Lobbying Externalities and Competition

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Abstract

I show that lobbying generates negative externalities, which affect non-lobbying companies. When a piece of new legislation passes in Congress, non-lobbying companies in aggregate lose $1.9bn in market value. I obtain this result using a novel dataset combining comprehensive information on corporate lobbying activity with congressional activity on bills. To explain why negatively affected companies do not lobby, I identify two frictions that hinder them. First, non-lobbying companies do not represent enough voting power to support politicians in the elections. Second, trade associations, which could represent their collective interests, are captured by companies that lobby individually. I demonstrate this mechanism using unique hand-collected data on membership in the main trade associations. These findings have important policy implications: they highlight the economic mechanisms which could be targeted by policies regulating corporate lobbying.

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Corporate lobbying is under extensive public scrutiny. It was a key issue in the last two U.S. presidential campaigns, it is mentioned by the major newspapers more than once a day on average, and it often features in popular movies and television series.[1] This level of attention has fueled two widespread beliefs: (1) that most corporations lobby, and (2) that lobbying is expensive. The facts, however, are very different: only 20% of all publicly listed companies lobby, and lobbying expenses are typically less than $4m per lobbying firm-Congress. That is peanuts for a publicly listed company, and even more affordable to a group of companies lobbying together in a trade association such as the National Rifle Association or the Mortgage Bankers Association.

The fact that relatively few companies lobby raises the question what externalities they impose on the ones that don't. After all, lobbying targets regulation, which affects everyone. Those externalities could be positive if lobbying provides useful information to legislators, or negative if it persuades them to prioritize the interests of lobbying companies. The fact that lobbying appears so affordable raises the question why so many companies do not invest in it. Some frictions must exist, which prevent them from lobbying.

In this paper, I address these questions. I show that non-lobbying companies are negatively affected when a new piece of regulation influenced by lobbying is approved by Congress. They experience negative stock returns, and the aggregate loss in value per one bill is $1.9bn. I obtain these results on a comprehensive sample, which I assemble by scraping information from the websites of the Senate's Office of Public Records, the Center for Responsive Politics, and the Library of Congress. My data track lobbying activity and bills targeted by lobbying across all industries over the period 1999-2016 (106^{th}-114^{th} Congresses), covering 18,564 bills

[1] Source: Daily newsload is from the Dow Jones Factiva database.

out of which 789 become law.

Lobbying externalities are heterogeneous across three dimensions. First, they vary within industry depending on the degree of competition, measured by product similarity between lobbying companies and their non-lobbying competitors. The further away competitors are most negatively affected; and the closest competitors free-ride on lobbying and gain. For example, lobbying by a petroleum producer is detrimental to "clean energy" companies, but it is beneficial to other petroleum producers. Similarly, lobbying by internet giants such as Google, Twitter or Facebook comes with a cost to traditional media companies, but benefits businesses distributing online content.[2] Second, the negative effects are pervasive across industries, affecting Energy, Finance, Healthcare, and High tech companies the most. Third, the externalities vary by the nature of the regulated economic activity, which I infer from the bill text. I group bills into distinctive categories using the Latent Dirichlet Allocation (LDA) text clustering technique. The largest groups of bills on which the non-lobbying companies lose in value are related to natural resources, stakeholder protection, and to credit and financing.

To ensure that my results are not driven by omitted time-varying company characteristics, I exploit the rich structure of my data. Most lobbying companies in a given Congress lobby on multiple bills, and their non-lobbying competitors are affected by multiple bills. This generates within company-Congress variation and allows me to include lobbying company $\times$ Congress fixed effects and non-lobbying company $\times$ Congress fixed effects. Those fixed effects absorb any factors associated with a given company at a given point in time that

[2]For example, these effects are evident on the American Security and Clean Energy Act, on the Stop Online Piracy Act and the Protect Intellectual Property Act.

could drive both returns and lobbying.

I perform additional tests to rule out two alternative explanations to these findings. First, in a series of checks I show that they are not a product of measurement error. The externalities for non-lobbying competitor companies are negative under alternative definitions of lobbying, returns, and industry. They are null for non-competitor companies, which do not operate in the same industries with the lobbying companies ("placebo group").

Second, I rule out an alternative explanation that lobbying does not impose externalities, but merely serves as a regulatory protection. It could be that by lobbying companies obtain an exemption from restrictive regulation and gain in value, and companies that cannot lobby lose. If this is the case, any policy aimed at restricting lobbying would not decrease the lobbying externalities, and would only deprive lobbying companies from the regulatory protection. To rule this out, I develop a test around Barack Obama's 2009 executive order. The order prevents politicians formerly employed by the executive agencies and by the executive office of the President from acting as "revolving door" lobbyists (and vice versa) for two years after leaving (or before taking) office. The ability to lobby the executive branch affects regulatory benefits that companies obtain by lobbying as well as the externalities, since this branch plays an active role in the lawmaking, and it is attracts most lobbying along with the two Chambers of Congress. I show this in a difference-in-differences-in-differences framework: after the executive order, non-lobbying competitors to lobbying companies heavily relying on "revolving door" lobbyists lose in value less around passage of regulation influenced by lobbying. Since the lobbying restriction associates with lower value losses to the competitors, the externalities must be imposed by lobbying.

Overall, my first set of findings is consistent with lobbying generating negative external-

ities that affect the non-lobbying companies. Given that those companies lose in value, it is perplexing why they do not lobby. In my second set of results, I present empirical evidence on two economic frictions that deprive them of access to lobbying. The first friction is that those companies do not mobilize sufficient voting power to support politicians in the elections. The second friction is that their collective lobbying via trade associations is captured by individually-lobbying companies.

Voting power plays an important role, because by lobbying companies hire lobbyists to convince politicians to alter the regulation, and in return the politicians can rely on votes mobilized by the companies.[3] By altering the regulation in favor of a given company, a politician can gain electoral support of the company' employees via at least two channels. First, employees have a direct incentive to support a politician favoring their employer. Second, companies actively encourage their workers to vote for the politician by communicating information about their preferred candidates (Hertel-Fernandez (2016)).[4] These mechanisms are especially powerful for politically connected companies, because their employees are more likely to vote in the elections (Babenko et al. (2018)).

If politicians respond to voting power, companies lacking it may not lobby. Consistent with this argument, I show that *within a given electoral area* companies with little voting power are more affected by lobbying externalities. This is especially true where voting power is more important, i.e. in battleground electoral areas where politicians win or lose with a small margin of votes, and when bill sponsors seek re-election.

[3] In comparison, political campaign contributions (PACs) or politically oriented non-profit donations are made in form of monetary payments.

[4] "Companies [...] sent letters or information packets to their employees suggesting – and sometimes explicitly recommending – how they should vote... ." ("Here's a Memo From the Boss: Vote This Way", *The New York Times*, October 26, 2012).

When companies cannot lobby individually, they could still combine enough voting power to lobby together. I show that within electoral areas their aggregate number of employees typically exceeds the number of employees of their lobbying rival. However, when trying to coordinate their actions, companies face a moral hazard problem: each of them has an incentive not to join the collective lobbying effort and free-ride. To avoid this problem, they can coordinate in a trade association, which lobbies on behalf of all its members.

Setting up and operating the association is costly and again subject to moral hazard. Thus, it is frequently delegated to large and resource-rich companies with high bargaining power within the association (Wilson (1995)). Those companies often have individual lobbying access and can choose whether to lobby alone or via the association. When the regulation affects all the members in a similar way, they have more incentive to lobby via the association together with other members (Bombardini and Trebbi (2012)). On the contrary, if the regulation affects them differently, they have more incentive to lobby individually and also to capture the association to support their interests. As a result, member companies without individual lobbying access lose the association's lobbying protection.

To demonstrate this mechanism empirically, I use hand-collected historical company membership in the 30 largest lobbying trade associations over 1999-2016 from the Internet Archive: Wayback Machine website. This digital archive stores older versions of the websites of trade associations with historical member lists.[5] Using those data, I show that the association's members without individual lobbying access gain in value, when most members lobby together. They lose, when a high fraction of the association's members lobby alone. These results support the argument that the organized lobbying is ineffective because the

[5]The website URL is `https://archive.org/web/`

trade associations are captured by the individually-lobbying companies.

My findings make three contributions. First, I contribute to the literature on corporate political influence (e.g. Stigler (1971), Shleifer and Vishny (1994), Duchin and Sosyura (2012), Hill et al. (2013), Faccio and Zingales (2017), Bertrand et al. (2018)). In the context of lobbying, this literature focuses on characterizing the effects of hiring particular types of lobbyists (Blanes i Vidal et al. (2012), Bertrand et al. (2014)) and on measuring gains to the lobbying corporations (Yu and Yu (2011), Borisov et al. (2015), Kang (2015)). Adding to these studies, my paper is the first to show that lobbying generates externalities, i.e. it negatively affects non-lobbying competitor companies that face frictions preventing them from lobbying. The externalities are pervasive across industries and type of regulation.

Second, my results contribute to the public policy debate on regulating corporate political influence. I show that there are two economic frictions that hinder lobbying and sustain the negative externalities. The first friction is that the voting power of the non-lobbying companies is insufficient to reward the politician for making changes to legislation. The second friction is that the political interests of lobbying trade associations are biased towards the interest of individually-lobbying companies. These two frictions represent potential areas that can be targeted by policies designed to decrease the negative effects of lobbying.

Third, my results address the question why observed lobbying expenses are low, and contribute to the debate on why "there is so little money in politics" (Ansolabehere et al. (2003), Bertrand et al. (2018)). The frictions restrict political access and grant the ability to lobby to a relatively small group of companies. As in a simple monopsonostic setting with only a few buyers, the resulting lobbying expenses are not competitive and low.

The paper is organized as follows. Section 1 describes in detail the data, my measure of

lobbying, and presents descriptive statistics on lobbying and congressional activity. Section 2 shows the empirical results on lobbying externalities, documents the heterogeneity in externalities based on the degree of competition, industry, and type of regulation, and presents the robustness tests. Section 3 provides the evidence on the frictions hindering lobbying. Section 4 concludes.

1. Data and empirical approach

1.1. Data and sample

To measure the externalities from lobbying I need to observe (1) companies and trade association lobbying on regulation and their lobbying expenses, (2) bill characteristics, and (3) competitor companies. I assemble these data in several steps. First, I obtain names of the lobbying organizations, including companies and other interest groups, and the lists of bills they lobby on. This information is publicly available since lobbying activity is reported on a quarterly basis with the Senate's Office of Public Records (SOPR) under the Lobbying Disclosure Act of 1995. For each organization, I first scrape a set of links to SOPR quarterly reports from the website of a non-profit political watchdog – the Center for Responsive Politics (CRP). Then, I use those links to gather the information for the sample years 2008-2016.[6] To extend the panel, I scrape annual data from the CRP website available back to 1999.[7] The resulting dataset contains the names of lobbying organizations, their expenses and all the bills they lobbied on over the years 1999-2016 (106^{th} - 114^{th} Congresses Congresses).

[6]The reports for earlier years come in low quality PDF files.

[7]The year 1998, which is also available, mostly omits the bills targeted by lobbying. I repeat my analysis using yearly data also for 2008-2016, and obtain similar results.

Both the lobbying reports and the CRP website provide names of the lobbying organizations, but do not distinguish their type. I identify which names belong to publicly listed companies by fuzzy-matching them with the firm names in the Center for Research in Security Prices (CRSP) database. The Appendix A.1 provides the details. The final sample contains 1,312 publicly listed companies lobbying on 18,564 bills, 789 of which were signed into law.

Second, I obtain information on the bills targeted by lobbying, by mapping each bill into the Library of Congress (LOC). I gather the data on the roll call voting, and the bill texts. To identify the lawmakers who can affect a given bill, I gather the names of bill sponsors or co-sponsors, who introduce and support the bills, and lists of the committees, who can amend the bills. I also obtain names of the politicians assigned to the committees from the website of Professor Charles Stewart III.[8]

Third, I determine the non-lobbying competitors to the lobbying companies. For each lobbying company at the start of each Congress, I focus on the competitors that do not lobby on any bill during the Congress and operate in the same industry as the lobbying company. I use the industry definition of Hoberg and Phillips (2010, 2016), which is based on pairwise similarity between companies' product descriptions in the yearly 10-K reports.[9] The advantage of using product similarity is that it identifies competing companies from different SIC codes, which can also be affected by lobbying. For example, lobbying by oil and gas producers in SIC 13 (Oil and Gas Extraction) can affect wind power generating companies in SIC 49 (Electric, Gas and Sanitary Services). Also, the product similarity is

[8]The website URL is `http://web.mit.edu/17.251/www/data_page.html`

[9]The measure of product similarity between companies is downloaded from the website of Gerard Hoberg and Gordon Phillips. The website URL is `http://hobergphillips.usc.edu/`

time-varying and reflects changes in industry competition. For example, an investment in renewable energy infrastructure by an oil and gas company will be reflected in its 10-K report, and in the product similarity. In the sample, there are 7,187 non-lobbying competitors.[10]

Finally, I hand-collect historical membership in the 30 top trade associations over my sample period. Those associations account for a meaningful part of all the trade associations' lobbying. Their combined lobbying expenses exceed 30% of lobbying expenses made by all the associations; and the expenses of the next largest association account for less than 0.1%. Typically trade associations disclose their current membership lists on their websites, but they do not provide information on their historical membership. I retrieve older versions of their websites available on the Digital Internet Archive: Wayback Machine website.[11]

1.2. Measuring lobbying

My measure of lobbying reflects the aggregate lobbying pressure on the bill. I construct this measure in two steps. First, I compute how much a given company spends on lobbying a bill. Second, I aggregate the expenses across all the companies.

To compute how much a company i spends on lobbying a bill b, I first use the information from the SOPR quarterly lobbying reports for 2008-2016. When a company i in a calendar quarter q hires lobbyists to target a set of bills B, the lobbyists' firm files a quarterly report reflecting this information. For example, in the first quarter of 2016, General Electric Co. (GE) paid \$50,000 to lobbyists of Signal Group ($Dollar\ spending_{ifq}$) for lobbying on the Energy Policy Modernization Act and the North American Energy Security & Infrastructure

[10] If a given company is a competitor to multiple lobbying companies on the bill, I keep the observation with the highest product similarity.

[11] The website URL is `https://archive.org/web/`

Act (set B), or two bills ($n(B)$). This information is reflected in the Signal Group's quarterly report for GE. I approximate the per-bill expenses of GE in the report by dividing the \$50,000 by the number of bills, which is two in this case. Then, I compute how much GE spends lobbying on a particular bill by adding up all GE's per-bills expenses from all the reports mentioning the Act ($b \in B$):

$$\text{Company expenses}_{ib} = \sum_{f=1}^{F} \sum_{q=1}^{8} \frac{\text{Dollar spending}_{ifq|b\in B}}{n(B)_{ifq|b\in B}} \tag{1}$$

where F is the total number of the i's reports. For the years 1999-2007, I compute also *Company expenses*$_{ib}$ based on the CRP lobbying data, which is less granular.[12]

To measure the aggregate lobbying pressure on a given bill, I add up the expenses by all the lobbying companies and take the natural logarithm of the sum:

$$\text{Lobbying}_b = \log\left(1 + \sum_{i=1}^{N} \text{Company expenses}_{ib}\right) \tag{2}$$

1.3. Summary statistics

Figure 1 presents a snapshot of my data across three dimensions: (1) aggregate lobbying expenses on a bill, (2) number of bills that were signed into law, and (3) lobbying participation. Figure A shows that per Congress companies typically spend \$4.5m to lobby on a bill. The largest expenses are associated with 111^{th}-112^{th} Congresses, that coincides with the passage of milestone regulation such as the Dodd-Frank Wall Street Reform and Consumer Protection Act, the American Recovery and the Reinvestment Act, and the Unemployment

[12]For these sample years, I observe the yearly lobbying expenses of a lobbying company and the number of bills it lobbies on. Based on this information, I approximate the GE's per-bill expenses in a given year by dividing its yearly lobbying expenses by its yearly number of bills. Then, I aggregate the GE's per-bill expenses over the two years of Congress.

Compensation Extension Act. Figure B plots the number of bills passed in each Congress, and the average number of bills passed per Congress, which is 90. Congresses 109^{th}-111^{th} are the busiest with 117, 146 and 125 new laws respectively.

Figures C and D show that lobbying expenses on a bill come from only 7% of companies potentially affected by the bill.[13] The other 93% are the non-lobbying competitors that belong to the same industry with the lobbying company based on the product similarity of Hoberg and Phillips (2010, 2016). The non-lobbying companies are also a large fraction by aggregate size – they constitute about 40-50% by market capitalization.

Table 1 presents the data along each dimension in greater detail. Panel A summarizes lobbying activity. Per two years of Congress, a publicly listed company on average spends \$4m on lobbying, which is about 0.15% of its revenues. The expenses are typically distributed over about 21 bills.[14] Panel B shows that per-bill expenses are \$0.20m, and the expenses on the new laws are slightly higher at \$0.22m.[15]

The scheme below demonstrates how 18,564 introduced bills result only in 789 new laws (4.25%). Only 12% of bills pass by roll call voting in the first chamber, 38% of those bills pass in the second chamber, and the majority of bills passed in both chambers are signed into law. Only 0.29% of bills fail by voting, and the rest expire with the end of Congress. Thus, the date of bill approval by roll call voting in the second chamber approximates well the date when the new law likely passes.

[13] In total, lobbying companies account for about 20% of the CRSP-Compustat universe.
[14] In 89% of the cases companies lobby on two or more bills.
[15] The difference is statistically significant with $t = 2.17$.

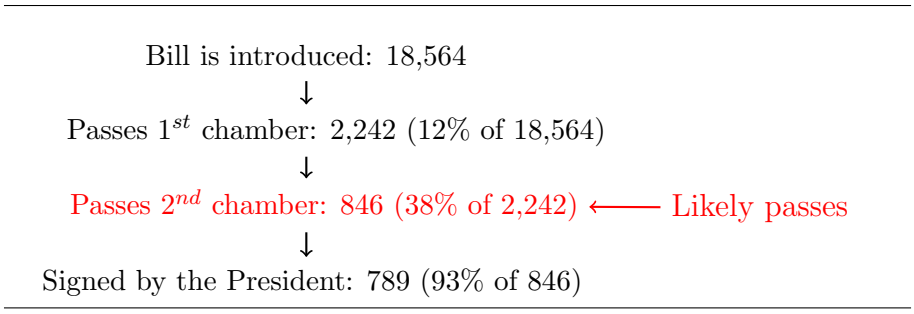

Table 1, Panel B summarizes characteristics of the new laws. The new laws typically pass with a high percentage of votes in favor (YEAs) at 39.65% in the first chamber and 44.44% in the second chamber. Among those, 71% originate in the House of Representatives, and the remaining 29% originate in the Senate. The average number of bill sponsors and co-sponsors – politicians that introduce and promote the bill – is 21, and a typical bill is lengthy with 21,850 words. The average new law passes in 6.56 months and is amended 23 times. The average bill typically attracts 16 lobbying companies, and 4% bills are crowded attracting over a hundred lobbying companies. There are typically about 321 non-lobbying competitors per bill, or 21 competitors per one lobbying company.

Table 1, Panel C compares characteristics of lobbying companies with the characteristics of their competitors. Consistent with Hill et al. (2013) and Borisov et al. (2015), the lobbying companies on average have more employees, they have larger market capitalization, lower book-to-market ratio, they are more profitable and cash rich, more leveraged, and they spend less on research and development (R&D).

1.4. Empirical approach

To measure the externalities from lobbying to the non-lobbying competitor companies, I rely on the estimates from the stock market. Following the literature that evaluates the effects

of government policies (Bittlingmayer and Hazlett (2000), Veronesi and Zingales (2010)), I employ an event study approach. I measure the stock returns around the passage of bills, which are the dates of the roll call voting on the bills in the second chamber, as described in Section 1.3. Assuming a weak-form efficient financial market, the stock returns in narrow time intervals around those dates should reflect the expectations of investors about the gains or losses to companies from the new laws. I estimate the following regression:

$$CAR_{itb}[-10, 10] = \alpha_{it} + \beta Lobbying_b + \gamma' x_b + \varepsilon_{itb} \tag{3}$$

where CAR_{itb} is the cumulative abnormal stock return to a non-lobbying company i in a Congress t around passage of a bill b. Abnormal returns are computed relative to the market model based on the CRSP value-weighted market index, and are cumulated over a $[-10, 10]$ day window.[16] $Lobbying_b$ is the natural logarithm of the combined lobbying expenses on the bill made by all publicly listed companies (equation (2)). x_b are a set of control variables measured on the bill level, and ε_{itb} is the error term.

The rich structure of my data generates a lot of variation. Most companies in a given Congress lobby on multiple bills and their non-lobbying competitors are affected by multiple bills. Thus, for a given non-lobbying company the returns vary within a Congress across bills. I exploit this variation by including non-lobbying company $\times$ Congress fixed effects (α_{it}), which absorb factors associated with *a given non-lobbying company at a given point in time* that could affect both lobbying and stock returns. Also, by tracking the pairs of lobbying and non-lobbying companies on each bill, I include lobbying company $\times$ Congress fixed effects.

[16] The results are similar when using alternative definitions of returns.

2. Lobbying externalities

2.1. Baseline estimates

Table 2 presents the estimates of the equation (3) for bills that pass in Congress and became new laws. Panel A reports the regression estimates of the cumulative abnormal return (CAR) to the non-lobbying competitor companies on the bill-level measure of lobbying (equation (3)). Specification (1) without any controls or fixed effects yields negative coefficient on *Lobbying* equal to -0.216 ($t = -8.71$).[17] In economic terms, an increase in *Lobbying* by one standard deviation implies that an average non-lobbying competitor company loses 0.23% in stock returns over $[-10, +10]$ day window: $-0.23\% = -0.216 \times 1.07 \times 100\%$, where 1.07 is one standard deviation of *Lobbying*.

Specification (2) includes a set of company characteristics and bill characteristics as control variables. The company characteristics are from Hill et al. (2013) and Borisov et al. (2015): log(*Market capitalization*), *Book-to-market*, *Profitability*, *Cash/Total assets*, *Leverage*, and *R&D/Total sales*. The bill characteristics are *Bill length* measured with a natural logarithm of a number of words in the bill text, and *Crowded bill* measured with an indicator variable equal to one if the bill attracts over a hundred lobbying companies, and zero otherwise. In addition, it includes runup in abnormal stock returns over $[-50, -11]$ days, and industry $\times$ Congress fixed effects, which absorb all the time-varying industry characteristics potentially affecting both lobbying and returns.[18] The estimated coefficient on *Lobbying* is similar in magnitude to the specification (1).

[17] t-statistics are clustered on the non-lobbying company level.

[18] I use the fixed 50 industries of Hoberg and Phillips (2010, 2016), and the results are similar for other definitions of industry such as Fama-French 10, 12, 48, and SIC-3 digit industry codes.

Specification (3) includes lobbying company × Congress fixed effects, which account for all the time-varying characteristics of the lobbying companies. Specification (4) replaces all the non-lobbying company characteristics with non-lobbying company × Congress fixed effects, which absorb all the time-varying characteristics of the non-lobbying companies. The coefficient estimates on *Lobbying* are again similar to the previous estimates. Based on the baseline specification (4), when *Lobbying* increases by one standard deviation, which is about \$2m, the average non-lobbying competitor company loses 0.21% in stock returns, or \$3.12m in market value.[19] Given that typically there are 321 non-lobbying competitors per bill, their total loss is about \$1bn.

To show that my empirical strategy produces results consistent with the literature, I repeat the estimates for companies that lobby on the bills. The results are presented in the Panel B, specification (1). The coefficient on *Lobbying* is positive and equals 0.265 ($t = 2.17$). In economic terms, an increase in *Lobbying* by one standard deviation implies that the average lobbying company gains 0.28% in stock returns over the $[-10, 10]$ day window around the dates of passage of bills. Based on this estimate, the average lobbying company gains \$54.18m in value, and in aggregate the gain per one new law is \$0.9bn.[20] The Net Present Value from lobbying for a given company is about 1,100%, which is similar to the estimate implied from Borisov et al. (2015).[21]

Specification (2) shows that *Lobbying* also associates with a higher probability of passage

[19] $-\$3.12\text{m} = -0.193 \times 1.07 \times \$1,512\text{m}$, where 1.07 is a standard deviation of *Lobbying* and \$1,512m is the average market capitalization of the non-lobbying company.

[20] $\$54.18\text{m} = 0.265 \times 1.07 \times \$19,107\text{m}$, where \$19,107m is the average market capitalization of the lobbying company. $\$0.9\text{bn} = 54.18 \times 16/1,000$, where 16 are the average number of companies lobbying on the bill.

[21] Given that the return company lobbies on 21 bills per Congress, and that 4.25% of all the bills pass, there is 0.88 chance that one bill that a company lobbies on passes. Thus, the $NPV = (\$54.18 \times 0.88 - \$3.97)/\$3.97 \times 100\% = 1,100\%$, where \$3.97 are the company's total lobbying expenses per Congress.

of bills, which is consistent with Kang (2015). Additionally, specification (3) shows that total lobbying expenses made by lobbying companies in a given calendar quarter associate with higher probability of bill amendment in the subsequent quarter, which suggests that companies may have an impact on the bill content.

Overall, my findings are consistent with the argument that lobbying generates externalities affecting the non-lobbying companies. There could also be a redistribution of value from the non-lobbying companies to the lobbying companies given a similar magnitude of the losses and the gains. The value losses also imply that the non-lobbying companies have little choice of whether to lobby or not. For comparison, the last specification (4) in Panel B presents the estimates for competitors to lobbying companies that *choose to lobby only on other bills* in Congress. Those companies are not affected by the legislation that they decide not lobby on.

2.2. Size of the economic effects

Because a passage of a bill may not be unexpected to the market, some of the effects might already be incorporated into the stock prices prior to its passage. This would lead to erroneously associating a large amount of lobbying with smaller stock return impact. I address this problem by focusing on bills that pass with a smaller margin of votes above the required majority, passage of which is less expected.

Table 3 presents the results. Panel A repeats the baseline estimates for the subsample of laws that pass with some degree of voting disagreement. Specification (1) presents the estimate for the subsample of bills that pass with a margin of votes in the bottom 5% of the

sample.[22] The coefficient estimate is larger than the baseline estimate at -0.815 ($t = -3.66$). Specification (2) presents the estimate for the bills that pass with any opposition. The estimated coefficient is -0.776 (t= 11.18). Specifications (3) and (4) account for a possibility that larger companies might be less affected by the externalities and weight the observations by company size. The estimated coefficients are slightly smaller, but are similar in magnitude.

Panel B uses the whole sample and weights the observations by the inverse of the margin of votes above the requited majority in the first chamber (specification (1)) as well as in the second chamber (specification (2)). The more conservative estimate in specification (2) yields the coefficient estimate of -0.548 (t= -10.21), and gives an upper bound for the losses to the non-lobbying companies per one legislation piece at \$2.85bn, and a midrange of \$1.9bn between this upper bound and the baseline estimate. The specifications (3) and (4) repeat the regressions for the lobbying companies. The estimated coefficients are again larger than the baseline at 0.300 (t= 2.19), and imply a \$1.2bn gain to lobbying companies per one legislation piece.

2.3. Heterogeneity in externalities

The large number of non-lobbying competitor companies and bills allows me explore the heterogeneity in lobbying externalities. I show how the effects of lobbying on the non-lobbying companies vary across three dimensions: (1) by the degree of competition within an industry, (2) across industries, and (3) across types of regulation.

First, the externalities vary depending the degree of competition. The typical regulation

[22]Not all the introduced bills are voted on, and those that are voted on likely pass. As a result, the percentage of votes above the required majority is left skewed, and the value of the fifth percentile corresponds to a 13.26% voting margin above the required majority.

is rather general and may affect multiple companies in a similar way. Thus, the non-lobbying competitors that lose from the regulation should be different from the lobbying companies in a meaningful way. Within a given industry those competitors are likely to rely on a different production technology and, as a result, a different set of products. For example, lobbying by an oil producer is likely to be detrimental to a renewable energy company, but not another oil producer.

To test whether this is the case, I sort the non-lobbying companies within each industry and Congress by their product similarity to the lobbying rivals. I use the continuous similarity scores of Hoberg and Phillips (2010, 2016) and perform sorting within their fixed 50 FIC industries and Congress.[23] I form ten deciles, with the closest (furthest) competitors in the 10^{th} (1^{st}) decile, and then I regress the CARs on *Lobbying* within each decile. Figure 2 presents the estimated coefficients net of company $\times$ Congress fixed effects and runup in abnormal stock returns, and 10% confidence intervals. Indeed, the negative effects are concentrated on companies between the 3^{rd} and the 8^{th} deciles. The closets competitors do not lose – the laws affect them in a similar way with the lobbying companies, and they free ride. In terms of the above example, lobbying by an oil producer likely benefits other oil producers. The companies with the very least similar products are not affected. Even taking into account this variation in the effects, a major fraction of the competitors within a given industry lose in value when bills influenced by lobbying pass.

Second, I show that the externalities vary across industries. Figure 3 plots the estimated coefficients *Lobbying*, and 10% confidence intervals in wide industry groups for companies in the 3^{rd} to 8^{th} deciles by product similarity. Figure 3.A shows that the effects of lobbying

[23] I obtain similar results using other definitions of industry.

are the largest in Consumer Goods, Manufacturing, and Energy. Figure 3.B scales the coefficients by the aggregate market value of the non-lobbying companies in the industry. When the coefficients are scaled by the market value, Energy, Healthcare and Finance appear to be affected the most. Industries where the non-lobbying companies gain are Retail and Telecom; however, once scaled by value, the effects are not large.

Third, I uncover heterogeneity in the externalities by type of regulation. To identify which economic aspects bills regulate, I analyze their texts. I use Latent Dirichlet Allocation (LDA), which finds clusters of documents containing sets of words that appear together most frequently (Blei et al. (2003), Müller and Guido (2016)). I apply the LDA method to all bills introduced in Congress, and sort bills into ten distinctive categories. Then, I regress CARs on *Lobbying* in each category. Table 4 shows that the externalities are pervasive across most categories of bills but the one related to education and schooling. The largest groups of bills on which the non-lobbying companies lose in value are related to natural resources, stakeholder protection, and to credit and financing.

Overall, the effects of lobbying on the non-lobbying companies are mostly negative and pervasive across the type of regulation and across industries. Within a given industry the negative effects are concentrated on the non-lobbying competitors with different set of products from the lobbying companies.

2.4. Robustness

My results are consistent with lobbying imposing negative externalities on the non-lobbying companies, and my fixed effect strategy absorbs a large number of factors that could poten-

tially confound the estimates. I perform additional set of tests to rule out two alternative explanations. First, to ensure that my results are not a product of measurement error, I vary definitions of lobbying, returns and industry when estimating the baseline equation (3). Table 5 presents the estimated coefficient on *Lobbying* from the regression of CARs to non-lobbying companies on *Lobbying*. The regressions include the same set of controls and fixed effects as in the Table 2, Panel A, specification (4).

Panel A employs the alternative measures of lobbying: the aggregate lobbying expenses made by all the publicly listed companies on the bill divided by their combined revenues (*Expenses total/Revenues*), and by their combined market capitalization (*Expenses total/Market cap.*), ten deciles of the aggregate lobbying expenses made by all the publicly listed companies on the bill (*Expenses total, 10 deciles*), and the natural logarithm of one plus lobbying expenses made by a publicly listed company on the bill (*Company lobbying*). Panel B considers two alternative definitions of returns. It uses the returns computed net of the market index (*Market-adjusted*), and relative to the Fama-French three factor model (*FF 3 factor model*). All the alternative measures lead to similar inference: non-lobbying companies lose in value when the regulation influenced by lobbying passes in Congress.

Panel C shows that my results also hold using traditional definitions of industries. It uses the set of the non-lobbying competitors that belong to the same Fama-French 12 industry (*FF-12 industry*) as the lobbying rival, and to the same Fama-French 49 industry (*FF-49 industry*). In both cases the coefficient estimate on *Lobbying* is negative and similar to the baseline. Panel D verifies that my definition of industry based on the product similarity of Hoberg and Phillips (2010, 2016) captures well the set of non-lobbying competitors affected by the bill. If this is the case, then the companies outside those industries should not

be affected by lobbying. To confirm this I performs a placebo test on the non-lobbying companies that *do not* belong to the same industry with companies lobbying on the bill. On each bill, I randomly select 100 and 300 such companies and estimate the baseline equation (3). In both cases the coefficient on *Lobbying* is not statistically significant. In addition, Panel E verifies that my results are not specific to either of the two sources of lobbying data – *SOPR quarterly reports* or *CRP annual data*.

Second, I rule out the alternative explanation that lobbying does not generate negative externalities, but merely serves as a protection against restrictive regulation. It could be that by lobbying companies can obtain an exemption from the regulation, and companies without lobbying access cannot do so. Thus, I could still observe losses to the non-lobbying companies, even if they are not imposed by lobbying.

To rule this out, I develop a test around Barack Obama's executive order of January 21, 2009, which imposes a restriction on the "revolving door" lobbying of the executive branch of the government. The order prevents politicians formerly employed by the by executive agencies and the executive office of the President from lobbying their former employer after leaving office; and it prevents former lobbyists from joining the executive branch. This branch of the government, including the agencies, plays an active role in the legislation making process (Walker (2015)). It is also attracts significant lobbying pressure: e.g. in 2016 the White House along with the executive agencies, such as Office of Management and Budget (OMB), Department of the Treasury, Department of Energy (DOE), are among the government entities that are lobbied the most, based on information in the lobbying reports (Appendix A.2). Thus, the order can decrease the ability of companies to lobby effectively

on new regulation.[24]

The intuition behind the test is that if lobbying generates externalities, then restricting lobbying should reduce them. Operationally, I employ a difference-in-differences-in-differences framework and compare the effects of lobbying after versus before the introduction of the executive order on companies having a high fraction of former staffers among their lobbyists over the previous Congress (top third of the distribution) with the effects on the other companies. Similarly, I compare the effects on their competitors to measure the differential effect of the executive order on the lobbying externalities.

To make sure that the effect of the lobbying restriction is not driven by company characteristics, I first compare lobbying companies in two groups across the observable dimensions. Table 6, Panel A shows that they are similar by size, book-to-market, leverage and profitability, but exhibit some differences in cash relative to the size of their assets, in and R&D expenses. I account for these differences using the nearest neighbor matching, and Panel B shows that the differences disappear for the matched groups. Panel C shows that the non-lobbying competitors are ex-ante not different across the two groups.

Table 7 presents the regression estimates. For this set of tests I focus on the data for the 109^{th}-113^{th} Congresses, which includes two Congresses around the executive order. Also, I use the lobbying expenses of individual lobbying companies on bills (*Company lobbying*), to distinguish the lobbying pressure from companies extensively relying on the revolving door lobbyists. Using this measure allows me to saturate the regressions with both company $\times$ Congress and bill fixed effects, which absorb potentially omitted time-varying company

[24]The "revolving door" lobbying targeted by this reform is meaningful for both companies and lobbyists and also widespread. In the yearly data I obtained from the CRP, about 82% of companies have former staffers among their lobbyists. For lobbyists themselves the connections that they make during the service in Congress represent substantial source of revenues (Blanes i Vidal et al. (2012)).

characteristics as well as bill characteristics that could drive the results. Specifications (1) and (2) show that after the restriction, lobbying companies that extensively rely on the revolving door lobbyists (RV) gain from lobbying less. Specifications (3) show that, at the same time, the externalities from lobbying decrease. These findings further suggest that the non-lobbying companies are negatively affected by the regulation due to lobbying.

3. Lobbying frictions

Section 2 shows that lobbying generates sizable economic externalities. Given that the affected companies do not lobby to eliminate those externalities, they may be affected by frictions preventing them from lobbying. I propose two such frictions. The first friction is that the companies do not mobilize sufficient voting power and thus their lobbying is ineffective ex-ante. The second friction is that a coordination problem prevents those companies from effectively combining their voting power in trade associations. The reason is that the associations are captured by individually-lobbying companies. This section describes each friction in detail and provides empirical evidence.

3.1. Friction #1: Importance of votes

Voting power is important because by altering the regulation in favor of a given company, a politician can gain electoral support from its employees. There are at least two channels how the politicians can gain the votes. First, the workers are likely to vote for politicians favoring their place of employment. Second, the U.S. companies can have a considerable impact on the political participation of their employees. They extensively utilize their right to educate their

workers on political matters via "captive" workplace meetings, and use help of the non-profit organizations, which aim at facilitating communication of political views between employers and employees (Hertel-Fernandez (2016)). One such organization, Business-Industry Political Action Committee (BIPAC) reports on its website "In Election 2002, more than half the Fortune 50 used BIPAC tools to educate employees about pro-business candidates and to get them to the polls."[25] After 2010 Supreme Court's decision Citizens United v. Federal Election Commission, the companies are able to directly communicate the names of the preferred candidates. Hertel-Fernandez (2016) provides survey evidence where the employees admit such communication. These channels are especially powerful for politically active companies, since their employees are more active voters (Babenko et al. (2018)). In addition, voting power is important in the context of lobbying because the politicians do not necessary receive monetary contributions from the lobbying companies. Instead, the companies pay to hire lobbyists, who supply politicians with information.[26]

To show that voting power is a likely friction hindering lobbying, I perform three tests. In the first test, I show that the non-lobbying companies with little voting power relative to the lobbying companies are more affected by the externalities. I calculate the difference between the number of employees of each lobbying company and its non-lobbying competitors located in the same state. The difference is denoted as Δ *employees*. Within each state and a Congress, I sort non-lobbying companies by Δ *employees* into four quartiles. Using

[25]Source: `www.bipac.org`, the website version of December 16, 2004, accessed via `web.archive.org`.

[26]In comparison, the ways of political influence based on monetary donations are Political Campaign Contributions (PACs), Super PACs, or politically oriented charitable contributions. The lobbying expenses are much larger than these other ways of political influence. Aggregate lobbying spendings per Congress are 17 times larger than PACs and over six times larger than super PACs. The estimates are based on data from the Center for Responsible Politics (`www.opensecrets.org`). As estimated by Bertrand et al. (2018), lobbying expenses also exceed politically oriented charitable contributions by 2.5 times.

observations in each quartile, I estimate the equation (1), regressing CARs on *Lobbying*. The regressions include the same set of controls and fixed effects as in the Table 2, Panel A, specification (4).

Table 8.A presents the results. The negative lobbying externalities to the non-lobbying competitors increase monotonically with Δ *employees*. In the bottom quartile and in Q2, the coefficient on *Lobbying* is statistically not different from zero. It is negative and increases in magnitude in Q3 and in the top quartile, where it is statistically significant. This suggests that the lobbying externalities increase when the non-lobbying companies have less voting power relative lobbying companies.

In two subsequent tests, I focus on cases when the companies' voting power is likely to matter more: (1) battleground electoral areas, and (2) upcoming elections of bill sponsors and co-sponsors. These tests help me make sure that my results reflect companies' voting power rather than some omitted factor correlated with the number of employees.

In the first test I focus on battleground electoral areas. These are the congressional districts and states where a politician wins or loses the elections with a small margin of votes.[27] To identify such areas, I obtain federal elections data for 1999-2016 from the U.S. Federal Election Commission. I match the elected senators with companies by geographical state, and elected members of House by state and congressional district. Each Congress the geographic boundaries of congressional districts change. To identify in which district a company is located, I proceed as follows. I retrieve the ZIP code in the company's address from Compustat, and use it to obtain its corresponding the latitude and longitude from the

[27]Members of the House of Representatives are elected on the congressional district level, and each Congress all the 435 members of the House are re-election. Senators are elected on a state level, and each Congress and 33 of all the 100 Senators are re-elected.

ZIP Code Tabulation Areas in the 2016 Census U.S. Gazetteer Files. I then use the latitude and longitude to find the congressional district in the U.S. Congressional Districts Shapefiles of Lewis et al. (2013).[28]

In Table 8.B, specifications (1) and (2) use the subsamples of companies located in battleground electoral areas, where any politician won or lost by a 5% voting margin. Within each Congress and district or state, I split the data into two equal groups by the median of Δ *employees* and estimate the baseline equation (3) using the observations in each group. When Δ *employees* is high, the the coefficient estimate on *Lobbying* is negative, large and statistically significant; when Δ *employees* is low the coefficient becomes small and loses its statistical significance. Specifications (3) and (4) present a similar pattern for companies located in all other districts or states but the battleground ones. The effects of lobbying when Δ *employees* is much larger in the battleground districts, which suggests that the non-lobbying companies lacking voting power are affected by lobbying more precisely in cases when the voting power is more important.

In the second test, I focus on the cases when the sponsors of bills seek re-election. A bill sponsor is a politician, a senator or a member of the House, who introduces the bill based on her expertise and demand for a given type of regulation (Schiller (1995)). A politician seeking re-election can rely on the voting power of the companies by sponsoring the bills profitable for them; and thus voting power makes lobbying more effective.[29]

In Table 8.C, specifications (1) and (2) use the subsamples of companies located in

[28]The files districts106.shp-districts114.shp and the code example "mapping congress in R". Retrieved from `http://cdmaps.polisci.ucla.edu` on June 24, 2018.

[29]In the next version of the paper I will also look at the members of the committees that amend the bills. The data on the committee members come from the website of Charles Stewart III at `http://web.mit.edu/17.251/www/data_page.html`.

districts or states where bill sponsors or co-sponsors seek re-election. For members of the House the electoral area is the congressional district, and for senators it is the entire state. There are 56 bills and 471 observations for the non-lobbying companies fitting these criteria. I perform the same analysis as in the case of the battleground electoral area. Given that the number of observations is small, I use Congress fixed effects instead of the company $\times$ Congress fixed effects to preserve statistical power. Consistent with the previous results, the lobbying externalities are negative where the voting power of non-lobbying companies is smaller relative to the lobbying companies, and the effects are stronger in sponsors' electoral areas than in other districts and states.

The results presented in this section provide evidence supporting the first friction hindering lobbying. Within electoral areas, politicians tend to disregard companies with relatively little voting power, which makes lobbying of those companies ex-ante ineffective and deprives them of lobbying access.

3.2. Friction #2: Ineffective trade associations

Even though companies with insufficient voting power cannot lobby individually, they could lobby together. My results suggest that their combined voting power could suffice. Table 9 shows that the combined number of employees of the non-lobbying companies typically outweigh the number of employees of their lobbying rival within states, congressional districts, battleground areas, and per bill. However, when trying to organize, those companies likely face a moral hazard problem, i.e. each company has an incentive not to join collective lobbying effort and to free-ride. To avoid the coordination failure, they could organize in a

trade association, which lobbies on behalf of all its members.

While the association can coordinate lobbying effort, the case examples of Wilson (1995) demonstrate that setting up and operating the association can be costly. It is often delegated to large and resource-rich companies, which have high bargaining power within the associations. Those companies often have individual lobbying access and can choose when to lobby via the association or individually. There are two likely scenarios. First, when the legislation affects all the members in a similar way, they are more likely to lobby via the association (Bombardini and Trebbi (2012)). If they do lobby individually, the other members could free-ride. Second, when the legislation affects those companies differently, they are more likely to pursue their own interests and lobby individually. In addition, they could use their bargaining power to gain support of the association, which would deprive other members of protection from negative lobbying externalities.

I document this mechanism on a novel hand-collected dataset on the membership of the top 30 lobbying trade associations, which account for over 30% of the lobbying expenses made by all the associations over 1999-2016.[30] The associations list their current members on their websites, but not their past members. The historical membership data are available on the older versions of their websites, which I retrieve from the Internet Archive: Wayback Machine.[31] In my data, the associations on average include 64 publicly listed companies per Congress, 42% of which typically lobby on at least one bill.

The individually-lobbying companies can use their bargaining power within the associations in two ways. They can force the associations to support their interests or force them

[30]My dataset does not include the Chamber of Commerce that keeps it membership list confidential.
[31]The website `https://archive.org/web/`

not to lobby at all. To convey this, I find all the associations that lobby on a given bill, or do not lobby but belong to the same economic sectors as the companies lobbying on the bill. Then, for each non-lobbying company on the bill I find all such associations it belongs to, and I measure the presence of the individually-lobbying companies in those associations. I compute shares of the individually-lobbying members based on companies' cash flow measured with EBITDA for the last fiscal year before the start of Congress (*% Members lobbying, Cash flow*) and based on their market capitalization at the start of Congress (*% Members lobbying, Market cap.*).

In the tests I focus on the subsample of companies with known association membership, and I split the sample by the median value of each of the two variables reflecting presence of the lobbying companies. Table 10, Panel A repeats the baseline regressions of CARs on *Lobbing* using observations in each quantile. Specifications (1) and (2) present the estimates for the split by the median of *% Members lobbying, Cash flow*, which typically is 19.7%. Specifications (3) and (4) present the estimates for the split by the median of *% Members lobbying, Market cap.*, which typically is similar at 19.6%. When the share of individually-lobbying companies in the associations is high, the coefficient estimates on *Lobbying* are negative and statistically significant. On the contrary, when their share is low, the coefficient estimates are positive.

Panel B repeats the regressions, replacing *Lobbing* with *Trade associations' lobbying* measured with the natural logarithm of the combined lobbying expenses on the bill made by all the trade associations. I identify trade associations in the lobbying data based on the CRP industry definition and by machine-searching the names of the lobbying organizations on the Web. The results show that when the share of the individually-lobbying companies in

the association is high, the association's lobbying does not affect members without individual lobbying access. The estimates coefficient on *Trade associations' lobbying* is negative and not statistically significant. However, when the share is low, the association's lobbying benefits those companies. Taken together, the results in both panels are consistent with the above argument that lobbying companies capture the associations, which sustains the lobbying externalities.

4. Conclusion

I study the effect of lobbying on companies that do not lobby. I show that lobbying generates negative externalities. When a new piece of regulation influenced by lobbying is approved by the second chamber of Congress, the non-lobbying companies suffer a loss in their market value, and the combined effect on the average bill is about −$1.9Bn. This result is based on a comprehensive sample combining the corporate lobbying activity and congressional activity on lobbied legislation over 1999-2016. It is pervasive across industries and sample years and robust to controlling for the measurement errors coming with different definitions of lobbying and industry. The results highlight broader effects of lobbying, which go beyond the benefits accruing to the lobbying companies.

Given that the non-lobbying companies are negatively affected, it is perplexing why they do not lobby. I propose two explanations. First, they do not represent sufficient voting power, i.e. they do not mobilize enough votes to support politicians in the elections, which makes their lobbying ineffective ex-ante. Second, the non-lobbying companies share their membership in trade associations with individually-lobbying companies, which in turn

force the trade associations to support their interests. Documenting these constrains has valuable policy implications. It highlights the areas that can be targeted by policies aiming at eliminating the lobbying externalities.

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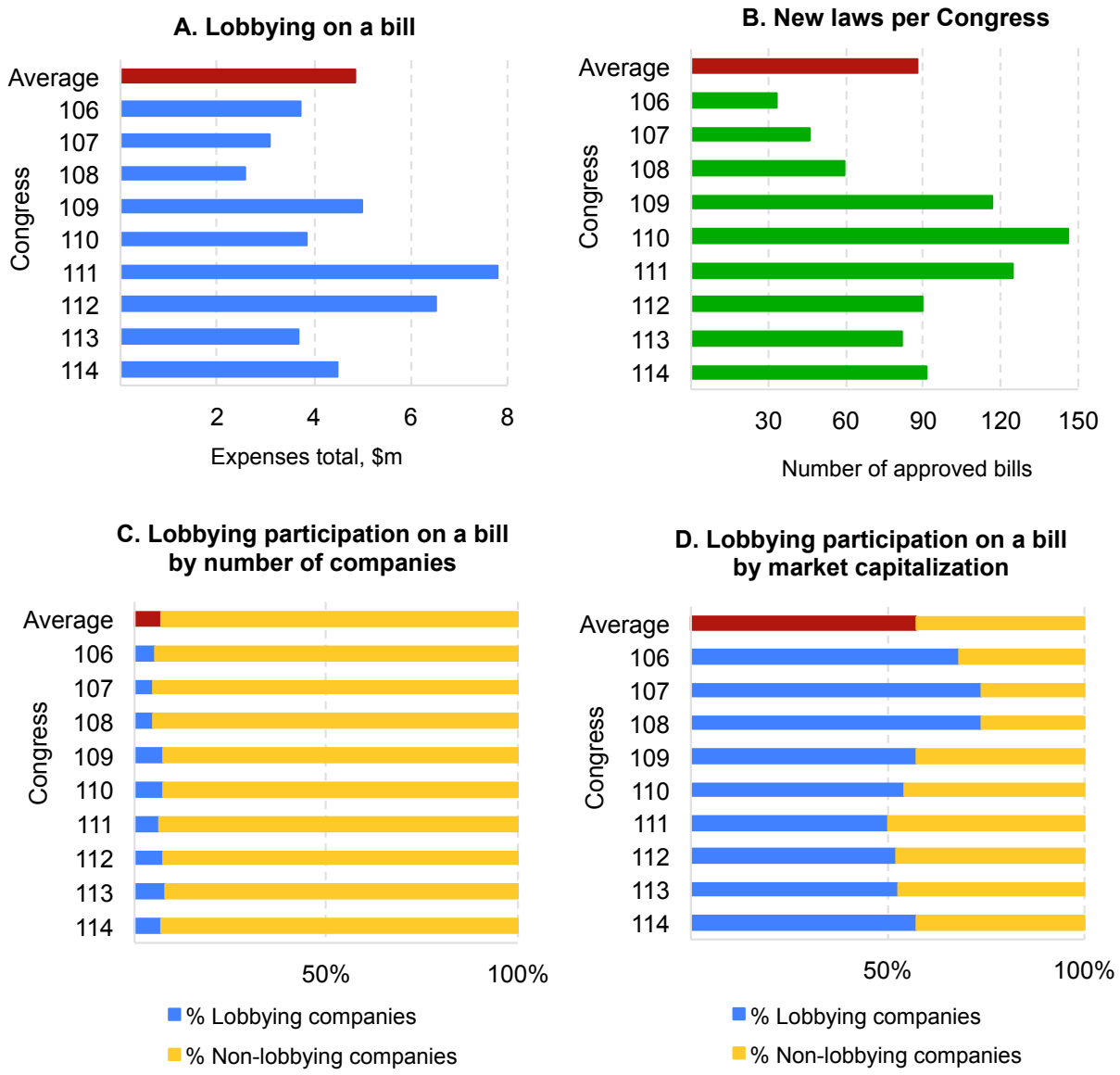

Figure 1: Data summary

Figure A presents aggregate lobbying expenses of companies on a bill, averaged within a Congress. It also shows the average across all the Congresses (*Average*). Figure B presents a number of bills passed in a Congress, and the average across all the Congresses. Figure C and Figure D present percentage of lobbying companies and non-lobbying companies on a bill, averaged within a Congress. Figure C computes percentages based on the combined number of companies, and Figure D computes percentages based on their combined market capitalization. Both figures also show the average percentages across all Congresses. Non-lobbying companies do not lobby during the Congress and operate in the same industry with lobbying companies based on the product similarity of Hoberg and Phillips (2010, 2016).

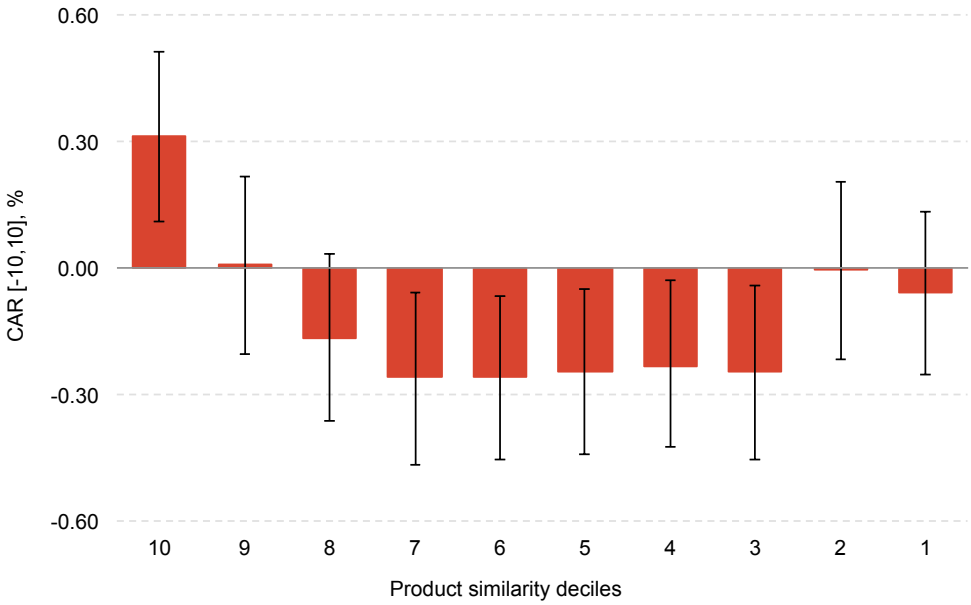

Figure 2: Lobbying externalities and product similarity

The figure plots the estimated coefficients on *Lobbying*, from the regression of cumulative abnormal returns (CARs) to the non-lobbying companies around bill approval on *Lobbying*. Each bar is an estimated coefficient on observations in each decile of product similarity of Hoberg and Phillips (2010, 2016) with the lobbying companies, sorted within FIC-50 industries and Congresses. The most (least) similar companies are in the 10^{th} (1^{st}) decile. The error bars correspond to the 10% confidence intervals. The estimates are obtained controlling for company Congress fixed effects and runup in abnormal stock returns. Non-lobbying companies do not lobby during the Congress and operate in the same industry with lobbying companies based on the product similarity.

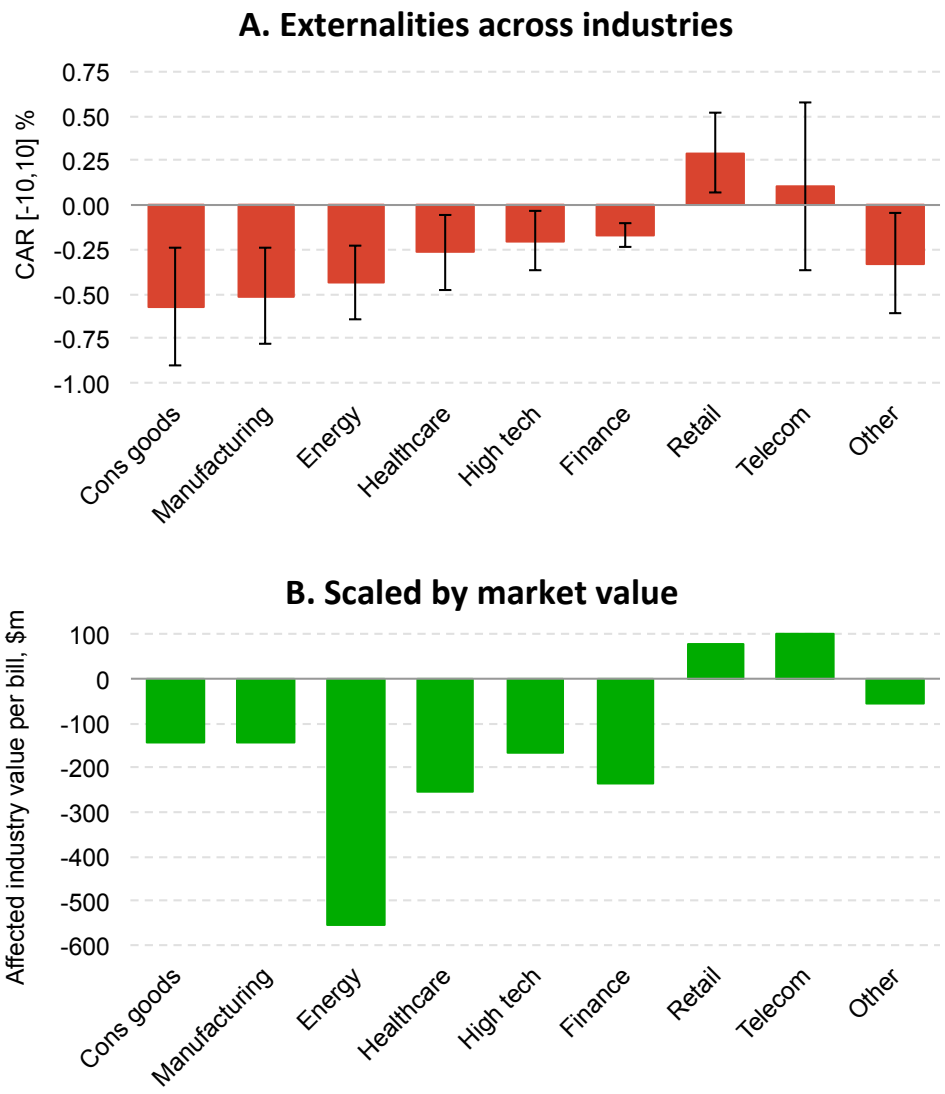

Figure 3: Lobbying externalities across industries

The figure plots the estimated coefficients on *Lobbying*, from the regression of cumulative abnormal returns (CARs) to the non-lobbying companies around bill approval on *Lobbying*. In Panel A plots each bar is an estimated coefficient on *Lobbying* using observations in a given industry. The estimates are obtained controlling for company Congress fixed effects and runup in abnormal stock returns. The error bars correspond to the 10% confidence intervals. Panel B scales the coefficients by the aggregate market value of the non-lobbying companies in the industry subject to an average bill lobbied by companies from that industry. Non-lobbying companies do not lobby during the Congress and operate in the same industry with lobbying companies based on the product similarity of Hoberg and Phillips (2010, 2016).

Table 1: Descriptive statistics

The table presents descriptive statistics. The data on lobbying activity are from the Senate's Office of Public Records (SOPR) and the Center for Responsible politics (CRP). The data on bill characteristics are from the Library of Congress (LOC). The sample period covers 1999-2016 years or 106^{th}-114^{th} Congresses. The data on company financial characteristics and number of employees are from CRSP-Compustat, taken at the start of each Congress. Panel A summarizes lobbying activity of publicly listed companies. One observation on *Company-Congress level* corresponds to one lobbying company in a Congress; on *Company-bill level* it corresponds to one lobbying company on one bill in a Congress; and on *New law level* it corresponds to one new law, which is a bill that passed in Congress. Panel B summarizes characteristics of the new laws, and one observation corresponds to one new law. Panel C compares characteristics of lobbying companies with characteristics of their non-lobbying competitor companies, and one observation corresponds to one company in a given Congress. Non-lobbying companies do not lobby during the Congress and operate in the same industry with lobbying companies based on the product similarity of Hoberg and Phillips (2010, 2016). *t*-statistics are clustered by company. The symbols ***,**,* denote statistical significance at 1%, 5% and 10% levels. Table A1 describes all the variables.

Panel A. Lobbying activity	Mean	St.dev.	Min	Median	Max	Obs
Company-Congress level						
Lobbying per Congress, $m	3.97	8.59	0.00	0.93	58.76	4,207
Lobbying per Congress/Rev., %	0.15	0.51	0.00	0.03	4.11	3,648
Number of bills	20.07	28.70	1.00	8.00	153.00	4,207
Company-bill level						
Company lobbying, $m	0.20	0.35	0.00	0.08	2.20	87,112
Company lobbying on new law, $m	0.22	0.40	0.00	0.08	2.50	12,682
New law level						
Expenses total, $m	4.52	9.40	0.00	0.65	53.92	789
Lobbying	0.96	1.07	0.00	0.50	4.62	789

Panel B. New laws characteristics	Mean	St.dev.	Min	Median	Max	Obs
Voting margin 1^{st} Chamber, %	39.65	15.63	0.12	49.28	50.00	583
Voting margin 2^{nd} Chamber, %	44.44	11.72	0.76	50.00	50.00	616
House originated, %	71.23	45.30	0.00	100.00	100.00	789
Number of co-sponsors	20.84	44.71	1.00	5.00	275.00	789
Number of words, K	21.85	51.74	0.12	2.68	285.26	789
Times to passage, months	6.56	6.15	0.03	4.93	22.67	789
Number of amendments	22.82	54.50	0.00	2.00	273.00	789
Crowded bill, %	3.68	18.83	0.00	0.00	100.00	789
Number of lobbying companies	16	31	1	4	186	789
Number of non-lobbying companies	321	456	2	109	1,964	789

Panel C. Company characteristics	Lobbying companies		Non-lobbying companies		(1)-(2)	*t*-stat
	Mean (1)	Obs	Mean (2)	Obs		
Number of employees, K	34.39	3,019	3.89	20,788	30.49	16.21***
Market capitalization, $bn	19.11	3,053	1.51	21,201	17.60	16.63***
Book-to-market	0.62	2,661	0.75	19,275	-0.12	-7.36***
Gross profitability	0.26	2,661	0.23	19,281	0.03	3.36***
Cash, $bn	2.53	3,050	0.21	21,227	2.33	14.30***
Cash/Total assets	0.15	3,050	0.20	21,227	-0.06	-9.66***
Debt/Total assets	0.24	2,652	0.16	19,227	0.08	12.49***
R&D/sales	0.10	2,661	0.41	19,289	-0.32	-11.74***

Table 2: Lobbying externalities around passage of regulation

The table presents the regression estimates of cumulative abnormal returns (CARs) around bill approval, probability of bill approval, and probability of bill amendment on *Lobbying*. CARs are computed relative to the market model over $[-10, 10]$ day window around the date of bill approval in the second Chamber of Congress. *Lobbying* is the natural logarithm of one plus the aggregate lobbying expenses made by all the publicly listed companies on the bill. Panel A presents the estimates of CARs to the non-lobbying (NLB) competitor companies on *Lobbying*, fixed effects and control variables. One observation corresponds to one company on one new law in a Congress. Panel B, specification (1) repeats the estimates for the lobbying (LB) companies. Specification (4) repeats the estimate for companies that lobbied only on *other* bills over the Congress. Specifications (2) and (3) use all the bills introduced in Congress. Specification (2) presents the estimates of an indicator variable for a bill approval on *Lobbying*, and one observation corresponds to one bill in a Congress. Specification (3) presents the estimates of an indicator variable for a bill amendment on $Lobbying_{q-1}$, and one observation corresponds to one bill in a calendar quarter. t-statistics clustered by company are in parentheses. The symbols ***,**,* denote statistical significance at 1%, 5% and 10% levels. Table A1 describes all the variables.

Panel A. Non-lobbying companies	CAR[-10,10] (1)	CAR[-10,10] (2)	CAR[-10,10] (3)	CAR[-10,10] (4)
Lobbying	-0.216***	-0.202***	-0.205***	-0.193***
	(-8.71)	(-4.72)	(-3.91)	(-4.78)
log(Market capitalization)		0.147***	0.173***	
		(5.69)	(6.55)	
Book-to-market		0.241**	0.252**	
		(2.35)	(2.42)	
Profitability		0.640***	0.439*	
		(2.80)	(1.80)	
Cash/Total assets		0.360	0.125	
		(1.28)	(0.41)	
Leverage		-0.643**	-0.678**	
		(-2.07)	(-2.15)	
R&D/Sales		-0.008	-0.008	
		(-1.10)	(-1.07)	
Bill length		0.014	0.055**	0.024
		(0.66)	(2.14)	(1.16)
Crowded bill		0.185*	0.114	0.108
		(1.85)	(0.91)	(1.14)
Runup [-50;-11]		0.092***	0.089***	0.079***
		(31.54)	(30.27)	(26.10)
Constant	0.214***			
	(3.14)			
Observations	223,900	201,667	201,550	220,806
R^2	0.00	0.03	0.06	0.13
Industry × Cong. f.e.		Yes		
LB company × Cong. f.e.			Yes	
NLB company × Cong. f.e.				Yes

Table 2 continues on the next page

Table 2 continues from the previous page

Panel B. Lobbying companies, bill approval and amendment	Lobbying companies CAR[-10,10]	Bill approval	Bill amendment	Companies lobbying on other bills CAR[-10,10]
	(1)	(2)	(3)	(4)
Lobbying	0.265**	0.040***		0.004
	(2.17)	(9.31)		(0.08)
Lobbying, q-1			0.018**	
			(2.57)	
Bill length	-0.043	0.008**		-0.055*
	(-0.76)	(3.14)		(-1.91)
Crowded bill	-0.763**	0.378***		0.028
	(-2.58)	(9.34)		(0.20)
Runup [-50;-11]	0.066***			0.076***
	(5.13)			(14.07)
Observations	9,677	18,608	17,205	74,289
R^2	0.27	0.04	0.79	0.12
LB company × Cong. f.e.	Yes			Yes
Cong. f.e.		Yes		
Bill f.e.			Yes	

Table 3: Economic effects

The table presents the regression estimates of cumulative abnormal returns (CARs) around bill approval on *Lobbying*. The set of fixed effects and control variables is the same as in Table 2, Panel A, specification (4) for the non-lobbying (NLB) companies and Table 2, Panel B, specification (1) for the lobbying (LB) companies. One observation corresponds to one company on one new law in a Congress. Panel A shows the estimates on the subsamples of bills that passed with the margin of votes above the required majority in the bottom 5% of the sample distribution (specification (1)), and with any opposition (specification (2)). The specifications (3) and (4) repeat the estimates weighting the observations by company market capitalization at the start of Congress. Panel B applies weights inversely proportionate to the margin of votes above the required majority in the first chamber (specifications (1) and (3)), and in the second chamber (specifications (2) and (4)). t-statistics clustered by company are in parentheses. The symbols ***,** denote statistical significance at 1% and 5% levels. Table A1 describes all the variables.

Dependent variable: *CAR*				
Panel A: disagreement in votes	Non-lobbying companies			
	Equal weights, $w = 1$		$w =$ Company size	
	5% margin	Any opposition	5% margin	Any opposition
	(1)	(2)	(3)	(4)
Lobbying	-0.815***	-0.776***	-0.611***	-0.537***
	(-3.66)	(-11.18)	(-3.06)	(-8.44)
Controls	Yes	Yes	Yes	Yes
Observations	14,051	105,230	14,040	105,188
R^2	0.27	0.18	0.28	0.18
NLB company × Cong. f.e.	Yes	Yes	Yes	Yes
Panel B: vote weights	Non-lobbying companies		Lobbying companies	
	$w = 1/$margin 1st chamber	$w = 1/$margin 2nd chamber	$w = 1/$margin 1st chamber	$w = 1/$margin 2nd chamber
	(1)	(2)	(3)	(4)
Lobbying	-0.681***	-0.548***	0.333*	0.300*
	(-8.61)	(-10.21)	(1.73)	(2.19)
Controls	Yes	Yes	Yes	Yes
Observations	220,806	220,806	9,677	9,677
R^2	0.46	0.24	0.49	0.35
NLB company × Cong. f.e.	Yes	Yes		
LB company × Cong. f.e.			Yes	Yes

Table 4: Lobbying externalities and type of regulation

The table presents the regression estimates of cumulative abnormal returns (CARs) to the non-lobbying (NLB) companies around bill approval on *Lobbying*, using subsamples of bills belonging to a given type of regulation. One observation corresponds to one company on one new law in a Congress. Types of regulation are defined by clustering bill texts into distinctive categories using Latent Dirichlet Allocation (LDA), and then named based on the most frequent words in the clusters. The estimates are obtained controlling for company × Congress fixed effects and runup in abnormal stock returns. t-statistics clustered by company are in parentheses. The symbols ***,**,* denote statistical significance at 1%, 5% and 10% levels. Table A1 describes all the variables.

Dependent variable: *CAR*	Natural resources	Stakeholder protection	Taxes & tariffs	Credit & financing
Lobbying	-0.113**	-0.523***	-0.156	-0.328***
	(-1.96)	(-6.01)	(-1.33)	(-3.37)
Observations	87,200	38,072	19,689	14,332
R^2	0.20	0.31	0.36	0.41
NLB company × Cong. f.e.	Yes	Yes	Yes	Yes
	Medicare	Trade	Education & schooling	Employment & immigration
Lobbying	-0.250*	-0.921***	2.090***	-2.588***
	(-1.66)	(-3.58)	(9.17)	(-6.69)
Observations	11,250	10,993	8,253	340
R^2	0.31	0.32	0.42	0.56
NLB company × Cong. f.e.	Yes	Yes	Yes	Yes

Table 5: Robustness

The table shows robustness tests for the estimates of cumulative abnormal returns (CARs) to the non-lobbying (NLB) companies around bill approval on *Lobbying*. One observation corresponds to one company on one new law in a Congress. The set of fixed effects and control variables is the same as in Table 2, Panel A, specification (4). Panel A employs alternative measures of lobbying. *Expenses total/Revenues* is the aggregate lobbying expenses made by all the publicly listed companies on the bill divided by their combined revenues at the start of Congress. *Expenses total/Market cap.* is defined similarly with the combined market capitalization in the denominator. *Expenses total, 10 deciles* are ten deciles of the aggregate lobbying expenses made by all the publicly listed companies on the bill. *Company lobbying* is the natural logarithm of one plus lobbying expenses made by a publicly listed company on the bill. Panel B computes abnormal returns net of the return on market index - *Market-adjusted*, and relative to the Fama-French three factor model - *FF 3 factor model*. Panel C considers non-lobbying competitor companies operating in the same Fama-French-12 industry with the lobbying companies - *FF-12 industry*, or in the same Fama-French-49 industry - *FF-49 industry*. Panel D focuses on companies that do not lobby during the Congress and do not belong to the same industry as the lobbying companies based on the Hoberg and Phillips (2010, 2016) similarity score. It randomly selects 100 (300) such companies per bill. Panel E first uses only the lobbying data from *SORP quarterly reports*, which restricts the sample to the 110^{th}-114^{th} Congresses. Then, it uses only *CRP annual data* for all the Congresses. t-statistics clustered by company are in parentheses. The symbols ***,** denote statistical significance at 1% and 5% levels. Table A1 describes all the variables.

Dependent variable: *CAR*		
Panel A. Lobbying measure	Expenses total/Revenues	Expenses total/Market cap.
Lobbying	-0.029***	-0.015***
	(-7.13)	(-3.29)
	Expenses total, 10 deciles	Company lobbying
Lobbying	-0.105***	-0.576***
	(-5.80)	(-2.85)
Panel B. Returns measure	Market-adjusted	FF 3 factor model
Lobbying	-0.064*	-0.100**
	(-1.81)	(-2.42)
Panel C. Industry definition	FF-12 industry	FF-49 industry
Lobbying	-0.167***	-0.132***
	(-3.73)	(-2.62)
Panel D. Placebo test, companies in unrelated industries	100 companies per bill	300 companies per bill
Lobbying	-0.028	-0.077
	(-0.24)	(-1.35)
Panel E. Lobbying data frequency	SOPR quarterly reports	CRP annual data
Lobbying	-0.363***	-0.254***
	(-7.33)	(-6.12)

Table 6: Company characteristics and "revolving door" lobbying

The table compares characteristics of lobbying companies that have a percentage of "revolving door" lobbyists over the previous Congress in the top tercile of the distribution (*High % revolvers*) with characteristics of other lobbying companies (*Low % revolvers*); and it also compares the non-lobbying competitor companies across these two groups. One observation corresponds to one company in a Congress. Panel A presents the comparison for the lobbying companies, Panel B presents comparison for the matched lobbying companies based on the nearest neighbor matching. Panel C presents comparison for the non-lobbying companies. *t*-statistics clustered by company are in parentheses. The symbols ***,** denote statistical significance at 1% and 5% levels. Table A1 describes all the variables.

Panel A. Lobbying companies	High % revolvers		Low % revolvers		(1)-(2)	*t*-stat
	Mean (1)	Obs.	Mean (2)	Obs.		
Market capitalization, $bn	19.26	341	24.41	605	-5.15	-1.58
Book-to-market	0.48	303	0.48	534	0.00	0.16
Profitability	0.28	303	0.27	534	0.00	0.13
Cash/Total assets	0.19	339	0.14	604	0.06	3.72***
Debt/Total assets	0.21	303	0.22	532	-0.01	-0.72
R&D/sales	0.09	303	0.05	534	0.04	2.29**
Panel B. Lobbying companies, matched	High % revolvers		Low % revolvers		(1)-(2)	*t*-stat
	Mean (1)	Obs.	Mean (2)	Obs.		
Market capitalization, $bn	16.89	303	17.02	303	-0.13	-0.04
Book-to-market	0.48	303	0.49	303	-0.01	-0.39
Profitability	0.28	303	0.29	303	-0.01	-0.50
Cash/Total assets	0.19	303	0.18	303	0.01	0.77
Debt/Total assets	0.21	303	0.22	303	-0.01	-0.37
R&D/sales	0.11	303	0.08	303	0.04	1.18
Panel C. Non-lobbying companies	High % revolvers		Low % revolvers		(1)-(2)	*t*-stat
	Mean (1)	Obs.	Mean (2)	Obs.		
Market capitalization, $bn	1.04	455	1.15	1,680	-0.11	-0.91
Book-to-market	0.57	387	0.58	1,531	-0.01	-0.43
Profitability	0.33	388	0.35	1,531	-0.02	-1.16
Cash/Total assets	0.19	455	0.19	1,681	-0.00	-0.18
Debt/Total assets	0.19	386	0.18	1,531	0.01	1.01
R&D/sales	0.09	388	0.06	1,533	0.02	1.24

Table 7: Restriction on"revolving door" lobbying

The table presents the regression estimates of cumulative abnormal returns (CARs) around bill approval on *Lobbying*, before and after the Barack Obama's 2009 executive order. The executive order restricts "revolving door" lobbying. One observation corresponds to one company on one new law in a Congress. *RV* denotes companies with percentage of "revolving door" lobbyists over the previous Congress in the top tercile of the distribution (*High % revolvers*), and their non-lobbying competitors. *After* is an indicator variable equal one for the 111^{th} Congress and further. The regressions use the data for the 109^{th}-113^{th} Congresses. t-statistics clustered by company are in parentheses. The symbols ***,** denote statistical significance at 1% and 5% levels. Table A1 describes all the variables.

Dependent variable: *CAR*	Lobbying companies	Lobbying companies matched	Non-lobbying companies
	(1)	(2)	(3)
Company lobbying × RV × After	-6.412**	-6.437*	6.204**
	(-2.29)	(-1.83)	(2.28)
Company lobbying × After	0.647	1.055	-0.685
	(0.32)	(0.34)	(-0.52)
Company lobbying × RV	3.783	4.792	-3.775
	(1.51)	(1.54)	(-1.54)
Company lobbying	-0.283	-0.967	-0.481
	(-0.16)	(-0.37)	(-0.50)
Observations	8,667	5,175	165,330
R^2	0.31	0.35	0.15
LB company × Cong. f.e.	Yes	Yes	
NLB company × Cong. f.e.			Yes
Bill f.e.	Yes	Yes	Yes

Table 8: Lobbying externalities and importance of votes

The table presents the regression estimates of cumulative abnormal returns (CARs) to the non-lobbying (NLB) companies around bill approval on *Lobbying*, on subsamples where companies' voting power is more important or less important. One observation corresponds to one company on one new law in a Congress. The set of fixed effects and control variables is the same as in Table 2, Panel A, specification (4). Δ *employees* is a difference between the number of employees of the lobbying company and of the non-lobbying company at the start of a given Congress. Panel A sorts the non-lobbying companies by Δ *employees* within a given Congress and a state where both the non-lobbying and the lobbying companies are located. It presents the estimates on observations in each quartile (the *Top*, *Q3*, *Q2* and the *Bottom*). Panel B presents the estimates for *Battleground electoral areas*, which are congressional districts (states) where a House member (senator) won/lost in general elections with 45-55% votes, and where both the non-lobbying and the lobbying companies are located. *Non-battleground areas* stand for all other districts (states). Panel B presents the estimates for *Sponsor's electoral areas*, which are congressional districts (states) where a bill's sponsor is a House member (senator) seeks re-election and where the companies are located. *Not sponsor's area* stands for all other districts (states). Definition of congressional districts accounts for changes in districts' geographic boundaries. *t*-statistics clustered by company are in parentheses. The symbols ***,** denote statistical significance at 1% and 5% levels. Table A1 describes all the variables.

Dependent variable: *CAR*	Top	Q3	Q2	Bottom
Panel A: Δ *employees*	(1)	(2)	(3)	(4)
Lobbying	-0.972***	-0.644**	0.092	-0.055
	(-3.86)	(-2.07)	(0.27)	(-0.16)
Controls	Yes	Yes	Yes	Yes
Observations	5,510	4,952	4,689	4,477
R^2	0.25	0.28	0.31	0.29
NLB company × Cong. f.e.	Yes	Yes	Yes	Yes
F-test for difference in coefficients on Lobbying	Top (1) = Bottom (4) 3.67*			
Panel B: Elections	Battleground electoral area		Non-battleground area	
	High Δ employees (1)	Low Δ employees (2)	High Δ employees (3)	Low Δ employees (4)
Lobbying	-1.558***	-0.291	-0.542**	0.101
	(-3.52)	(-0.61)	(-2.07)	(0.37)
Controls	Yes	Yes	Yes	Yes
Observations	2,246	2,142	6,484	6,509
R^2	0.23	0.25	0.27	0.28
NLB company × Cong. f.e.	Yes	Yes	Yes	Yes
F-test for difference in coefficients on Lobbying	High Δ employees (1) = (3) 3.29*			

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Panel C: Bill sponsor's electorate	Sponsor's electoral areas		Not sponsor's area	
	High Δ employees (1)	Low Δ employees (2)	High Δ employees (3)	Low Δ employees (4)
Lobbying	-4.262**	0.867	-0.444*	0.152
	(-1.98)	(0.50)	(-1.76)	(0.69)
Controls	Yes	Yes	Yes	Yes
Observations	235	236	7,492	7,439
R^2	0.22	0.13	0.03	0.03
Cong. f.e.	Yes	Yes	Yes	Yes
F-test for difference in coefficients on Lobbying	High Δ employees (1) = (3) 3.40*			

Table 9: Combined voting power of non-lobbying companies

The table compares the combined number of employees of the non-lobbying companies with the number of employees of their lobbying competitor company (*Employee ratio*) within states, congressional districts, battleground electoral areas, and per bill. It tests *Employee ratio* = 1, and reports the averages and *t*-statistics clustered by company. One observation in this table corresponds to one lobbying company located in the corresponding area (specifications (1)-(3)), or lobbying on the bill (specification (4)). The symbols ***,** denote statistical significance at 1% and 5% levels. Table A1 describes all the variables.

	State	Congressional district	Battleground electoral area	On a bill
	(1)	(2)	(3)	(4)
Employee ratio	9.626***	3.368***	1.790***	6.425***
	(7.70)	(4.99)	(5.15)	(7.35)
Observations	1,434	803	253	784

Table 10: Lobbying externalities and membership in trade associations

The estimates in this table are obtained on a sample of non-lobbying companies, which are members of the top 30 trade associations. It presents the regression estimates of cumulative abnormal returns (CARs) to the non-lobbying (NLB) companies around bill approval on *Lobbying* (Panel A) and on *Trade associations' lobbying* (Panel B). One observation corresponds to one company on one new law in a Congress. The set of fixed effects and control variables is the same as in Table 2, Panel A, specification (4). In both panels specifications (1) and (2) show the estimates for the non-lobbying companies, which belong to trade associations with high (above median) and low (below median) share of member companies that lobby on the bill individually, based on companies' cash flow measured with EBITDA for the last fiscal year before the start of Congress (*% Members lobbying, Cash flow*). Specifications (3) and (4) repeat the estimates using the shares based on the companies' market capitalization (*% Members lobbying, Market cap.*). *t*-statistics clustered by company are in parentheses. The symbols ***,** denote statistical significance at 1% and 5% levels. Table A1 describes all the variables.

Dependent variable: *CAR* *Panel B: Effect of other members' individual lobbying*	% Members lobbying, Cash flow		% Members lobbying, Market cap.	
	High (1)	Low (2)	High (3)	Low (4)
Lobbying	-0.820***	1.229***	-0.596**	0.945***
	(-3.17)	(5.47)	(-2.13)	(4.12)
Controls	Yes	Yes	Yes	Yes
Observations	10,227	10,110	10,190	10,189
R^2	0.16	0.19	0.16	0.19
NLB company × Cong. f.e.	Yes	Yes	Yes	Yes
F-test for difference in coefficients on Lobbying	(1) = (2) 14.60***		(3) = (4) 30.17***	
Panel B: Effect of trade associations' lobbying	% Members lobbying, Cash flow		% Members lobbying, Market cap.	
	High (1)	Low (2)	High (3)	Low (4)
Trade associations' lobbying	-0.350	1.504***	-0.098	0.953***
	(-1.15)	(4.62)	(-0.29)	(3.03)
Controls	Yes	Yes	Yes	Yes
Observations	10,227	10,110	10,190	10,189
R^2	0.16	0.19	0.16	0.19
NLB company × Cong. f.e.	Yes	Yes	Yes	Yes
F-test for difference in coefficients on Trade association's lobbying	(1) = (2) 4.35**		(3) = (4) 14.50***	

A. Appendix

Table A1: Description of variables

The table describes the variables used in the analysis. The data on lobbying activity are from Senate's Office of Public Records (SOPR) and Center for Responsible politics (CRP). The data on bill characteristics are from Library of Congress (LOC). Sample period covers 1999-2016 years (106^{th}-114^{th} Congresses). The data on company financial characteristics and number of employees are from CRSP-Compustat, taken at the start of each Congress. All the dollar values are expressed in millions of 2015 U.S. dollars. Non-lobbying competitor companies do not lobby during the Congress and operate in the same industry with the lobbying companies based on the product similarity of Hoberg and Phillips (2010, 2016). The measure of product similarity between companies is downloaded from the website of Gerard Hoberg and Gordon Phillips, URL `http://hobergphillips.usc.edu/`.

Variable	Description	Source
Lobbying characteristics		
Company expenses	Lobbying expenses made by a publicly listed company on the bill.	SORP, CRP
Company lobbying	Natural logarithm of one plus *Company expenses*.	SORP, CRP
Expenses total	The aggregate lobbying expenses made by all the publicly listed companies on the bill.	SORP, CRP
Lobbying	Natural logarithm of one plus *Expenses total*.	SORP, CRP
Lobbying, q-1	Lag of *Lobbying* computed over a calendar quarter.	SORP, CRP
Expenses total/Revenues	*Expenses total* scaled by their combined revenues (Compustat item *revt*).	SORP, CRP, Compustat
Expenses total/Market capitalization	*Expenses total* scaled by their combined market capitalization (CRSP-Compustat items $rpcc\_f \times csho$).	SORP, CRP, CRSP, Compustat
Expenses total, 10 deciles	Ten deciles of *Expenses total*.	SORP, CRP
RV	Indicator variable equal one if a number of "revolving door" lobbyists (former government officials) over the total number of lobbyists that a company hired in the previous Congress is in the top tercile of the distribution, and zero otherwise	CRP
After	Indicator variable equal one for the 111^{th} Congress and the subsequent Congresses, and zero otherwise.	SORP, CRP
Trade associations' lobbying	The aggregate lobbying expenses made by all the trade associations on the bill over a Congress.	SORP, CRP
Bill characteristics		
Bill length	Natural logarithm of a number of words in the bill text.	LOC
Crowded bill	Indicator variable equal one if a hundred or more companies made above zero lobbying expenses on the bill.	SORP, CRP

Table A1 continues on the next page

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Variable	Description	Source
Bill characteristics		
Bill approval	Indicator variable equal one if the bill passed by vote in both chambers (the Senate and the House of Representatives) and was signed by the President, and zero otherwise.	LOC
Bill amendment	Indicator variable equal one if the bill was amended at least once in a given quarter, and zero otherwise.	LOC
Returns		
CAR $[-10, 10]$	Cumulative abnormal return around passage of a bill. Abnormal returns are computed relative to the market model (or market-adjusted, or computed relative to the Fama-French 3 factor model), and cumulated over the 21-day event window.	LOC, CRSP
Runup $[-50, -11]$	Abnormal returns cumulated over 40 days prior to the event window.	LOC, CRSP
Company characteristics		
Market capitalization	Share price ($rpcc\_f$) multiplied by the number of common shares outstanding ($csho$).	CRSP, Compustat
Book-to-market	Book value of equity divided by market capitalization, computed following Fama and French (2001).	CRSP, Compustat
Profitability	Gross profits, which are total revenues ($revt$) – cost of goods sold ($cogs$), scaled by lag of total book assets (at).	Compustat
Cash/Total assets	Cash and short-term investments (che) scaled by total book assets (at).	Compustat
Leverage	Total of long-term debt ($dltt$) and debt in current liabilities (dlc) scaled by total book assets (at).	Compustat
R&D/Sales	Research and development expenses (xrd) scaled by total net sales ($sale$) if available, and zero otherwise.	Compustat
Number of employees	Total number of people employed by the company and its subsidiaries (emp), expressed in thousands (K).	Compustat
Δ employees	Difference between the number of employees (emp) of a lobbying company and its non-lobbying competitor company.	Compustat
Employee ratio	Aggregate number of employees (emp) of non-lobbying companies within a state, or congressional district, or on a bill, divided by a number of employees of their lobbying competitor company located on in the same area, or lobbying on the bill.	Compustat

A.1. Matching lobbying data with CRSP

To identify which names of the lobbying organizations in the Senate's Office of Public Records (SOPR) and the Center for Responsive Politics (CRP) belong to publicly listed companies, I match them with the full universe of names of the publicly listed companies in the Center for Research in Security Prices (CRSP)-Compustat universe. From the CRP-Compustat I use the full list of names associated with a given permanent company identifier (PERMCO) at any point in time. This helps me to identify all the names associated with a given company in the lobbying data. For some companies the CRP omits the information on lobbied bills, and as a result, those companies are not in my final sample. Also, I use the full list of names in SOPR and CRP, including the names of the organizations lobbying on bill that did not pass, or ones with missing bill information in the CRP early sample years. This helps to decrease a possibility of a type II error of falsely classifying lobbying firms as non-lobbying.

I perform matching in three stages. First, I clear both SOPR and CRP and CRSP names from entity indicators such as "Inc.", "Corp." or "L.L.C". Second, I find all the exact matches. Third, I perform fuzzy-match on the remaining manes using the standard SAS GOMPGED function. The function computes generalized edit distance between two names, approximating the cost of converting one string into the other by replacing the characters. I manually check accuracy of the best matches (one with minimum cost of conversion).

A.2. Government entities targeted by lobbying

The list below presents government entities that were targeted by lobbying the most, based on how frequently their names occur in the lobbying reports filed with the Senate's Office of Public Records (SOPR) in 2016 .

U.S. House of Representatives
U.S. Senate
The White House
Department of Health and Human Services (HHS)
Centers for Medicare and Medicaid Services (CMS)
Environmental Protection Agency (EPA)
Office of Management and Budget (OMB)
Department of the Treasury
Department of Agriculture (USDA)
Department of Defense (DOD)
Department of Transportation (DOT)
Department of Energy (DOE)
Department of the Interior (DOI)
Department of Commerce (DOC)
Food and Drug Administration (FDA)
Department of Labor (DOL)
Department of Homeland Security (DHS)
Department of State (DOS)