

Lobbying as a Hedge on Political Risk: When Size Matters

by

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Abstract

I develop a three-period asset pricing model with heterogeneity in firms size and a government that introduces a policy distortion. I find that large firms can better hedge the political uncertainty associated with this policy change through lobbying, which leads them to earn lower expected returns. I provide two strands of empirical evidence consistent with the model predictions. The first one looks at the behavior of a blue versus red industries around the unexpected results of the 2016 US Presidential election. The second one uses portfolio sorting and double-sorting to reach consistent conclusions.

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0.1 Introduction

During the past few years, political events have gained an important position in the discussion of stock markets performance worldwide, whether it was about the 2011 sovereign debt crisis in the Eurozone, the UK's decision to leave the European Union or the election of the US president in 2016. Moreover, recent political decisions have been credited with an important impact on stock performance, such as the 2017 US corporate tax cut, or the tax incentives given to US firms to bring foreign profits in the country. These events and policies are likely to weigh on firms' risk, and yet our ability to understand these effects and how to hedge against them remains very limited. Meanwhile, corporate lobbying has risen steadily over the past two decades, in order for firms to receive favorable outcomes on different types of policies, from taxation to a specific market regulation.

In this paper, I study the use of lobbying as a hedge against political risk, and the conditions under which this hedge is efficient. I present a three-period model where lobbying requires a potentially high fixed cost. The government comes up with a bill introducing a distortion, and each firm decides whether or not it is profitable to pay the fixed cost and lobby in order to reduce it. In equilibrium, it is harder for a small firm to lobby as there are fewer returns to scale when paying the fixed cost. Hence, large firms lobby more, or buy more protection to political risk, which makes them less risky and imply lower returns.

On the empirical side, I gather lobbying data along with accounting and stock returns in order to form a comprehensive dataset of firms characteristics and returns. Firstly, I use the 2016 Presidential election and show that high lobbying firms in red industry

benefitted disproportionately from the election, which is consistent with their lobbying contribution becoming more efficient and the fact that they lobby proportionately more since they have the scale to effectively hedge against political risk. The reverse is true for high lobbying firm in a blue industry. Secondly, after forming a political risk factor from a long-short portfolio, I find that the exposure of firms to this factor is monotonically decreasing in their lobbying contribution. To further strengthen this result, I double-sort firms into market equity and lobbying terciles, and find that only for large firms is lobbying an efficient hedge against political risk, which is consistent with the model predictions.

This paper is related to a growing literature at the intersection of asset pricing and political economy. [26] solve a model in continuous time that deals with two kinds of uncertainties: uncertainty about the impact of a policy and uncertainty about whether the government will change its policy. In general, the government tends to change its policy when the current one is perceived as sufficiently unfavorable. At the announcement of a policy change, they find two competing forces: stock prices tend to go up as the new policy is likely to have a more favorable impact on profitability. On the other hand, discount rates tend to increase as the new impact uncertainty is higher, which decreases stock prices. Overall, they find that the second effect is likely to dominate, and stock prices tend to decrease at the announcement of a new policy. Building on this model, [27] consider the political cost associated to a set of potential policies, and find that a new policy is likely to be adopted if its political cost is lower and its perceived impact on firms' profitability is higher. More interestingly, they find that political shocks (due to learning about political costs) carry a risk premium, which is higher in bad conditions as it is precisely when new policies are likely to be adopted. Additionally, the policy impact uncertainty also carries a risk premium. To

empirically check the pricing of political uncertainty, [23] rely on the option market and isolate political uncertainty around key elections and summits. They find that options with maturity right after such events tend to be more expensive than options with maturity right before these events, consistent with the fact that the former provide protection against the political uncertainty associated with those events.

Another strand of literature has developed on the effect of partisan politics on the stock market. In an influential paper, [29] showed that the stock market is significantly higher under a Democratic president than under a Republican president, with a striking difference of 9% for the value-weighted market portfolio. They label it as the "presidential puzzle", as they could not find any business cycle or risk explanation to this fact. [3] use a measure of industry exposure to government spending, and show that the political cycle is reflected in asset prices: under democratic presidencies, firm with more exposure to government tend to have higher returns than firms with less such exposure, while the opposite holds true under Republican presidencies. This shows that this presidential puzzle is stronger for firms exposed to government spending. In a political cycle model with time-varying risk aversion, [28] provide an explanation to this phenomenon: a Democratic president tends to be elected when risk aversion is high and hence when average-skilled individuals tend to work for the government instead of becoming entrepreneurs (which is risky), and hence demand higher redistribution, while a Republican president tend to be elected in the opposite situation. This has a direct application for asset prices as an investor with higher risk aversion is going to demand a higher risk premium than an investor with low risk aversion, effectively generating the presidential puzzle. On the other hand, [25] showed that households' political color has a strong effect on investment behavior. In particular, as a result of the 2016 US presidential election, Republican voters increased

their exposure to the stock market relative to Democrats, indicating that these two groups have different beliefs (and different ways to update them).

On the measurement side, political uncertainty is not easy to quantify. The main indices the literature has used were built by [2]. They constructed standardized indexes from newspaper reading, focusing on the presence of keywords associated with political uncertainty, which are shown to spike up around elections, wars or severe financial distress (such as the Lehman Brothers bankruptcy). In addition, [19] developed a firm-specific measure of political uncertainty, which represents the share of their quarterly earnings conference calls devoted to political uncertainty. They show that, when this measure is high, firms tend to invest and hire less, and lobby more the government and Congress.

This paper also builds on a literature at the intersection of economics and political science which aims at understanding the many reasons why special interest groups influence the government, often times through lobbying expenditures. It is generally accepted that the effect of lobbying contributions is significant in many sectors. In a seminal paper, [17] show that firms can lobby the government to get protection through trade policy. Kang (2016) shows the efficiency of lobbying in the energy sector, while de Figueiredo and Silverman (2006) show the same for universities' lobbying. [1], [10] and [20] show that firms that lobby more are more likely to receive stimulus package during the great recession (and banks in particular), which gives those firms protection against downside risk. [7] and [30] show that lobbying leads to reduced regulatory supervision, while [11] provides more recent evidence of this phenomenon in the telecommunication sector. De Soto (1989) shows that lobbying contributions and political connections can lead to tax breaks. [21] shows that politi-

cally connected firms benefits from increased credit through capital controls. Beyond those firm-specific impact, [9] show that lobbying can lead to more job creation as an "exchange of favors" with the government. Finally, [8] show that media coverage is the counterbalance to those political connections which makes voters aware of such practices.

On the intersection between asset pricing and lobbying, [6] and [4] find that lobbying adds to firm value. The first one shows that the more candidates are supported by a firm, the higher its abnormal returns are in the following year. The second one shows that a negative shock to the ability to lobby leads to a loss in firm value for the firms that lobby the most. Finally, [18] shows that firms that lobby more as a fraction of their assets earn higher returns. This is because such a high ratio is a signal of firm incumbency in its industry, and hence such a firm is exposed to additional regulatory risk.

Finally, this paper is also related to the literature on the benefits of government insurance for large financial institutions. [15] find that large banks have lower returns than small banks, arguably because of the fact that the government is not willing let large banks fail, and hence is absorbing some left-tail risk. Then, they use the second principal component of portfolio sorted bank stock returns and use it as a factor to explain bank stock returns. [22] empirically shows that during the crisis, the price of out-of-the-money put options on individual banks increased way more than the price of out-of-the-money put options on the financial sector as a whole. This in line with a government guarantee of the financial sector (and hence of big financial institutions). Finally, [16] show that large financial institutions enjoy a lower cost of equity, but the magnitude of the effect depends on the country's characteristics. They find that

the effect is particularly strong in countries where the banking sector is highly concentrated and the government is fiscally strong, while the effect is small for countries with strong corporate governance and high bankruptcy costs.

The rest of the paper is organized as follows. Section 2 presents the theoretical model, Section 3 empirically tests the prediction of the model and Section 4 provides concluding remarks.

0.2 The Model

I present a three-period model in which a continuum of firms face a common distortion introduced by the government. Each firm has a given size and decides whether to lobby in order to decrease the effect of the distortion on itself. The firms' profits are distributed to shareholders at the end of the timeline.

0.2.1 The Setting

In this model, a representative agent can invest in risky assets, stocks of companies labeled by $i \in [0, 1]$, and a risk-free bond yielding r . Each firm of the continuum has size n_i , which can be thought of as the number of production lines. Hence, given a labor choice l_i , a productivity a_i and in the absence of distortion and lobbying, a firm's profit writes $\bar{\Pi}_i = n_i e^{a_i} l_i^\alpha - n_i w l_i$, where w is a wage that insures full employment at equilibrium and a_i is the productivity of firm i distributed as $\mathcal{N}(-\frac{1}{2}\sigma_a^2, \sigma_a^2)$.

The government introduces a distortion τ distributed uniformly between $0.5 - \bar{\tau}$ and $0.5 + \bar{\tau}$. Meanwhile, each firm i decides whether it wants to lobby or not, and how much it invests in lobbying. The cost of lobbying is the same for all firms and writes

$c(x_i) = c_0 + c_1 x_i$, where x_i is the amount of lobbying chosen by firm i , c_0 is the fixed cost of lobbying (which can be thought of as the cost of setting up a team in Washington DC to represent the firm's interests) and c_1 is the cost of an extra unit of lobbying (which in turn represents the cost of an extra event where the lobbying team would present the firm's interests to congress or government representatives). Lobbying an amount x_i reduces the firm's distortion by $Rf(x_i)$, with $f(x_i) < 0$, $f'(x_i) < 0$ and $f''(x_i) > 0$, and R is the degree of efficiency of the lobbying expenditures which is assumed to be a constant between 0 and 1. R depends typically on the political color of the current administration, and which kind of firms (or industries) it is likely to listen to and establish political connections with. In the following, I take $f(x_i) = \tau(e^{-x_i} - 1)$. Thus, profits write:

$$\begin{aligned}\Pi_i^L &= n_i(1 - \tau(1 - R) - \tau R e^{-x_i})e^{a_i}l_i^\alpha - n_i w l_i - c_0 - c_1 x_i \\ \Pi_i^{NL} &= n_i(1 - \tau)e^{a_i}l_i^\alpha - n_i w l_i\end{aligned}$$

where Π_i^L denotes the profit when the firm chooses to lobby and Π_i^{NL} the one when the firm does not lobby. Intuitively, c_0 vastly exceeds c_1 such that small firms, which do not have the scale to spread lobbying benefits and costs across production units will choose not to lobby at all.

A natural objection to this way to model lobbying cost would be for firms to form a lobbying group and share the fixed cost. The idea is that this could be the case, but only if the government bill is about the core business of the firm. In this case, it is likely that firms with the same core business will be impacted in a very symmetric way and hence can work together to decrease the impact of the distortion. However, the lobby group is not going to lobby on all issues, as the member firms don't necessarily

have aligned interest on issues not directly related to their core business. Thus, a potential extension to this model would be that small firms in the same sector can share the fixed cost if and only if the policy is about their core business. However, the same mechanism would prevail: on average it is more difficult for a small firm to lobby (as it can not always share the fixed cost). Suggestive evidence of this idea is presented in the empirical section.

0.2.2 The Timeline

The timeline of the model is summarized in Table 1.

Table 1: Model Timeline Summary

Time	Actions
$t = 0$	Investment decision by the representative agent Labor decision by each firm $i \in [0, 1]$
$t = 1$	The government chooses the distortion τ Firms choose whether to lobby or not, and how much to lobby
$t = 2$	Profits are distributed as liquidating dividends

At $t=0$: The agent maximizes her CARA utility over wealth at $t = 2$:

$$U = -\mathbb{E}_0 e^{-\gamma W_2}$$

Deriving the first order condition and imposing market clearing, one can derive the

price of each firm to be $p_i = \frac{\mathbb{E}_0 \left[\Pi_i e^{-\gamma \int_0^1 \Pi_i di} \right]}{(1+r) \mathbb{E}_0 \left[e^{-\gamma \int_0^1 \Pi_i di} \right]}$, which gives the following expected

return for each firm:

$$\bar{r}_i = \frac{(1+r) \mathbb{E}_0 \left[e^{-\gamma \int_0^1 \Pi_i di} \right] \mathbb{E}_0[\Pi_i]}{\mathbb{E}_0 \left[\Pi_i e^{-\gamma \int_0^1 \Pi_i di} \right]} - 1$$

Note that here Π_i does not have an upper-script L or NL as the investor does not know yet if the firm is going to lobby or not. Meanwhile, firm i maximizes its expected profit as of $t = 0$ (i.e. before firms know the distortion put in place by the government, and hence before firms make their lobbying decision) with respect to labor to find its labor demand, which I assume is met by a perfectly elastic labor supply.

At $t=1$: The government introduces its distortion rate τ that is immediately observed by the firms. As a consequence, firms make their lobbying decision by maximizing

$$\begin{aligned} \Pi_i &= \mathcal{I}_i \times \mathbb{E}_1[n_i(1 - \tau(1 - R) - \tau R e^{-x_i})e^{a_i l_i^\alpha} - n_i w l_i - c_0 - c_1 x_i] \\ &+ (1 - \mathcal{I}_i) \times \mathbb{E}_1[n_i(1 - \tau)e^{a_i l_i^\alpha} - n_i w l_i] \end{aligned}$$

with respect to \mathcal{I}_i (the lobbying dummy) and x_i (the lobbying amount). Labor l_i is already known but the productivity a_i is not realized yet.

At $t=2$: Productivity a_i is realized for each firm i and its profits are distributed as liquidating dividends to shareholders (here the representative investor).

0.2.3 Model Predictions

The lobbying choice of firm i writes

$$x_i = \log \left(\frac{n_i \tau R l_i^\alpha}{c_1} \right)$$

which leads to the following proposition:

Proposition 1

- *The decision to lobby \mathcal{I}_i is a weakly increasing function of firm size n_i for a given τ*
- *For firms that choose to lobby, the lobbying amount x_i is increasing in the firm size n_i*
- *For firms that choose to lobby, the ratio of lobbying amount to size x_i/n_i is decreasing in the firm size n_i*

The first bullet point can be verified numerically, while the last two follows directly from the expression of x_i . Intuitively, at $t = 1$, big firms are going to make the decision to lobby more easily with respect to the government policy τ they observe. This is because there are more returns to scale in spending the fixed cost to lobby: the distortion is decreased for n_i production units, but the cost of lobbying does not vary with n_i . Hence, even for a relatively small τ , a large firm would choose to lobby, but a small firm would not. This gives large firms a greater ability to protect themselves from political risk. Thus, this should lead to lower returns for larger firms¹.

The model is simulated numerically using the calibration presented in Table 2. N_n

¹Note that this along with the third bullet point of the Proposition generates [18]’s results

and N_τ refers to the number of points used to approximate the distributions of the government policy τ and the firm size n .

Table 2: Baseline Calibration

Variable	Value
γ	2
α	0.66
r	0
σ_a	0.1
c_0	0.1
c_1	0.01
R	1
N_n	30
N_τ	30

Several $\bar{\tau}$ are used, as it governs the amount of political uncertainty. Recall that τ is distributed uniformly between $0.5 - \bar{\tau}$ and $0.5 + \bar{\tau}$. Hence, its mean is constant equal to 0.5, but its variance is $\sigma_\tau^2 = \frac{\bar{\tau}^2}{3}$. Thus, the higher $\bar{\tau}$, the higher the amount of political risk present in the model.

Figure 0-1 confirms the statements of Proposition 1 and is derived from the expression of x_i . When a firm decides to lobby, its lobbying amount is increasing in τ , which means that lobbying is indeed used as a mitigator against a high distortion. Moreover, for any τ , the lobbying amount of a large firm is greater than the lobbying amount of a smaller firm. This confirms that for any distortion, large firms are more able to mitigate government distortions than smaller firms.

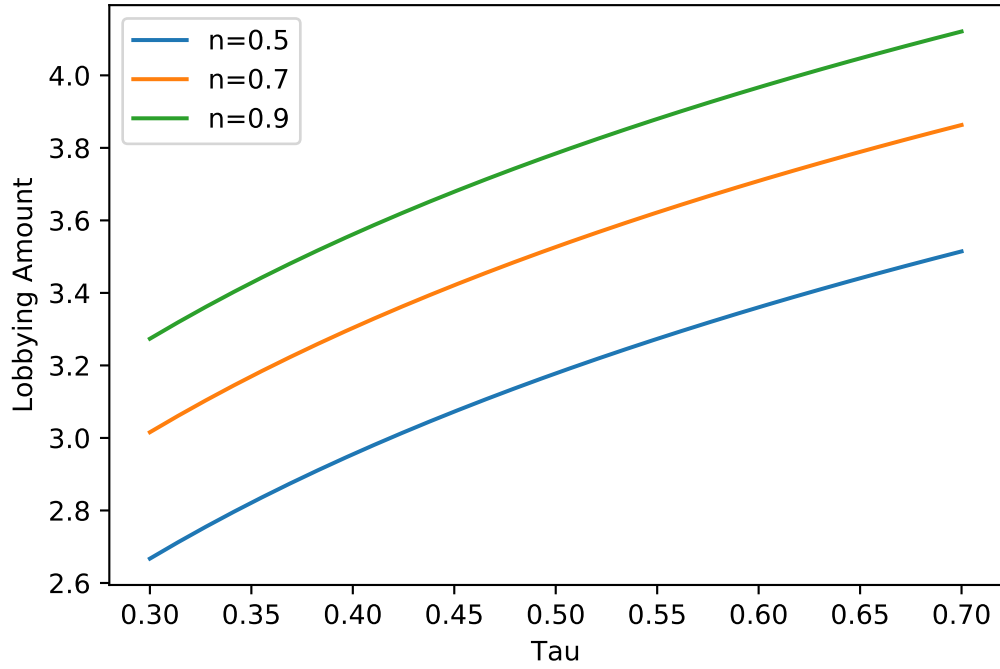


Figure 0-1: Lobbying amount by distortion τ for several firm size ($\bar{\tau} = 0.2$ is used)

Figure 0-2 presents the expected returns of each firm according to its size for two policy regimes: a low policy variance ($\bar{\tau} = 0.15$) and a high policy variance ($\bar{\tau} = 0.20$). First, note the flatness of the curve for small firms: these are the firms that will never lobby as the fixed cost is too high. For those firms, the political risk is the same, which implies equal expected returns.

For larger, firms, one can see that expected returns are decreasing. This is because of the reasons mentioned above: the larger the firm, the easier it is to pay the fixed cost and lobby. This provides protection for big firms in case of a bad policy event: they will just lobby to mitigate the impact of the bill. And the more so, the larger the firm

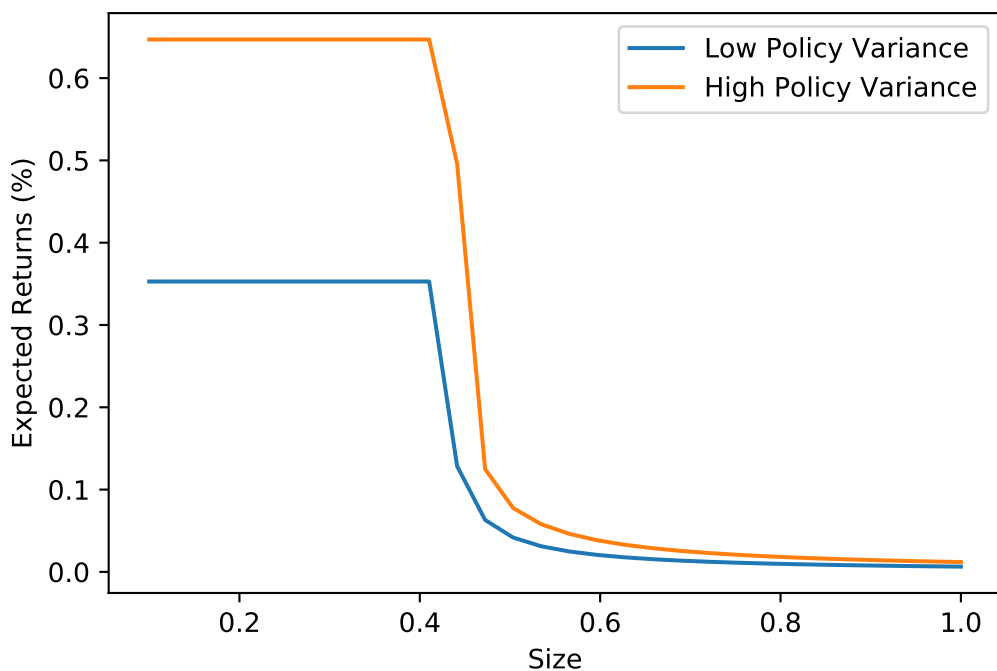


Figure 0-2: Expected Returns of firms by size for two policy regimes

is. This ability to hedge political risk translates into lower expected returns.

One should also note that this effect is more pronounced for higher variance policy regimes (higher $\bar{\tau}$). This is because there is more policy risk to hedge. Hence, lobbying is more crucial as a tool (from a risk-averse perspective) to hedge policy risk, which induces a steeper decline of expected returns coming from lobbying.

Finally, I present an analysis of the effect of the lobbying efficiency parameter R . Figure 0-3 presents the lobbying contribution differential between a full lobbying effi-

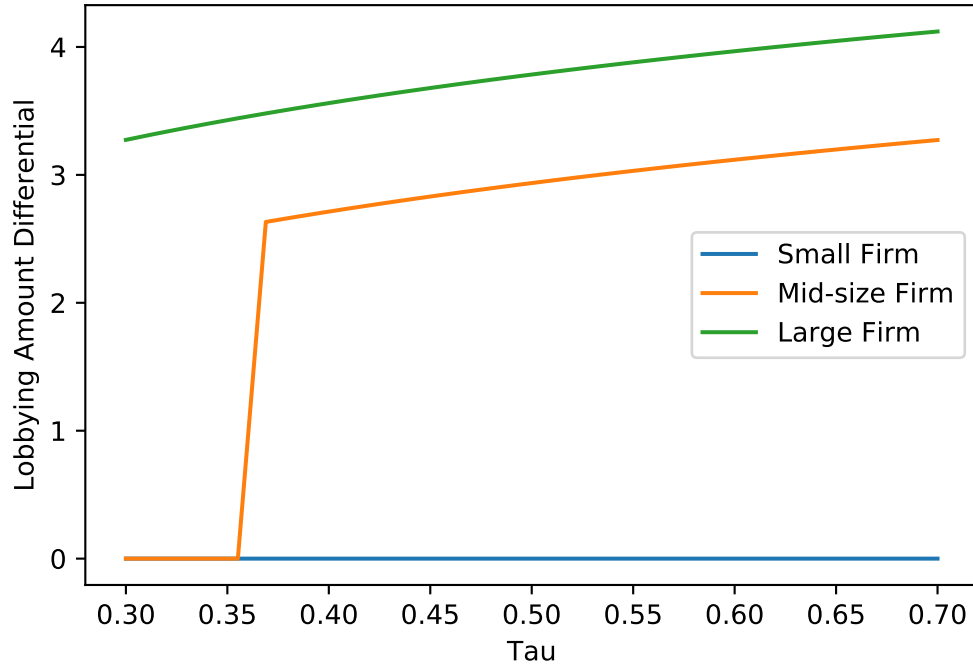


Figure 0-3: Lobbying Expenditures Differential between a Full Lobbying Efficiency regime ($R = 1$) and a Low Lobbying Efficiency Regime ($R = 0.5$)

ciency regime ($R = 1$) and a low lobbying efficiency regime ($R = 0.5$)². For a small firm, this does not have any effect: because of the fixed cost, the firm never engages into lobbying expenditures no matter its efficiency. For a middle size firm, we see an effect, but only for high τ : this is because the middle size firm will lobby only in the case of a high distortion, and hence only in those states of the world will it feel the efficiency differential. Finally, for large firms, we see that the difference is high in all states of the world (since large firms do lobby in all states). Thus, if a shock in R occurs, we should expect a stock price reaction increasing in the size/lobbying contributions of the firm.

²I.e. the difference between the x_i under $R = 1$ and the x_i when $R = 0.5$ for a given firm i

0.3 Empirical Evidence

In this section, I present two sets of empirical evidence consistent with the model. Firstly, following a political shock, firms whose lobbying expenses become more efficient earn higher returns following the shock. Secondly, I also document that large firms, which lobby a lot, manage to hedge political risk compared to those which lobby less.

0.3.1 The Data

For my empirical analysis, I use data from various sources. The primary source comes from the LobbyView project detailed in [24], which gives the firm-specific lobbying amount spent as well a set of issues the bill targeted by the lobbying expenditures covered. The dataset starts in 1999, when the Lobbying Disclosure Act became effective, and ends in the fourth quarter of 2017. Overall, I have lobbying data for 2288 firms (i.e. 2288 firms appear at least for one semester in the dataset). Lobbying expenditures are reported every six months before 2007 and every three months after that. Thus, lobbying expenditures are aggregated at the semester level to be consistent throughout the sample.

The rest of the data includes individual stock returns from CRSP, accounting data from Compustat, factor data from Kenneth French's website and firm-level political risk measures from [19].

0.3.2 The structure of Lobbying expenditures

In the model, it is assumed that lobbying incurs a fixed cost, which can be sufficiently high to deter relatively small firms from lobbying at all. As argued above, a natural counter-argument is to say that small firms can form lobby groups in order to share the fixed cost and lobby. However, it is unlikely that small firms can form lobby groups and agree on any issue concerned with a bill discussed by Congress. In particular, small firms in a given industry can probably agree on issues immediately related to their core business, and form a lobby group to have their point taken into account in this area, but not on every issues discussed by Congress. A good example of that phenomenon would be the National Farmers Union. It represents several hundred thousands of family farms and ranches and is tasked with influencing agriculture-related legislation, but not other parts of the legislation.

To address this point, I sort firms into total lobbying expenditures quintiles for each semester, and compute the average number of issues that was lobbied on by the average firm in each quintile-semester. Figure 0-4 presents the graphs for each quintile (1 represents the quintile that lobbies the least and 5 the quintile that lobbies the most). As one can see, at any point in time, the higher the quintile is, the more issues are lobbied by the average firm, and it is especially striking for the top lobbying spenders. This provides support to the idea that smaller firms lobby on more targeted issues than larger firms. Hence, if the lobby group story is at play, it only works for a small sets of issues, most likely related to the core business of the firms. Another interpretation to this graph would be that any issue requires a fixed cost to lobby on (e.g. because one needs to set up a team with expertise on the topic), and hence small firms can only afford to lobby on a restricted sample of issues. In any case, the graph provides

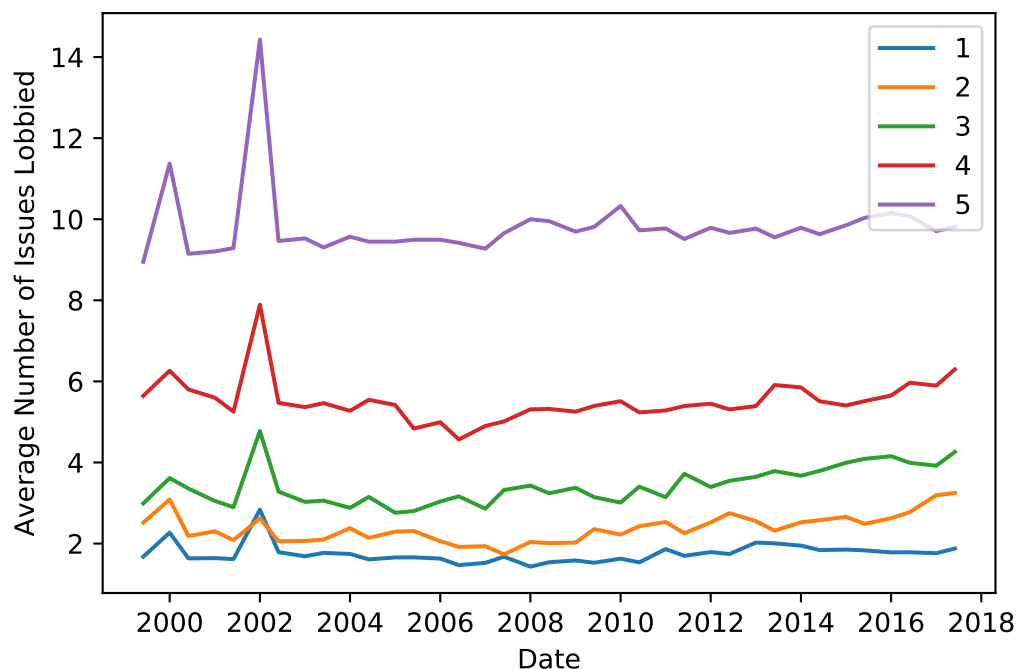


Figure 0-4: Average number of Issues lobbied by a firm in a given Lobbying Portfolio and Semester

suggestive evidence to the idea that low lobbying spenders restrict themselves on a small set of issues and cannot influence the whole spectrum of public policy.

0.3.3 A Political Shock: The 2016 US Presidential Election

In the model section, it was shown that the lobbying efficiency parameter R is disproportionately important for large firms that lobby extensively. Indeed, they are the firms that make the more use of political connections and that lobby in all states of the world. The lobbying efficiency is likely to depend on the political agenda of the sitting administration: typically, a red industry is likely to draw extensive benefits from its political connections to a republican administration compared to a democratic admin-

istration, and vice versa for a blue industry. Hence, when a political shock occurs, say a political shock favorable to red industries, the stock price reaction of high lobbying red firms should be higher than the one for low lobbying red firms, and vice versa for blue firms.

To test this idea, I use the 2016 US presidential election, which is used as an unexpected political shock ("close to an ideal experiment") in [25]. This political switch was a very public event and involved a clear change between the former Obama administration and the expected winner Clinton agenda on one side, and the Trump administration and agenda on the other side. I use health care firms as red firms, as those are favored by low regulation and state intervention in medical drugs pricing and reimbursement. On the other hand, I use utilities firms as blue firms as they are part of the public service sphere and benefit from state-sponsored investment in infrastructure. Both classifications are determined by SIC codes from Kenneth French's website.

For each of the two industries, I sort firms according to their lobbying expenditures on the election semester into terciles, and I compute the market value of each of those six portfolio during an 10-day window event study around election day (November 8 2016). The six market values are normalized so that they all equal 100 on November 8 at closure. Figure 0-5 presents this study. Solid lines refer to health care firms ("HC") while dashed lines refer to utilities firms ("UT"). Portfolios 1 refer to the firms that lobby the least and portfolios 3 refer to the firms that lobby the most.

First of all, one can see that there are very similar trends prior to election day (represented by the vertical black line on the graph), indicating that the election is really the trigger of what happens next. Then, on the red industry (health care) side, the

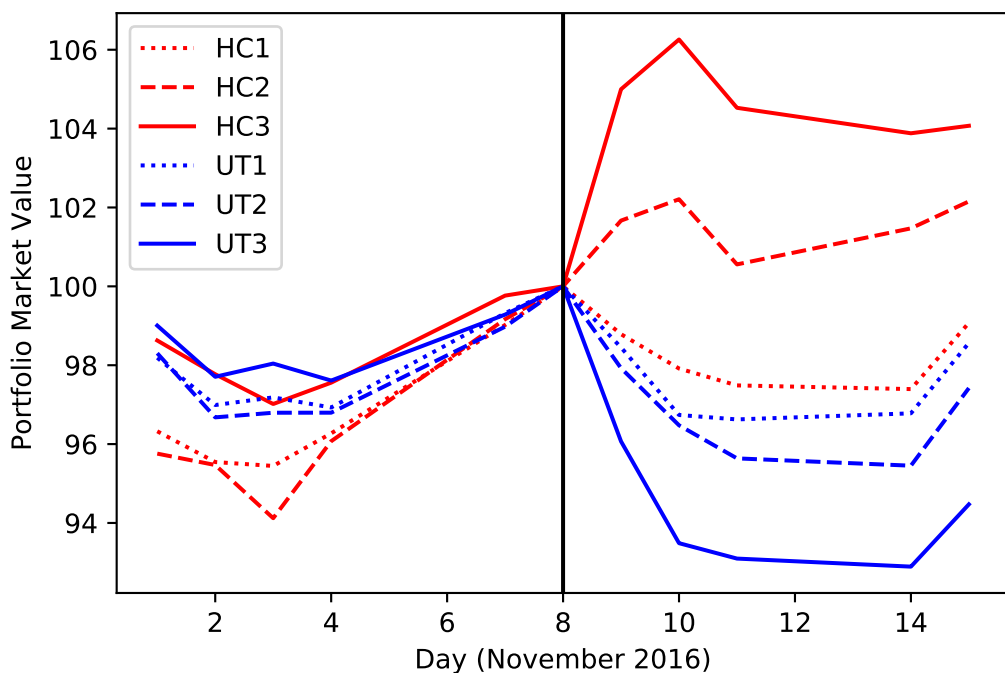


Figure 0-5: Market Value of Health Care (HC) and Utilities (UT) Firms sorted by Lobbying Expenditures around Election Day

high lobby firms jumps following the elections as much as 6% in two days, followed by the mid-lobbying spenders and finally the low lobbying spenders in that order. This is consistent with the fact that health care lobbying becomes more efficient after the election results given the president elect agenda. Hence, this benefits disproportionately more the big lobbying spenders. Meanwhile, on the blue industry side (utilities), one can see the exact opposite. The big lobbying spenders were thought of being very politically connected to the expected next administration. The fact that the Democrats lost means that their lobbying is less effective, leading to a sizable negative stock market reaction. Mid-lobbying utilities firm experience a milder negative stock market and the low-lobbying firms an even milder one. This is consistent with the idea that

lobbying by utilities firms becomes less effective following the election result, affecting (negatively) disproportionately more firms that lobby a lot. In terms of magnitude, note that big lobbying spenders in health care gained around 6% around election day while big lobbying spenders in utilities lost around 6%, making the documented effect economically significant.

These findings are consistent with both [6] and [4]. In the first one, the authors find that a firm supporting more candidates to elections leads to higher abnormal returns the year after (i.e. once the candidates are elected), and this is especially true for House representatives. This can be understood as the lobbying of these firms becoming more efficient through the candidates they support, leading to the pattern observed in the case of the 2016 US Presidential election. The second one uses a negative exogenous shock to the ability to lobby, and show that it is associated to negative abnormal returns for high lobbying firms. Again, this can be viewed as lobbying being less efficient, and that is particularly striking for firms that lobby the most.

Going further into this reasoning, we should observe that lobbying is less efficient at hedging political risk when the efficiency of lobbying is decreased. Hence, in the language of asset pricing and if we are provided with a political risk factor, the beta on the political risk factor should be lower when the lobbying efficiency is higher. To test for that, I construct of sectoral political risk factor by taking the difference between the low lobbying portfolio and the high lobbying portfolio: $F_{pol,s} = \bar{L}_{1,s} - \bar{L}_{3,s}$ where $\bar{L}_{i,s}$ denotes the value-weighted returns of portfolio i (sorted on total lobbying expenditures) in sector s (health care or utilities). The idea behind it is that there is some amount of political uncertainty in a given industry, and the firms that lobby the most are able to hedge against it. Hence, taking this difference should approximate

this political risk (this way of forming political risk factors is discussed in more details below). Then, I estimate an augmented [5] five factor model

$$R_{i,s,t}^e = \alpha + \beta_m R_{m,t}^e + \beta_h HML_t + \beta_s SMB_t + \beta_{mo} MOM_t + \beta_{pol} F_{pol,s,t} + \epsilon_{i,t}$$

during two different periods: the pre period (July 2015-June 2016) and the post period (January 2017-December 2017). Table A1 and A2 in the appendix present the regression tables for both industries and time periods. The coefficient of interest is β_{pol} , the factor loadings on the constructed sectoral political risk factor. These betas are summarized on Figure 0-6.

First of all, as one can see, the betas are decreasing when firms lobby more, consistently with the idea that lobbying is used as a hedge against political risk. However, this is somewhat automatic as I only have three portfolios in this setting, and not really significant as the tables show given that there are only twelve points (one year with monthly returns). More interestingly, one can see that for health care firms, the betas get lower for all portfolios under a republican administration compared to a democratic one. This is consistent with the fact that lobbying from this red industry becomes more efficient, translating into a decrease in the factor loading on political risk for this industry. Conversely, the betas of utilities firm get higher for all portfolios under a republican administration compared to a democratic one, consistently with their lobbying being less efficient and translating into an increase in the factor loading on political risk for this blue industry.

Overall, the opposite pattern for red and blue industries around the 2016 US presidential election cleanly identifies the effect of lobbying efficiency on stock returns. When

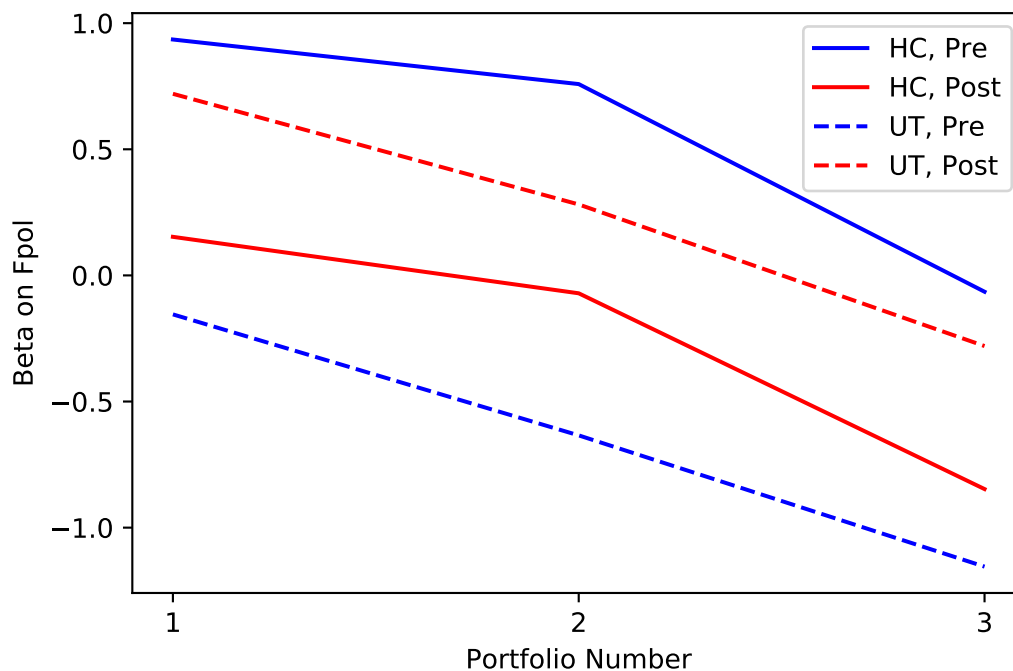


Figure 0-6: β_{pol} across Lobbying Portfolios for both Health Care (HC) and Utilities (UT) in pre and post election periods

a republican president is unexpectedly elected, high lobbying firms in red industries tend to see a disproportionately positive stock market reactions coming from the fact that their lobbying is going to be more efficient in the coming years (and they are the ones which are using this tool the most). Moreover, this increase in lobbying efficiency allow them to hedge better political risk, as shown by the decrease of their betas on their sectoral political risk factor. The opposite holds for firms in blue industries. I now turn to a more general portfolio analysis.

0.3.4 General Portfolio-Level Analysis

Following the idea above of forming a political risk factor for which lobbying would be a tool to hedge against, I now use my entire sample (period 1999-2017 and all industries) to form an aggregate political risk factor. To do that, I sort firms into five portfolios³ on their total lobbying expenditures (L_1 through L_5 , with portfolio 5 being the biggest lobbying spenders). Then I carry out a portfolio analysis similar to [12], [13] and [5]:

$$R_{i,t}^e = \alpha + \beta_m R_{m,t}^e + \beta_h HML_t + \beta_s SMB_t + \beta_{mo} MOM_t + \beta_{pol} F_{pol,t} + \epsilon_{i,t}$$

The idea behind this factor is that there is a given amount of political uncertainty in the economy at any point in time, and the highest lobbying spenders are able to hedge part of it. Hence the difference of this two portfolios should approach the hedgeable part of the political risk factor common to all firms. This commonality between firms makes this factor closer to the [2] measure which is assembled from newspaper coverage, compared to [19] who compute firm-specific measures from earnings call transcripts.

The obtained F_{pol} factor is economically significant: its monthly mean is 0.6% and it is statistically different from 0 with a T-Stat of 3.41 (implying a p-value of 0.00071). As Table 3 shows, it is not very correlated with other factors, with the exception of SMB . This should not be surprising as large firms are also the ones that lobby the most. Nevertheless, this correlation is only 0.5, suggesting that new information is brought by this factor. Additionally, as Table 4 shows, F_{pol} has a higher monthly Sharpe ratio than the other factors, representing twice the market Sharpe ratio. Finally, Figure -7

³I follow [18] for the choice of the number of portfolios

in the appendix shows its evolution throughout the sample. I now turn to the portfolio regressions. If lobbying is indeed a tool to hedge against political risk, a decreasing pattern of β_{pol} should be observed as lobbying spending increases.

Table 3: Correlation of F_{pol} with Carhart (1997) Four Factors

Factor	$Mkt - Rf$	SMB	HML	MOM
Correlation with F_{pol}	0.25	0.50	0.06	-0.04

Table 4: Monthly Sharpe Ratio of F_{pol} and Carhart (1997) Four Factors

Factor	$Mkt - Rf$	SMB	HML	MOM	F_{pol}
Sharpe Ratio	0.11	0.097	0.066	0.060	0.22

Table 5: Time-Series Estimation of the Five Factor Model on Five Total Lobbying-Sorted Portfolios

Coefficient	L_1	L_2	L_3	L_4	L_5
α	0.64 (0.05)	1.00 (0.18)	0.83 (0.11)	0.71 (0.08)	0.64 (0.05)
β_m	0.92 (0.01)	0.99 (0.04)	0.98 (0.03)	0.98 (0.02)	0.92 (0.01)
β_s	-0.14 (0.02)	0.11 (0.06)	0.06 (0.04)	-0.00 (0.03)	-0.14 (0.02)
β_h	0.06 (0.02)	0.15 (0.06)	0.03 (0.04)	0.01 (0.03)	0.06 (0.02)
β_{mom}	-0.03 (0.01)	0.08 (0.03)	-0.05 (0.02)	-0.02 (0.02)	-0.03 (0.01)
β_{pol}	0.77 (0.02)	0.32 (0.08)	0.16 (0.05)	0.14 (0.04)	-0.23 (0.02)

Table 5 presents the estimation of the portfolio regression. As one can see by looking at the β_{pol} line, there is a decrease of the exposure of the portfolio to the political

risk factor F_{pol} as total lobbying expenditures increase. This suggest, as predicted by the model, that lobbying expenditures are a useful tool to hedge against political risk. Note that this pattern is robust to the addition of the two new [14] factors CMA and RMW , as shown in Table A3 in the appendix. It is also robust to sorting into more portfolios as shown in Table A4 in the appendix (where the pattern of β_{pol} is not exactly strictly decreasing across portfolios, but very close). Table A5 in the appendix present the average characteristics of firms in each portfolio. Unsurprisingly, market equity is increasing with lobbying expenditures. The rest of characteristics are pretty heterogenous, motivating the double sorting below.

I also try another definition of the political risk factor, in line with how SMB , HML , and MOM are constructed. I sort firms into six portfolios that are the intersection of two portfolios formed on size (market equity) and three portfolios formed on total lobbying. I define $F_{pol,2}$ as the average of the two low lobbying portfolios minus the average of the two high lobbying portfolios. Then, I re-run the five factor regression, replacing F_{pol} with $F_{pol,2}$. Table A6 in the appendix presents the regression table. As one can see, the decreasing pattern of the beta on the political risk factor ($\beta_{pol,2}$) is still present, suggesting that lobbying contributions are a hedge against this newly defined political risk factor as well.

To go further into robustness checks, one could wonder if lobbying is the factor explaining this decreasing pattern of β_{pol} . Another natural candidate would be firm size. Indeed, one could argue that large firms are more protected by the government, e.g because they are more important for the economy overall, and since large firms are also the one that can lobby the most, this decreasing β_{pol} patterns is just a consequence of this government protection. Hence, in Table 6, I run the same regressions

as in Table 5, albeit for five market equity-sorted portfolios. Looking at the β_{pol} line, one can see that the decreasing pattern is not there. Hence, size alone is not enough to explain the story, and lobbying seems to be critical to this result.

Table 6: Time-Series Estimation of the Five Factor Model on Five Market Equity-Sorted Portfolios

Coefficient	ME_1	ME_2	ME_3	ME_4	ME_5
α	1.46 (0.25)	0.80 (0.15)	0.81 (0.12)	0.64 (0.10)	0.68 (0.05)
β_m	1.00 (0.06)	1.06 (0.04)	0.96 (0.03)	0.89 (0.03)	0.94 (0.01)
β_s	1.22 (0.09)	0.35 (0.05)	0.14 (0.04)	-0.12 (0.04)	-0.11 (0.02)
β_h	0.21 (0.08)	0.38 (0.05)	0.27 (0.04)	0.23 (0.03)	0.01 (0.02)
β_{mom}	-0.51 (0.05)	-0.20 (0.03)	-0.13 (0.02)	-0.09 (0.02)	-0.01 (0.01)
β_{pol}	0.25 (0.12)	0.47 (0.07)	0.29 (0.06)	0.39 (0.05)	-0.19 (0.02)

The model involves fixed costs of lobbying, and imply that lobbying becomes a useful tool to hedge political risk only for large firms which have enough scale to implement it. To test this idea better, I double-sort firms into three market equity portfolios, and for each market equity portfolio, I sort firms into three total lobbying expenditures portfolios (making it nine portfolios in total). Table 7 presents the time series estimation of the five factor model for each of these portfolios. Looking at the β_{pol} line, one can see that the decreasing pattern of β_{pol} is inexistent for the first market equity bin (ME_1L_1 through ME_1L_3), very mild for the second bin (ME_2L_1 through ME_2L_3) and fairly strong for the third market equity bin (ME_3L_1 through ME_3L_3).

This is very consistent with the model as it shows that small firms are not able to hedge political risk by lobbying (they are impeded by the fixed cost in the language of the model), while large firms can hedge political risk quite efficiently by lobbying. This table is robust to different periods: Table A7 in the Appendix reproduces it for period 1999-2007 while A8 does it for period 2008-2017, and both confirms the pattern described above. It is also robust to the addition of more portfolios: Table A9 reproduces this exercise for three market equity bins and four total lobbying bins (twelve portfolios in total), while Table A10 reproduces it for four market equity bins and three total lobbying bins (twelve portfolios in total). In both cases, the decreasing pattern of β_{pol} is net only for the last market equity bin, confirming that only large firm are able to hedge political risk efficiently through lobbying.

Table 7: Time-Series Estimation of the Five Factor Model on Double Sorted Portfolios on Market Equity (3) and Total Lobbying (3)

Coefficient	ME_1L_1	ME_1L_2	ME_1L_3	ME_2L_1	ME_2L_2	ME_2L_3	ME_3L_1	ME_3L_2	ME_3L_3
α	1.01 (0.20)	1.51 (0.24)	0.67 (0.23)	0.83 (0.12)	0.71 (0.13)	0.72 (0.15)	0.71 (0.09)	0.70 (0.10)	0.63 (0.06)
β_m	1.07 (0.05)	0.94 (0.06)	1.05 (0.06)	0.97 (0.03)	0.99 (0.03)	0.91 (0.04)	0.94 (0.02)	0.99 (0.03)	0.92 (0.02)
β_s	0.50 (0.07)	1.21 (0.08)	0.49 (0.08)	0.08 (0.04)	-0.02 (0.05)	0.06 (0.05)	-0.10 (0.03)	-0.05 (0.04)	-0.16 (0.02)
β_h	0.41 (0.07)	0.20 (0.08)	0.52 (0.07)	0.23 (0.04)	0.22 (0.04)	0.34 (0.05)	-0.02 (0.03)	0.03 (0.03)	0.04 (0.02)
β_{mom}	-0.24 (0.04)	-0.33 (0.05)	-0.37 (0.04)	-0.17 (0.02)	-0.08 (0.03)	-0.18 (0.03)	-0.01 (0.02)	0.01 (0.02)	-0.03 (0.01)
β_{pol}	0.39 (0.09)	0.02 (0.10)	0.59 (0.10)	0.39 (0.05)	0.38 (0.06)	0.25 (0.07)	0.24 (0.04)	0.02 (0.04)	-0.26 (0.03)

Table A11 in the appendix presents the characteristics of firms in each of the portfolios double sorted by market equity (3) and lobbying (3). One can see that the characteristics of firms are much more comparable within a market equity bin (com-

pared to the simple sorting by lobbying expenditures), especially for the third one (the large firms), which gives the bulk of the empirical validation of the model. The main exception is size (market equity) itself, but that is consistent with the model as large firms have more scale to lobby. One can also see that high lobbying spending firms tend to have a higher probability to have their headquarters in the North East of the US⁴, which could be related to the efficiency of their lobbying expenditures: they tend to be closer to the political decision centers, making their political connection more efficient. Finally, for all market equity bins, the [19] political risk measure is increasing in Lobbying. This suggests that firms more exposed to political risk tend to lobby more, which is intuitive. Interestingly, the firms that seem to be the most exposed are the firms in portfolio ME_1L_3 , which are indeed the ones with a β_{pol} as high as 0.59 (the highest across portfolios). It seems that the high exposure of these firms to political risk lead them to lobby in order to offset it (they are in L_3), but the fact they are relatively small (they are in ME_1) does not allow their lobbying to be efficient enough to hedge this political risk⁵.

Overall, the portfolio analysis confirms the model predictions, and the double sorting by market equity and size further shows that only large firms use lobbying efficiently to hedge against political risk.

⁴The North East is defined as CT, ME, MA, NH, RI, VT, NY, NJ, PA, DE, MD, DC.

⁵The analysis on the [19] political risk measure should be taken with a grain of salt for two reasons. First, it is only available for a fraction of firms in each portfolio. Second, the causality could flow both ways as the management could decide to emphasize the political risk in their earnings call in order to legitimize the lobbying expenditures they are undertaking.

0.4 Conclusion

I document that firms that lobby extensively do so in order to hedge the political risk they are exposed to. The theoretical model based on a fixed cost associated with lobbying and firms of heterogeneous size show that this is an efficient strategy for firms that are big enough to spread the fixed cost across production units. Potential extensions of the model include a partial ability for firms to share the fixed cost of lobbying or an idiosyncratic exposure to political risk (both of which do not change the mechanism highlighted in this paper).

I provide two sets of empirical evidence consistent with this model. Both the event study around the 2016 US presidential election and the double sorting portfolio strategy over a long period tend to show that large firms are able to efficiently lobby in order to hedge the political risk they are exposed to, and this is especially true if they belong to an industry with the same political color as the sitting administration.

This paper contributes to the literature at the intersection of asset pricing, and highlights the role of lobbying in hedging political risk and the fact that there is asymmetry in the efficiency of this tool. Extensions to this framework could include laying out a dynamic general equilibrium in order to assess the cost of this asymmetry across firms for the overall economy.

.1 Tables

Table A1: Estimation of the Five-factor model for the Health Care Industry during the Pre and Post Election periods

Coefficient	Period	L1	L2	L3
Pre-Election				
α		0.18 (1.03)	-1.17 (0.87)	0.18 (1.03)
β_m		0.94 (0.31)	0.66 (0.26)	0.94 (0.30)
β_s		-0.26 (0.59)	-0.24 (0.51)	-0.26 (0.59)
β_h		-0.67 (0.80)	-1.17 (0.68)	-0.67 (0.80)
β_{mo}		-0.25 (0.39)	-0.25 (0.33)	-0.25 (0.39)
β_{pol}		0.94 (0.36)	0.76 (0.30)	-0.06 (0.36)
Post-Election				
α		-2.55 (1.61)	1.18 (3.6)	-2.55 (1.61)
β_m		3.06 (0.84)	0.82 (1.98)	3.06 (0.88)
β_s		2.13 (0.67)	0.20 (1.50)	2.13 (0.67)
β_h		-1.84 (0.63)	-0.64 (1.42)	-1.84 (0.63)
β_{mo}		1.07 (0.50)	-0.58 (1.12)	1.07 (0.50)
β_{pol}		0.15 (0.22)	-0.07 (0.49)	-0.85 (0.22)

Table A2: Estimation of the Five-factor model for the Utilities Industry during the Pre and Post Election periods

Coefficient	Period	L1	L2	L3
Pre-Election				
α		3.55 (1.52)	0.55 (2.17)	3.55 (1.52)
β_m		0.15 (0.39)	0.86 (0.55)	0.15 (0.39)
β_s		-0.82 (0.61)	-0.43 (0.87)	-0.82 (0.61)
β_h		-0.47 (1.00)	0.95 (1.42)	-0.47 (1.00)
β_{mo}		-0.45 (0.61)	-0.14 (0.87)	-0.45 (0.61)
β_{pol}		-0.15 (0.67)	-0.63 (0.96)	-1.15 (0.67)
Post-Election				
α		-4.45 (1.60)	-3.01 (2.43)	-4.45 (1.60)
β_m		2.38 (0.86)	1.96 (1.30)	2.38 (0.86)
β_s		0.40 (0.34)	0.16 (0.52)	0.40 (0.34)
β_h		-1.24 (0.43)	-1.14 (0.66)	-1.24 (0.43)
β_{mo}		1.05 (0.35)	0.98 (0.53)	1.05 (0.35)
β_{pol}		0.72 (0.65)	0.28 (0.98)	-0.28 (0.65)

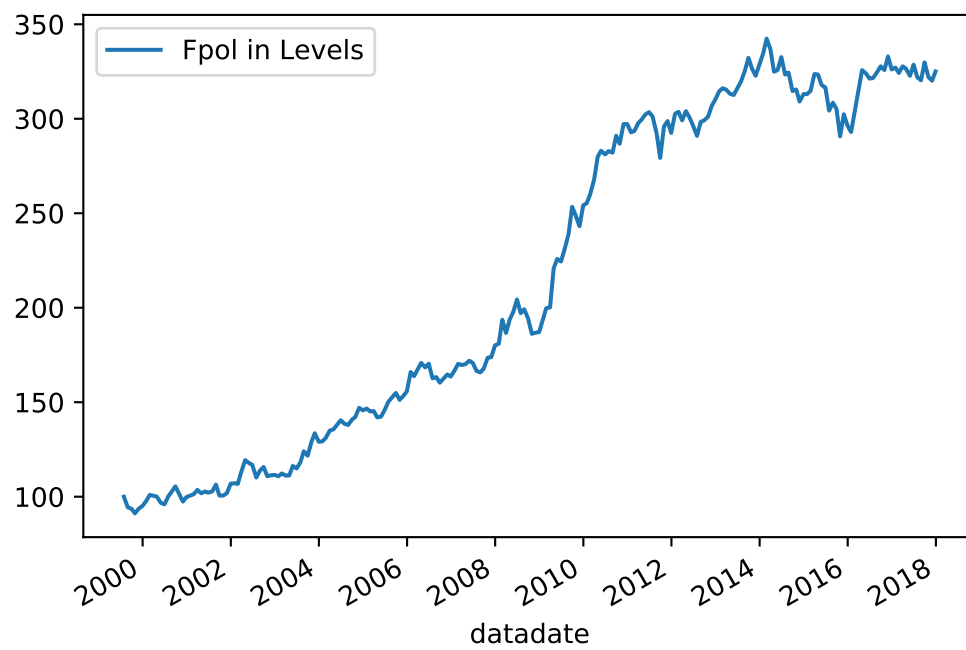


Figure -7: Evolution of F_{pol} in Levels over the Full Sample

Table A3: Time-Series Estimation of the Seven Factor Model on Five Total Lobbying-Sorted Portfolios

Coefficient	L_1	L_2	L_3	L_4	L_5
α	0.57 (0.05)	0.83 (0.18)	0.81 (0.11)	0.67 (0.09)	0.57 (0.05)
β_m	0.96 (0.01)	1.07 (0.05)	0.99 (0.03)	1.00 (0.02)	0.96 (0.01)
β_s	-0.12 (0.02)	0.22 (0.07)	0.10 (0.05)	0.02 (0.04)	-0.12 (0.02)
β_h	-0.03 (0.02)	0.03 (0.08)	0.05 (0.05)	-0.03 (0.04)	-0.03 (0.02)
β_{mom}	-0.04 (0.01)	0.06 (0.03)	-0.05 (0.02)	-0.02 (0.02)	-0.04 (0.01)
β_{cma}	0.14 (0.03)	0.11 (0.11)	-0.10 (0.07)	0.04 (0.05)	0.14 (0.03)
β_{rmw}	0.07 (0.02)	0.26 (0.09)	0.08 (0.05)	0.07 (0.04)	0.07 (0.02)
β_{pol}	0.77 (0.02)	0.30 (0.08)	0.15 (0.05)	0.14 (0.04)	-0.23 (0.02)

Table A4: Time-Series Estimation of the Five Factor Model on Ten Total Lobbying-Sorted Portfolios

Coefficient	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9	L_{10}
α	0.82 (0.13)	0.55 (0.13)	0.78 (0.16)	1.14 (0.24)	0.75 (0.14)	0.86 (0.14)	0.47 (0.13)	0.90 (0.12)	0.64 (0.11)	0.64 (0.07)
β_m	0.89 (0.03)	0.95 (0.03)	0.97 (0.04)	0.94 (0.06)	1.01 (0.04)	0.95 (0.04)	0.98 (0.03)	0.96 (0.03)	0.95 (0.03)	0.91 (0.02)
β_s	0.14 (0.05)	-0.39 (0.05)	0.23 (0.06)	-0.05 (0.09)	-0.01 (0.05)	0.13 (0.05)	0.09 (0.05)	-0.06 (0.04)	-0.14 (0.04)	-0.13 (0.02)
β_h	-0.00 (0.04)	0.15 (0.04)	0.26 (0.05)	0.14 (0.08)	0.12 (0.05)	0.01 (0.05)	-0.07 (0.04)	0.11 (0.04)	0.07 (0.04)	0.05 (0.02)
β_{mom}	-0.12 (0.03)	0.04 (0.03)	0.04 (0.03)	0.04 (0.05)	0.00 (0.03)	-0.07 (0.03)	-0.13 (0.03)	0.04 (0.02)	0.00 (0.02)	-0.05 (0.01)
β_{pol}	0.61 (0.06)	0.90 (0.06)	0.37 (0.08)	0.30 (0.11)	0.24 (0.07)	0.10 (0.07)	0.13 (0.06)	0.14 (0.05)	0.02 (0.05)	-0.32 (0.03)

Table A5: Financial Characteristics of firms in the Five Lobbying Portfolios

	L_1	L_2	L_3	L_4	L_5
Market Equity	2.8e6	4.0e6	6.3e6	1.3e7	5.4e7
Lobbying/Sales	0.013	0.008	0.027	0.005	0.001
R&D/Sales	1.869	0.916	0.340	0.099	0.038
SG&A/Sales	0.671	0.408	1.100	0.219	0.160
Operational Expenditures/Sales	4.280	2.383	2.311	0.971	0.768
Tobin's Q	2.164	2.207	2.135	1.919	1.863
Frac. of firms with HQ in the North East	0.265	0.262	0.263	0.282	0.335
Political Risk	121.430	140.472	146.646	147.619	160.189

Table A6: Time-Series Estimation of the Five Factor Model (with $F_{pol,2}$) on Five Total Lobbying-Sorted Portfolios

Coefficient	L_1	L_2	L_3	L_4	L_5
α	0.81 (0.11)	1.03 (0.18)	0.85 (0.11)	0.77 (0.09)	0.58 (0.06)
β_m	0.98 (0.03)	1.01 (0.04)	0.99 (0.03)	0.99 (0.02)	0.91 (0.01)
β_s	0.05 (0.04)	0.16 (0.06)	0.09 (0.04)	0.05 (0.03)	-0.21 (0.02)
β_h	0.19 (0.03)	0.21 (0.06)	0.06 (0.03)	0.04 (0.03)	0.02 (0.02)
β_{mom}	-0.08 (0.02)	0.05 (0.04)	-0.06 (0.02)	-0.02 (0.02)	-0.02 (0.01)
$\beta_{pol,2}$	0.41 (0.06)	0.29 (0.10)	0.13 (0.06)	-0.01 (0.05)	-0.07 (0.03)

Table A7: Time-Series Estimation of the Five Factor Model on Double Sorted Portfolios on Market Equity (3) and Total Lobbying (3) for period 1999-2007

Coefficient	ME_1L_1	ME_1L_2	ME_1L_3	ME_2L_1	ME_2L_2	ME_2L_3	ME_3L_1	ME_3L_2	ME_3L_3
α	1.44 (0.33)	1.95 (0.42)	0.61 (0.36)	1.10 (0.20)	0.80 (0.21)	0.78 (0.22)	0.99 (0.18)	0.87 (0.17)	0.73 (0.11)
β_m	0.99 (0.10)	1.08 (0.13)	1.22 (0.11)	0.97 (0.06)	1.02 (0.06)	0.95 (0.07)	0.98 (0.05)	0.94 (0.05)	0.95 (0.03)
β_s	0.44 (0.11)	1.46 (0.14)	0.72 (0.12)	0.15 (0.07)	0.11 (0.07)	0.29 (0.07)	-0.13 (0.06)	-0.10 (0.06)	-0.12 (0.04)
β_h	0.50 (0.13)	0.60 (0.16)	1.03 (0.14)	0.40 (0.08)	0.49 (0.08)	0.73 (0.08)	-0.02 (0.07)	-0.03 (0.07)	0.10 (0.04)
β_{mom}	-0.23 (0.06)	-0.40 (0.08)	-0.35 (0.07)	-0.24 (0.04)	-0.09 (0.04)	-0.25 (0.04)	-0.01 (0.03)	0.06 (0.03)	-0.03 (0.02)
β_{pol}	0.40 (0.16)	-0.17 (0.21)	0.35 (0.18)	0.35 (0.10)	0.17 (0.10)	0.01 (0.11)	0.32 (0.09)	-0.02 (0.08)	-0.36 (0.05)

Table A8: Time-Series Estimation of the Five Factor Model on Double Sorted Portfolios on Market Equity (3) and Total Lobbying (3) for period 2008-2017

Coefficient	ME_1L_1	ME_1L_2	ME_1L_3	ME_2L_1	ME_2L_2	ME_2L_3	ME_3L_1	ME_3L_2	ME_3L_3
α	0.58 (0.20)	0.94 (0.22)	0.46 (0.25)	0.53 (0.12)	0.47 (0.13)	0.45 (0.15)	0.49 (0.08)	0.55 (0.11)	0.52 (0.06)
β_m	1.19 (0.05)	1.01 (0.05)	1.13 (0.06)	1.04 (0.03)	1.09 (0.03)	1.05 (0.04)	0.92 (0.02)	1.02 (0.03)	0.92 (0.01)
β_s	1.01 (0.11)	1.12 (0.12)	0.71 (0.13)	0.27 (0.07)	0.16 (0.07)	0.20 (0.08)	-0.06 (0.04)	0.01 (0.06)	-0.16 (0.03)
β_h	-0.09 (0.08)	-0.09 (0.09)	-0.04 (0.10)	-0.02 (0.05)	-0.15 (0.05)	-0.07 (0.06)	-0.04 (0.03)	-0.04 (0.04)	0.02 (0.02)
β_{mom}	-0.35 (0.05)	-0.31 (0.05)	-0.49 (0.06)	-0.13 (0.03)	-0.13 (0.03)	-0.15 (0.04)	-0.03 (0.02)	-0.07 (0.03)	-0.01 (0.01)
β_{pol}	0.12 (0.09)	0.01 (0.10)	0.40 (0.11)	0.31 (0.06)	0.32 (0.06)	0.23 (0.07)	0.17 (0.04)	0.02 (0.05)	-0.20 (0.03)

Table A9: Time-Series Estimation of the Five Factor Model on Double Sorted Portfolios on Market Equity (3) and Total Lobbying (4)

Coefficient	ME_1L_1	ME_1L_2	ME_1L_3	ME_1L_4	ME_2L_1	ME_2L_2	ME_2L_3	ME_2L_4	ME_3L_1	ME_3L_2	ME_3L_3	ME_3L_4
α	1.12 (0.22)	1.39 (0.25)	1.26 (0.24)	0.59 (0.24)	0.85 (0.12)	0.75 (0.15)	0.66 (0.14)	0.73 (0.16)	0.75 (0.11)	0.69 (0.09)	0.66 (0.10)	0.63 (0.08)
β_m	1.04 (0.05)	1.01 (0.06)	1.00 (0.06)	1.03 (0.06)	0.96 (0.03)	1.01 (0.04)	1.02 (0.04)	0.86 (0.04)	0.95 (0.03)	0.98 (0.02)	0.94 (0.03)	0.91 (0.02)
β_s	0.56 (0.08)	0.95 (0.09)	0.94 (0.08)	0.43 (0.09)	0.09 (0.04)	-0.04 (0.05)	0.04 (0.05)	0.04 (0.06)	-0.12 (0.04)	-0.02 (0.03)	-0.12 (0.04)	-0.15 (0.03)
β_h	0.34 (0.07)	0.30 (0.08)	0.29 (0.08)	0.56 (0.08)	0.25 (0.04)	0.15 (0.05)	0.32 (0.05)	0.34 (0.05)	-0.02 (0.04)	-0.02 (0.03)	0.07 (0.03)	0.04 (0.02)
β_{nom}	-0.29 (0.04)	-0.28 (0.05)	-0.39 (0.05)	-0.32 (0.05)	-0.15 (0.02)	-0.10 (0.03)	-0.14 (0.03)	-0.18 (0.03)	0.04 (0.02)	0.01 (0.02)	-0.02 (0.02)	-0.03 (0.01)
β_{pol}	0.38 (0.10)	0.18 (0.11)	0.18 (0.10)	0.64 (0.11)	0.38 (0.05)	0.39 (0.07)	0.33 (0.06)	0.25 (0.07)	0.29 (0.05)	0.11 (0.04)	-0.07 (0.04)	-0.29 (0.03)

Table A10: Time-Series Estimation of the Five Factor Model on Double Sorted Portfolios on Market Equity (4) and Total Lobbying (3)

Coefficient	ME_1L_1	ME_1L_2	ME_1L_3	ME_2L_1	ME_2L_2	ME_2L_3	ME_3L_1	ME_3L_2	ME_3L_3	ME_4L_1	ME_4L_2	ME_4L_3
α	1.41 (0.26)	1.48 (0.30)	1.19 (0.29)	0.82 (0.15)	0.74 (0.16)	0.78 (0.17)	0.82 (0.12)	0.67 (0.14)	0.63 (0.17)	0.71 (0.11)	0.73 (0.10)	0.62 (0.07)
β_m	0.95 (0.07)	0.96 (0.07)	0.96 (0.07)	0.97 (0.04)	1.02 (0.04)	1.04 (0.04)	0.96 (0.03)	0.95 (0.04)	0.86 (0.04)	0.96 (0.03)	0.96 (0.02)	0.92 (0.02)
β_s	0.86 (0.09)	1.42 (0.11)	1.00 (0.10)	0.26 (0.05)	0.16 (0.06)	0.18 (0.06)	-0.11 (0.04)	-0.03 (0.05)	-0.12 (0.06)	-0.04 (0.04)	-0.10 (0.04)	-0.15 (0.03)
β_h	0.39 (0.08)	0.04 (0.10)	0.47 (0.09)	0.37 (0.05)	0.25 (0.05)	0.50 (0.06)	0.16 (0.04)	0.20 (0.05)	0.41 (0.05)	-0.07 (0.03)	0.02 (0.03)	0.04 (0.02)
β_{mom}	-0.44 (0.05)	-0.40 (0.06)	-0.50 (0.06)	-0.11 (0.03)	-0.15 (0.03)	-0.22 (0.03)	-0.08 (0.02)	-0.20 (0.03)	-0.18 (0.03)	0.04 (0.02)	0.02 (0.02)	-0.03 (0.01)
β_{pol}	0.26 (0.11)	0.01 (0.13)	0.44 (0.13)	0.42 (0.07)	0.35 (0.07)	0.35 (0.08)	0.39 (0.05)	0.23 (0.06)	0.38 (0.07)	0.18 (0.05)	-0.03 (0.04)	-0.30 (0.03)

Table A11: Characteristics of firms in the Double Sorted Portfolios

	ME_1L_1	ME_1L_2	ME_1L_3	ME_2L_1	ME_2L_2	ME_2L_3	ME_3L_1	ME_3L_2	ME_3L_3
Market Equity	5.5e5	6.2e5	7.4e5	3.7e6	4.0e6	4.7e6	2.0e7	3.2e7	7.8e7
Lobbying/Sales	0.060	0.062	0.152	0.000	0.002	0.002	0.000	0.001	0.001
R&D/Sales	2.553	1.495	0.508	0.069	0.150	0.062	0.053	0.038	0.043
SG&A/Sales	0.990	0.808	1.552	0.207	0.352	0.153	0.245	0.169	0.166
Op.Exp./Sales	5.511	3.548	3.223	0.858	1.116	0.877	0.778	0.769	0.738
Tobin's Q	2.186	2.113	1.813	2.033	1.972	1.588	2.566	2.080	1.984
HQ in the N.E.	0.270	0.270	0.281	0.257	0.250	0.237	0.274	0.335	0.358
Pol. Risk	137.637	173.421	180.092	111.103	136.217	148.040	119.086	136.731	165.751

Bibliography

- [1] Manuel Adelino and I. Serdar Dinc. Corporate distress and lobbying: Evidence from the Stimulus Act. Journal of Financial Economics, 114(2):256–272, November 2014.
- [2] Scott R. Baker, Nicholas Bloom, and Steven J. Davis. Measuring Economic Policy Uncertainty. The Quarterly Journal of Economics, 131(4):1593–1636, November 2016.
- [3] Frederico Belo, Vito D. Gala, and Jun Li. Government spending, political cycles, and the cross section of stock returns. Journal of Financial Economics, 107(2):305–324, February 2013.
- [4] Alexander Borisov, Eitan Goldman, and Nandini Gupta. The corporate value of (corrupt) lobbying. The Review of Financial Studies, page 62, 2016.
- [5] M. Carhart. On persistence in mutual fund performance. The Journal of Finance, 1997.
- [6] Michael J Cooper, Huseyin Gulen, and Alexei V Ovtchinnikov. Corporate Political Contributions and Stock Returns. The Journal of Finance, page 38, 2010.
- [7] Simeon Djankov, Rafael La Porta, Florencio Lopez-De-Silanes, and Andrei Shleifer. THE REGULATION OF ENTRY. The Quarterly Journal of Economics, page 37, 2002.
- [8] Alexander Dyck, David Moss, and Luigi Zingales. Media versus Special Interests. The Journal of Law and Economics, 56(3):521–553, August 2013.
- [9] Mara Faccio and Hung-Chia Hsu. Politically Connected Private Equity and Employment: Politically Connected Private Equity and Employment. The Journal of Finance, 72(2):539–574, April 2017.

- [10] Mara Faccio, Ronald Masulis, and John J McConnell. Political Connections and Corporate Bailouts. page 44, 2006.
- [11] Mara Faccio and Luigi Zingales. POLITICAL DETERMINANTS OF COMPETITION IN THE MOBILE TELECOMMUNICATION INDUSTRY. page 49, 2019.
- [12] Eugene F. Fama and Kenneth R. French. The Cross-Section of Expected Stock Returns. The Journal of Finance, 1992.
- [13] Eugene F. Fama and Kenneth R. French. Common risk factors in the returns on stocks and bonds. Journal of Financial Economics, 33(1):3–56, February 1993.
- [14] Eugene F. Fama and Kenneth R. French. A Five-Factor Asset Pricing Model. 2014.
- [15] Priyank Gandhi and Hanno Lustig. Size Anomalies in U.S. Bank Stock Returns: Size Anomalies in U.S. Bank Stock Returns. The Journal of Finance, 70(2):733–768, April 2015.
- [16] Priyank Gandhi, Hanno Lustig, and Alberto Plazzi. Equity is Cheap for Large Financial Institutions. page 78, 2017.
- [17] Gene Grossman and Elhanan Helpman. grossman_helpman.pdf. American Economic Review, 1994.
- [18] Marco Grotteria. Follow the Money. 2019.
- [19] Tarek A Hassan, Stephan Hollander, Ahmed Tahoun, and Laurence van Lent. Firm-Level Political Risk. page 79, 2017.
- [20] Deniz Igan and Prachi Mishra. A Fistful of Dollars: Lobbying and the Financial Crisis. IMF Working Paper, page 72, 2012.
- [21] Simon Johnson and Todd Mitton. Cronyism and capital controls: evidence from Malaysia\$. Journal of Financial Economics, page 32, 2003.
- [22] Bryan Kelly, Hanno Lustig, and Stijn Van Nieuwerburgh. Too-Systemic-to-Fail: What Option Markets Imply about Sector-Wide Government Guarantees. American Economic Review, 106(6):1278–1319, June 2016.
- [23] Bryan Kelly, Lubos Pastor, and Pietro Veronesi. The Price of Political Uncertainty: Theory and Evidence from the Option Market. The Journal of Finance, page 69, 2016.

- [24] In Song Kim. LobbyView: Firm-level Lobbying & Congressional Bills Database, 2018.
- [25] Maarten Meeuwis, Jonathan Parker, Antoinette Schoar, and Duncan Simester. Belief Disagreement and Portfolio Choice. Technical Report w25108, National Bureau of Economic Research, Cambridge, MA, September 2018.
- [26] Lubos Pastor and Pietro Veronesi. Uncertainty about Government Policy and Stock Prices. The Journal of Finance, page 47, 2012.
- [27] Lubos Pastor and Pietro Veronesi. Political Uncertainty and Risk Premia. Journal of Financial Economics, page 58, 2013.
- [28] Lubos Pastor and Pietro Veronesi. Political Cycles and Stock Returns. page 41, 2017.
- [29] Pedro Santa-Clara and Rossen Valkanov. The Presidential Puzzle: Political Cycles and the Stock Market. The Journal of Finance, 58(5):1841–1872, October 2003.
- [30] George J. Stigler. The Theory of Economic Regulation. The Bell Journal of Economics and Management Science, 2(1):3, 1971.