratio of the book value and market value of equity. HHI is the Herfindahl index, which is based on the sales amount in the 2-digit SIC industry of the company. CAPEX/Sales is the ratio of capital expenditure to sales. CostGood/Sales is the ratio of cost of goods sold to sales. All control variables are from COMPUSTAT and are measured at the end of 1994. dRep is a dummy variable that takes a value of one if a company is politically connected to the Republicans and zero otherwise. dDem is defined similarly. SalesGrowth is the growth rate in sales between 1990-1991 and 1992-1993. lnProc_bef4yr is log of procurement contracts amount in years 1990~1993. dDonation_Rep is a dummy variable that takes a value of one if a company donates more to Republicans than to Democrats in the 1994 elections, and dDonation_Dem is defined similarly. per_Rep is the percentage of Republican board members out of all politically connected directors, and per_Dem is the percentage of Democratic directors. no_Rep is the number of Republican board members, and no_Dem is defined similarly. Red State dummy is a dummy variable that takes the value of one if the senators from the state where the company is headquartered are Republican in 1994. SIC2 digit dummy is a dummy variable based on the SIC 2-digit industry classification. All models are adjusted for heteroskedasticity. The t-values are in parentheses. The symbols $, * and ** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Model	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
lnCap	-0.270	0.024	-0.169	-0.246	0.351	-0.141	-0.063	0.005
	[0.58]	[0.05]	[0.36]	[0.50]	[0.75]	[0.27]	[0.12]	[0.01]
BM	1.143	1.305	1.299	1.269	2.129*	1.695	1.762$	1.996$
	[1.01]	[1.19]	[1.23]	[1.21]	[2.16]	[1.65]	[1.68]	[1.88]
HHI	0.294**	0.293**	0.288**	0.277**	0.286**	0.287**	0.285**	0.287**
	[3.38]	[3.28]	[3.23]	[3.06]	[3.21]	[3.28]	[3.24]	[3.32]
CAPEX/Sales	0.153*	0.155*	0.145$	0.136$	0.100	0.149*	0.151*	0.150*
	[2.03]	[2.11]	[1.94]	[1.82]	[1.32]	[1.98]	[2.01]	[2.07]
CostGood/Sales	0.012	0.021	0.014	0.017	0.032	0.016	0.018	0.021
	[0.41]	[0.73]	[0.49]	[0.57]	[1.14]	[0.55]	[0.62]	[0.74]
dRep	2.667*		2.225*	2.350*	2.307*	2.351*		
	[2.55]		[2.10]	[2.16]	[2.20]	[2.23]		
dDem		-3.445**	-2.899*	-2.634*	-2.956*	-2.772*		
		[2.83]	[2.35]	[2.07]	[2.52]	[2.27]		
SalesGrowth				0.563$				
				[1.82]				
lnProc_bef4yr					-0.347**			
					[4.50]			
dDonation_Rep						0.705	0.630	0.520
						[0.55]	[0.49]	[0.41]
dDonation_Dem						-2.014	-1.999	-1.963
						[1.24]	[1.23]	[1.20]
per_Rep							1.887$	
							[1.73]	
per_Dem							-3.215**	
							[2.67]	
no_Rep								0.971$
								[1.67]
no_Dem								-2.949**
								[3.81]
Red State Dummy	yes	yes	yes	yes	yes	yes	yes	yes
SIC 2-digit Dummy	yes	yes	yes	yes	yes	yes	yes	yes
Constant	-11.236**	-10.494*	-9.193*	-8.890*	-6.330	-9.861*	-10.124*	-11.202*
	[2.74]	[2.44]	[2.17]	[2.00]	[1.54]	[2.16]	[2.22]	[2.51]
Observations	330	330	330	319	330	330	330	330
R-squared	0.28	0.28	0.30	0.29	0.33	0.30	0.30	0.31

Table 7: Cross-section analysis for the change in procurement contracts of 2000 sample

The sample consists of 380 companies in the S&P 500 in the year 2000. The dependent variable is the log of the absolute value of the change in the sum of procurement contracts between 1996-1999 and 2001-2004; this figure is multiplied by 1 if the change is positive and multiplied by -1 if it is negative. lnCap is the log of the company's market capitalization. BM is the ratio of the book value and market value of equity. HHI is the Herfindahl index, which is based on the sales amount in the 2-digit SIC industry of the company. CAPEX/Sales is the ratio of capital expenditure to sales. CostGood/Sales is the ratio of cost of goods sold to sales. All control variables are from COMPUSTAT and are measured at the end of 2000. dRep is a dummy variable that takes a value of one if a company is politically connected to the Republicans and zero otherwise. dDem is defined similarly. SalesGrowth is the growth rate in sales between 1996-1997 and 1998-1999. lnProc_bef4yr is log of procurement contracts amount in the years 1996~1999. dDonation_Rep is a dummy variable that takes a value of one if a company donates more to Republicans than to Democrats in the 2000 elections, and dDonation_Dem is defined similarly. Lobby/Sales is the ratio of lobbying amounts to sales. Lobby is the dollar amount (millions) spent on lobbying. per_Rep is the percentage of Republican board members out of all politically connected directors on the board, and per_Dem is the percentage of Democratic directors. no_Rep is the number of Republican board members, and no_Dem is defined similarly. Red State dummy is a dummy variable that takes the value of one if the senators from the state where the company is headquartered are Republican in 2000. SIC2 digit dummy is a dummy variable based on SIC 2-digit industry classification. All models are adjusted for heteroskedasticity. The t-values are in parentheses. The symbols $, * and ** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Model	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
lnCap	-0.671$	-0.607	-0.680$	-0.241	-0.014	-0.799$	-0.136	-0.474	-0.130	-0.461	-0.882$	-0.921*
	[1.74]	[1.53]	[1.72]	[0.63]	[0.04]	[1.77]	[0.28]	[0.82]	[0.24]	[0.75]	[1.95]	[2.05]
BM	-3.474*	-3.628*	-3.503*	-3.414*	-2.255$	-3.760*	-1.995	-2.497	-1.937	-2.449	-3.826**	-3.851**
	[2.50]	[2.54]	[2.45]	[2.56]	[1.68]	[2.56]	[0.91]	[1.11]	[0.88]	[1.07]	[2.62]	[2.70]
HHI	0.074	0.086	0.074	-0.055	0.063	0.076	0.133	0.103	0.134	0.105	0.073	0.079
	[0.54]	[0.63]	[0.54]	[0.39]	[0.52]	[0.54]	[0.66]	[0.51]	[0.66]	[0.52]	[0.53]	[0.58]
CAPEX/Sales	-0.079	-0.093$	-0.080	-0.109*	-0.093$	-0.078	-0.170**	-0.172**	-0.172**	-0.174**	-0.076	-0.081
	[1.53]	[1.78]	[1.51]	[2.09]	[1.85]	[1.48]	[2.83]	[2.88]	[2.84]	[2.88]	[1.42]	[1.51]
CostGood/Sales	-0.030	-0.029	-0.030	-0.003	-0.009	-0.031	-0.058	-0.065	-0.059	-0.065	-0.033	-0.036
	[1.07]	[1.04]	[1.09]	[0.11]	[0.35]	[1.12]	[1.43]	[1.63]	[1.44]	[1.65]	[1.20]	[1.30]
dRep	2.416*		2.443*	2.773*	3.249**	2.332*	2.610$	2.479$	2.641$	2.502$		
	[2.21]		[2.21]	[2.50]	[3.02]	[2.08]	[1.84]	[1.75]	[1.84]	[1.75]		
dDem		-0.168	0.228	-0.770	1.047	0.237	2.277	2.268	2.307	2.292		
		[0.10]	[0.13]	[0.51]	[0.66]	[0.14]	[0.99]	[0.99]	[0.99]	[0.99]		
SalesGrowth				0.905*								
				[2.16]								
lnProc_bef4yr					-0.428**							
					[6.32]							
dDonation_Rep						0.615			0.025	-0.034	0.502	0.431
						[0.56]			[0.02]	[0.02]	[0.46]	[0.39]
dDonation_Dem						2.826			-0.846	-0.603	2.564	2.518
						[1.22]			[0.27]	[0.20]	[1.11]	[1.12]
Lobby/Sales							23.954		24.415			
							[0.55]		[0.53]			
Lobby($million)								0.326		0.324		
								[1.09]		[1.05]		
per_Rep											3.01**	
											[2.75]	
per_Dem											1.200	
											[0.76]	
no_Rep												1.534*
												[2.11]
no_Dem												1.158
												[1.27]
Red State Dummy	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
SIC 2-digit Dummy	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	17.058**	16.674**	16.925**	13.139**	17.99**	15.219**	11.086*	14.969*	11.885$	15.456*	15.360**	15.947**
	[4.46]	[4.21]	[4.28]	[3.34]	[4.71]	[3.39]	[2.05]	[2.44]	[1.92]	[2.40]	[3.49]	[3.73]
Observations	380	380	380	338	380	380	222	223	222	223	380	380
R-squared	0.22	0.21	0.22	0.24	0.30	0.22	0.29	0.29	0.29	0.29	0.23	0.23

Table 8: Panel data analysis for 1994 and 2000 event

The sample consists of all firms in the S&P500 having procurement contracts in the year 1994, 1996, 1998 and 2000, that is two event year, 1994 and 2000, two placebo event year 1996 and 1998. The dependent variable is the log of the absolute value of the change in the sum of procurement contracts between before and after the event year; this figure is multiplied by 1 if the change is positive and multiplied by -1 if it is negative. lnCap is the log of the company's market capitalization. BM is the ratio of the book value and market value of equity. HHI is the Herfindahl index, which is based on the sales amount in the 2-digit SIC industry of the company. CAPEX/Sales is the ratio of capital expenditure to sales. CostGood/Sales is the ratio of cost of goods sold to sales. All control variables are from COMPUSTAT and are measured at the end of 1994, 1996, 1998, and 2000. lnProc_bef4yr is the log of the procurement contracts amount 4 years before the election (1990~1993, 1992~1995, 1994,~1997, 1996~1999). dRep is a dummy variable that takes a value of one if a company is politically connected to the Republicans and zero otherwise. dDem is defined similarly. dBoth is a dummy variable that takes a value of on if a company is politically connected to both parties. dPow is a dummy variable that takes a value of one for the event years 1994 and 2000. dRep*dPow is the interaction term of dRep and dPow; dDem*dPow is defined similarly. d94, d00 are dummy variables that take a value of one if the year is 1994 and 2000, respectively. dRep*d94 is the interaction term of dRep and d94. FF30 Ind Dummy includes dummy variables for each industry according to the Fama-French 30-industry classification. SIC 1-digit dummy is a dummy variable based on the SIC 1-digit industry classification. SIC 2-digit dummy is a dummy variable based on the SIC 2-digit industry classification. State Dummy is a dummy variable for each state in the United States. State*Year dummy is the interaction variable of State dummy and Year dummy. SIC 2dig*Year dummy is the interaction variable of SIC 2-digit dummy and Year dummy. All models are adjusted for heteroskedasticity. The t-values are in parentheses. The symbols $, * and ** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Model	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
lnCap	-0.432	0.122	-0.429	-0.674	-0.478	-0.432	-0.069	-0.080	-0.169	-0.486
	[0.39]	[0.11]	[0.38]	[0.60]	[0.42]	[0.39]	[0.08]	[0.08]	[0.17]	[0.49]
BM	0.165	1.285	1.994	1.030	1.911	0.165	0.169	2.362	2.421	2.010
	[0.07]	[0.55]	[0.83]	[0.43]	[0.80]	[0.07]	[0.07]	[1.02]	[1.04]	[0.86]
HHI	20.985	19.386	20.668	21.101	21.739	20.985	10.099	5.719	6.126	7.194
	[1.19]	[1.13]	[1.18]	[1.20]	[1.25]	[1.19]	[0.55]	[0.28]	[0.30]	[0.35]
CAPEX/Sales	4.390	8.347	4.417	4.915	3.478	4.390	5.608	6.448	7.155	6.057
	[0.46]	[0.90]	[0.47]	[0.52]	[0.37]	[0.46]	[0.59]	[0.69]	[0.77]	[0.65]
CostGood/Sales	-5.442	-1.067	-4.347	-2.846	-0.754	-5.442	-4.944	2.875	2.645	2.508
	[0.60]	[0.12]	[0.48]	[0.32]	[0.08]	[0.60]	[0.53]	[0.31]	[0.28]	[0.27]
lnProc_bef4yr		-1.29**								
		[7.57]								
dRep*dPow	5.456**	4.678**	5.548**	5.256**	5.139**	5.456**	4.368**	4.832**		
	[2.99]	[2.64]	[3.04]	[2.91]	[2.85]	[2.99]	[2.59]	[2.83]		
dDem*dPow	-1.653	-1.847	-1.425	-2.333	-2.647	-1.653	-3.093	-3.701		
	[0.74]	[0.85]	[0.64]	[1.05]	[1.17]	[0.74]	[1.42]	[1.64]		
dBoth*dPow	1.983	2.010	1.194	1.434	0.975	1.983	1.819	1.844		
	[0.77]	[0.81]	[0.47]	[0.56]	[0.38]	[0.77]	[0.72]	[0.74]		
dRep*d94									4.976*	4.995*
									[2.28]	[2.29]
dDem*d94									-5.573$	-5.571$
									[1.81]	[1.81]
dBoth*d94										-2.799
										[0.84]
dRep*d00									4.495$	4.542$
									[1.85]	[1.87]
dDem*d00									-2.030	-2.048
									[0.67]	[0.68]
dBoth*d00										7.105*
										[1.99]
Year Effect	yes	yes	yes	yes	yes	yes				
Firm Fixed Effect	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
FF 30 Ind Dummy			yes							
SIC 1-digit Dummy				yes						
SIC 2-digit Dummy					yes					
State Dummy						yes				
State*Year Dummy							yes			
SIC 2-digit * Year Dummy								yes	yes	yes
Constant	6.190	17.225	17.254	-40.95*	-37.24*	6.190	-395,908	-313,605	-218,483	-132,818
	[0.50]	[1.42]	[0.80]	[2.04]	[1.97]	[0.50]	[0.02]	[0.27]	[0.19]	[0.11]
Observations	1358	1358	1358	1358	1358	1358	1358	1358	1358	1358
Number of firm	456	456	456	456	456	456	456	456	456	456
R-squared	0.02	0.08	0.06	0.04	0.08	0.02	0.11	0.19	0.19	0.19

Table 9: Robustness test: Detailed analysis for Republican companies

The sample consists of only Republican firms in the S&P500 that have procurement contracts in the years 1994 and 2000. The dependent variable is the log of the absolute value of the change in the sum of procurement contracts between before and after the event year; this figure is multiplied by 1 if the change is positive and multiplied by -1 if it is negative. lnCap is the log of the company's market capitalization. BM is the ratio of the book value and market value of equity. HHI is the Herfindahl index, which is based on the sales amount in the 2-digit SIC industry of the company. CAPEX/Sales is the ratio of capital expenditure to sales. CostGood/Sales is the ratio of cost of goods sold to sales. All control variables are from COMPUSTAT and are measured at the end of 1994 and 2000 respectively. dRelatedness is a dummy that takes a value of one if the former career of a connected board member is related to the current business of the company. dDefense is a dummy for board member with a defense career. dGovernment is a dummy for a board who was a government official. dCongress is a dummy for a board who was a congressman, Senate or House of representative. Tenure is the number of years for which the connected board member has been on the board of the company. Gap is the number of years between the last political appointment of the board member and his nomination to the board. dBig_contract_bef4year is a dummy that takes a value of one if the average procurement contract size for 4 years before the event year is greater than the median in the Republican companies in 1994 or 2000. % of 3rd & 4th year contract is the ratio of the 3rd and 4th year contract amount and the total 4-year period contract amount. Red State dummy is a dummy variable that takes the value of one if the senators from the state where the company is headquartered are Republican in 1994 and 2000, respectively. The SIC 1-digit dummy is a dummy variable based on the SIC 1-digit industry classification. All models are adjusted for heteroskedasticity. The t-values are in parentheses. The symbols $, * and ** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Model	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
lnCap	0.279	0.248	0.288	0.288	-0.039	-0.462	0.486	0.202
	[0.52]	[0.47]	[0.54]	[0.54]	[0.06]	[0.71]	[0.84]	[0.37]
BM	0.888	1.071	0.953	0.953	-0.692	-1.771	1.198	1.175
	[0.55]	[0.68]	[0.62]	[0.62]	[0.31]	[0.91]	[0.74]	[0.64]
HHI	-0.016	-0.023	-0.021	-0.021	-0.150	-0.057	-0.031	-0.062
	[0.11]	[0.16]	[0.15]	[0.15]	[0.73]	[0.28]	[0.23]	[0.44]
CAPEX/Sales	-0.018	-0.016	-0.017	-0.017	-0.011	-0.081	-0.021	-0.021
	[0.22]	[0.20]	[0.20]	[0.20]	[0.10]	[0.81]	[0.25]	[0.25]
CostGood/Sales	-0.053	-0.051	-0.052	-0.052	-0.034	-0.047	-0.040	-0.051
	[1.45]	[1.43]	[1.40]	[1.40]	[0.68]	[1.04]	[1.12]	[1.41]
dRelatedness	0.266							
	[0.22]							
dDefense		1.473						
		[0.86]						
dGovernment			0.035					
			[0.02]					
dCongress				-0.035				
				[0.02]				
Tenure (years)					0.310*			
					[2.01]			
Gap (years)						-0.172		
						[1.24]		
dBig_contract_bef4yr							-1.356	
							[1.01]	
% of 3rd & 4th year contracts								0.056*
								[2.02]
Red State Dummy	yes	yes	yes	yes	yes	yes	yes	yes
SIC 1-digit Dummy	yes	yes	yes	yes	yes	yes	yes	yes
Constant	8.828	8.589	8.761	8.796	-1.35	5.673	7.357	13.828*
	[1.32]	[1.28]	[1.28]	[1.31]	[0.16]	[0.74]	[1.08]	[2.12]
Observations	136	136	136	136	90	99	136	134
R-squared	0.08	0.09	0.08	0.08	0.16	0.16	0.09	0.12