



Working Papers in Economics & Finance

2019-08

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# Lobbying, Regulatory Enforcement and Corporate Governance: Theory and Evidence from Regulatory Enforcement Actions against US Banks\*

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July 31, 2019

## Abstract

We explore protection against enforcement as a motive for lobbying and present evidence for bank holding companies with good corporate governance but a poorly performing portfolio of subsidiaries to be more likely to lobby. A simple theoretical model of lobbying as a means for banks to communicate otherwise private information on their quality rationalizes regulators' responsiveness to lobbying, even though lobbying banks inadvertently expose themselves as violators of the regulation. Using a composite governance indicator as a proxy for a bank's quality, we take the hypotheses from the model to a panel dataset of 173 large bank holding companies and their subsidiaries. In line with the theoretical hypotheses, we find that subsidiaries of lobbying, high-governance parent companies are less likely to receive a regulatory enforcement action, but the reverse is true for poor-governance parent companies. Furthermore, banks whose parent companies have lobbied perform better (worse) after five years if the bank holding has a high (low) governance indicator. On a policy note, our paper highlights a potential benefit of the lobbying system and makes the case for carefully designed incentives and commitment powers of bank regulators in order to make the most of this benefit.

**JEL Codes:** D72, G28, G34, K42.

**Keywords:** Lobbying, enforcement, bank regulation, corporate governance.

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\*We are grateful for comments and suggestions by Kentaro Asai, Oleg Badunenko, Eberhard Feess, Tim Friehe, Jack Robles, Harald Tauchmann, Eric Ulm and audiences at meetings of the Econometric Society and the NZAE, and seminars at Massey, Otago, Waikato and Victoria University of Wellington.

# 1 Introduction

Lobbying is an ubiquitous way for firms and interest groups to gain political influence. It is a means to communicate information that these interest groups want political decision makers to consider, and any other information that they think will make congress or regulatory agencies decide in their favour. Following theoretical work such as Potters and Van Winden (1992) and Grossman and Helpman (2001), it is now well understood that, as long as the interest group's and society's interests are at least partially aligned, lobbying is informative to some extent in equilibrium. Therefore, it is rational for a regulator to make use of the information transmitted in this process, even though the interest group has some incentive to misrepresent its private information.

Some recent empirical work has also presented evidence for lobbying to be an effective way to influence enforcement decisions (Correia (2014), Lambert (2019)). This is surprising from a theoretical point of view: If the purpose of lobbying is to reduce one's enforcement probability, we should expect a wrongdoer to have higher incentives to lobby than a law-abiding individual. In other words, a firm that lobbies in order to convince an enforcer to turn a blind eye on it will inadvertently let on that it has probably done wrong. Hence, if investigations of wrongdoing are costly, an enforcement agent could save some of these costs by focusing investigations on lobbying individuals, thus making them more likely to be punished and removing the incentives to lobby in the first place. Indeed, the existing theoretical explanations of potential wrongdoers' influence on enforcement decisions are confined to the exchange of favours (e.g. Polinsky and Shavell (2001)) rather than lobbying.

This paper offers a novel explanation of why potential wrongdoers lobby enforcement agents based on the transmission of relevant information: If the wrongdoer can credibly communicate that the social consequences of his wrongdoing are less severe, committing to not punishing a lobbying, less harmful wrongdoer allows the enforcement agent to provide incentives for this type of wrongdoer to identify themselves and focus her costly investigation effort on more severe cases. After developing this idea within a simple theoretical model, we use data on lobbying and regulatory enforcement actions against US banks to test the hypotheses implied by the model.

As our theoretical explanation of lobbying is based on the communication of information to the enforcement agent that would otherwise be unobservable to her, testing hypotheses regarding this information is not straightforward. Based on previous evidence that, in the context of banking, better governance has been found to be associated with better risk management (Ellul and Yerramilli (2013)) and less misconduct against bank regulation (Nguyen, Hagendorff, and Eshraghi (2015)), we suggest that the quality of

a bank's corporate governance may be used as a proxy for this unobservable quality of a bank. The feature of our model that this higher ability to manage risks may induce banks with better corporate governance to take higher risks finds also some support in the existing empirical literature.<sup>1</sup>

In our panel dataset of 173 large US bank holding companies and their subsidiaries, we find that bank holding companies with stronger corporate governance and a poorly performing portfolio of subsidiaries are more likely to lobby. This is in line with the idea that bank holding companies whose subsidiaries are at risk of being penalized lobby in an attempt to convince the regulator of their quality. Furthermore, banks whose parent companies have lobbied and have a high corporate governance indicator are less likely to receive an enforcement action than subsidiaries of their non-lobbying, high-quality counterparts. For bank holding companies with low corporate governance indicator, this result is reversed. This supports the idea that regulators' reaction to lobbying depends on the lobbying firm's quality. Last, we show a positive relationship between lobbying and future performance, which is entirely driven by high-quality bank holding companies.

Our paper seeks to explain bank holding companies' lobbying decisions by their aim to avoid regulatory enforcement actions and regulatory authorities' aim to target their enforcement effort most efficiently. Therefore, it is related to two strands of literature, explaining the motives for lobbying and the relationship between bank lobbying and bank regulation. The first strand of related literature examines the determinants of corporate lobbying. In general, empirical evidence on lobbying is relatively scarce and the main reason is that information on the lobbying activities of firms has only recently become available. In particular, in the US, after the implementation of the Lobbying Disclosure Act of 1995, it has been compulsory for firms to disclose their lobbying expenses since 1998. Despite the limited data availability, there are several studies which examine the determinants of corporate lobbying. However, most of them focus on the non-financial sector. For instance, Hansen and Mitchell (2000) and Brasher and Lowery (2006) suggest that firm size is an important factor determining a firm's decision to lobby. Hill, Kelly, Lockhart, and Van Ness (2013) find that firms are more likely to engage in lobbying when they are larger, have more investment opportunities and greater cash-flows. Moreover, Mathur, Singh, Thompson, and Nejadmalayeri (2013) examine the relationship between corporate governance and lobbying of non-financial firms and find that higher managerial entrenchment is associated with more lobbying activity. They also find that, among others, lobbying can be a value creating strategy. Despite the aforementioned studies,

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<sup>1</sup>Beltratti and Stulz (2012), Erkens, Hung, and Matos (2012) and Minton, Taillard, and Williamson (2014) have linked certain indicators of good corporate governance to weaker performance during the financial crisis, which, in some cases, is attributed to different risk taking incentives for these banks.

evidence on the motives behind lobbying in the banking industry is even more limited. In fact, the only study from this branch of literature that is closely related to our work is that of Gibson, Odabasioglu, and Padovani (2018), who examine the determinants of bank lobbying activities. Focusing on the time period prior and during the financial crisis, they provide evidence that larger, less creditworthy banks with more vulnerable balance sheets and more diversified business profiles are more likely to lobby. They also suggest that it is not only lobbying expenses that matter, but also the number of lobbyists hired by banks, as well as the interaction of these two. We build on their work and take the analysis a step further by investigating both the motives behind bank lobbying and its potential success, and by providing a theoretical explanation of our findings.

We also contribute to the literature examining the relationship between bank regulation and political connections. Similar to the literature on lobbying determinants, there is a number of studies focusing on non-financial firms. For example, Kedia and Rajgopal (2011) and Correia (2014) focus on political connections and SEC enforcement; Yu and Yu (2011) and Wu, Johan, and Rui (2016) explore the detection of fraud and enforcement; Faccio, Masulis, and McConnell (2006) investigate corporate bailouts, and Claessens, Feijen, and Laeven (2008) examine the interplay between lobbying and access to finance. Turning to the financial services industry, the most closely related study to the present paper is that of Lambert (2019), who examines the relationship between bank lobbying and regulatory enforcement actions. Focusing on the universe of US Commercial and Savings banks, he finds that lobbying banks are less likely to receive enforcement actions. Moreover, his findings suggest that banks engaging in lobbying activities have higher levels of risk-taking behaviour and tend to under-perform their non-lobbying peers. Although Lambert's and our study both aim to examine the impact of lobbying on regulatory enforcement on banks, with the ultimate purpose of disentangling the motives behind lobbying, we distinguish our study in the following important ways: First, we provide a theoretical rationale for the regulator to spare lobbying banks potential enforcement actions. Second, in line with our theoretical hypotheses, we show that the negative relationship between lobbying and enforcement only holds for banks with high quality of corporate governance. Last, we show that the main beneficiaries from this enforcement strategy, lobbying banks with high governance quality, do perform better in the long run than their non-lobbying counterparts.

Apart from lobbying, prior studies have examined the interplay among regulatory enforcement and other types of political connections in banking. For instance, Shive and Forster (2016) provide evidence that financial firms that hire former regulators are associated with reduced risk. They also provide limited evidence of "quid pro quo" behaviour in regulatory actions. In a more recent study, Papadimitri, Pasiouras, Pescetto,

and Wohlschlegel (2018) examine political influence under a different context and its impact on regulatory enforcement. In particular, measuring political influence through elected officials with power in Congress, they find that political influence decreases likelihood of regulatory enforcement. However, they point out that this effect is conditional to various factors such as bank-level and other state and environmental factors. In a broader context, previous studies have examined the interplay between political influence and favourable outcome of banks, such as branching deregulation (Kroszner and Strahan (1999)), bailout legislation during the financial crisis (Mian, Sufi, and Trebbi (2010)), legislative process and voting behaviour (Igan and Mishra (2014)).

The remainder of this paper is organized as follows: We first use a simple theoretical model of lobbying in order to avoid enforcement in the context of a bank in order to derive testable hypotheses. In Section 3, we discuss our dataset, which we will use in Section 4 to test the aforementioned hypotheses. Section 5 concludes and discusses some policy implications of our paper.

## 2 A Simple Theory of Lobbying of an Enforcement Agency

### 2.1 The Model

In this section, we develop a model of lobbying as a means for banks to communicate otherwise private information to an enforcement agent. Based on our analysis of this model, we will derive testable hypotheses. We formulate the model in the context of a bank, but the main idea is applicable to a wide range of settings in which enforcement is delegated to some independent authority.

An enforcement agent is tasked with investigating and potentially punishing a bank's violation of a regulation. At time 0 of the model, the bank chooses an investment  $I$ , and the enforcement agent announces an enforcement strategy, which we will later specify in more detail.<sup>2</sup> Depending on the bank's investment  $i \in \{0, I\}$ , the bank draws a quality type  $\theta$  from a distribution with cdf  $H_i(\theta)$ , where  $H_I(\cdot)$  first-order stochastically dominates  $H_0(\cdot)$ , and privately observes this  $\theta$ . We will denote the enforcement agent's beliefs by the cdf  $G(\theta)$ .

At time 1, the bank decides whether or not to comply with the regulation. Furthermore, the bank may spend  $L$  to make the value of  $\theta$  perfectly observable to the

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<sup>2</sup>For most of the time, we will assume that the enforcement agent can credibly commit to this enforcement strategy, but we will briefly discuss in the conclusion how the results change in the absence of commitment.

enforcement agent.<sup>3</sup> We will refer to this latter process as lobbying.

Although the enforcement agent cannot directly observe whether the bank has complied with the regulation, she may, at time 2, spend  $C$  in order to obtain hard evidence on whether the bank did so. We will refer to this act as an investigation. If the bank has complied at time 1, or the enforcement agent does not investigate, no evidence is produced and nothing further happens. If, however, the bank has violated the regulation at time 1 and the enforcement agent has started an investigation, evidence of this violation is produced with certainty. If evidence has been obtained, the enforcement agent imposes a regulatory enforcement action on the bank, which forces the bank to comply with the regulation. We assume that compliance that has been forced via a regulatory enforcement action comes at a cost  $f$  for the bank. To fix ideas, we assume that  $f$  comes in the form of a welfare neutral payment of a fine. However, the results of our model would be qualitatively the same if some of this extra cost was due to indirect adverse effects of a regulatory enforcement action such as reputational damage.

Due to our assumption that evidence is produced if and only if the enforcement agent spends  $C$  to investigate, the probability  $p$  that the agent investigates is also a non-compliant bank's probability of receiving an enforcement action. Therefore, we refer to the mapping of the enforcement agent's information, which may include whether a bank has lobbied and, if so, the bank's type  $\theta$ , into an enforcement probability  $p$  as the enforcement strategy. Implementing an enforcement probability  $p$  costs the enforcement agent  $Cp$ .<sup>4</sup>

At time 3, payoffs are realized. If the bank has complied with the regulation, its payoff will be  $S$  with certainty. If the bank has not complied, payoff is risky. With probability  $\theta$ , a high payoff  $R > S$  is realized.<sup>5</sup> With probability  $1 - \theta$ , the bank defaults and gets a payoff of zero, which imposes a negative externality  $B$  on society. Last, if the bank has initially not complied but was forced to comply because of an enforcement action, its payoff will be  $S - f$  with certainty. Expected social welfare is  $S$  with and  $\theta R - (1 - \theta)B$  without compliance, less the enforcement agent's cost of investigation if applicable.

The information revealed via the lobbying process is valuable for the enforcement agent as it allows her to assess the expected social costs of a violation of the regulation.

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<sup>3</sup>For simplicity, we assume that this communication of  $\theta$  is perfectly accurate, but the model's qualitative results would not change if we assumed that it comes in the form of a noisy signal.

<sup>4</sup>Instead of this deterministic investigation process, we could, for instance, assume that an investigation against a non-compliant bank only produces evidence with probability  $\sigma$ . This would restrict the range of implementable enforcement probabilities to  $p \in [0, \sigma]$  and increase the cost of implementing an enforcement probability  $p$  to  $\frac{Cp}{\sigma}$  but leave all results of the model qualitatively unchanged.

<sup>5</sup>For instance, such a payoff structure emerges when a bank does and does not comply with capital adequacy rules in Feess and Hege (2011) and Feess and Wohlschlegel (2018).

On the other hand, a bank that is already complying with the regulation will never have an incentive to lobby. Hence, the enforcement agent can infer with certainty that a lobbying bank has violated the regulation. As a result, investigating a lobbying firm will be more likely to result in evidence than investigating a non-lobbying firm. It is this trade-off that our model is mainly concerned with.

## 2.2 Optimal Enforcement with Symmetric Information

Suppose that the enforcement agent was able to observe the bank's type  $\theta$  and whether it has complied with the regulation, so that there is no need for the bank to lobby, although the enforcement agent would still have to spend  $C$  in order to potentially find valid evidence. Obviously, the enforcement agent will not spend  $C$  for evidence if she observes the bank to have complied with the regulation. If the enforcement agent observes a violation, an enforcement action imposes a welfare neutral payment of the fine  $f$  on the bank and forces it to comply with the regulation. If, after observing a violation, the enforcement agent invests  $C$  with probability  $p$ , and imposes an enforcement action on the bank whenever she finds evidence, social welfare is

$$w^{SI}(\theta, p) = pS + (1 - p)(\theta R - (1 - \theta)B) - pC. \quad (1)$$

The enforcement agent will choose this enforcement probability  $p$  so as to maximize  $w^{SI}(\theta, p)$ . As this function is linear in  $p$ , the optimal choice of enforcement probability conditional on observing that a type  $\theta$  bank has violated the regulation is

$$p^{SI^*}(\theta) = \begin{cases} 1, & \text{if } \theta < \hat{\theta} := \frac{S+B-C}{R+B}; \\ 0, & \text{otherwise.} \end{cases} \quad (2)$$

Anticipating this enforcement probability, a type  $\theta$  bank will comply with the regulation if and only if  $\theta < \hat{\theta}$  and violate it otherwise. In equilibrium, no evidence will be generated and no enforcement actions imposed.

## 2.3 Asymmetric Information and No Lobbying

In reality, enforcement agents do not know for sure yet whether a bank has complied with the regulation when they initiate an investigation, and they are not completely informed about all relevant characteristics of this bank. Therefore, we will now analyze the case where, absent lobbying, the enforcement agent needs to choose the enforcement probability  $p$  unconditionally. We restrict attention to pure-strategy equilibria where the bank's investment choice  $i$  is concerned, so that the consistent beliefs  $G(\cdot)$  are identical either to  $H_I(\cdot)$  or to  $H_0(\cdot)$ . A non-compliant type  $\theta$  bank's expected payoff is  $p(S - f) +$



$(1-p)\theta R$ . When complying, payoff is  $S$  with certainty. Hence, the bank complies if and only if

$$\theta < \tilde{\theta}(p) := \frac{S + \frac{p}{1-p}f}{R}. \quad (3)$$

The threshold  $\tilde{\theta}(p)$  is increasing in  $p$ , and types below  $\tilde{\theta}(0) = \frac{S}{R}$ , are so bad at managing risks that they would comply even without any threat of enforcement action. The enforcer can achieve full compliance by setting  $p$  so high that  $\tilde{\theta}(p) \geq 1$ , which is the case if  $p \geq \tilde{p} := \frac{R-S}{R-(S-f)}$ .

For partial compliance,  $p < \tilde{p}$ , expected welfare is

$$W^{NL}(p) = S - (1-p) \int_{\tilde{\theta}(p)}^1 (S - \theta R + (1-\theta)B)g(\theta)d\theta - \frac{Cp}{\sigma}, \quad (4)$$

which is the social benefit of a complying bank less the social loss due to a non-complying bank not receiving an enforcement action, less the enforcer's cost of achieving the enforcement probability  $p$ . The first derivative with respect to  $p$  is

$$\begin{aligned} W^{NL'}(p) &= \int_{\tilde{\theta}(p)}^1 (S - \theta R + (1-\theta)B)g(\theta)d\theta + (1-p)(S - \tilde{\theta}(p)R \\ &\quad + (1 - \tilde{\theta}(p))B)g(\tilde{\theta}(p))\tilde{\theta}'(p) - C. \end{aligned} \quad (5)$$

The enforcement agent will choose the enforcement probability  $p$  so as to maximise  $W^{NL}(p)$ .<sup>6</sup>

## 2.4 Lobbying

If lobbying is available to banks as a way to accurately and credibly communicate their type  $\theta$  to the enforcement agent, the latter can make the enforcement probability contingent on some features that are now observable: She can implement different enforcement probabilities for non-lobbying ( $p^N$ ) and lobbying ( $p^L$ ) banks and, if the bank has used lobbying to reveal its type  $\theta$ , different probabilities  $p^L(\theta)$  for different types. We will analyze this scenario in two steps: First, we will determine the optimal enforcement strategy towards lobbying banks for a given enforcement probability  $p^N$  for non-lobbying firms. Based on this result, we will then analyze the optimal enforcement strategy over all and derive hypotheses for the empirical exercise.

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<sup>6</sup>If  $W^{NL}(p)$  is concave, substituting for  $\tilde{\theta}(p) = \hat{\theta}$  in (5) shows that the optimal enforcement strategy in the case of asymmetric information and no lobbying achieves less deterrence than that in the case of symmetric information. Whether  $W^{NL}(p)$  is indeed concave depends crucially on the shape of the beliefs  $G(\cdot)$ . Note that our main theoretical result, Proposition 1, does not require concavity of  $W^{NL}(p)$ .

Recall that a non-lobbying bank will comply if and only if  $\theta \leq \tilde{\theta}(p^N)$ . Therefore, a type- $\theta$  bank's payoff when not lobbying is

$$\Pi^N(\theta) = \begin{cases} S, & \text{if } \theta \leq \tilde{\theta}(p^N); \\ p^N(S - f) + (1 - p^N)\theta R, & \text{otherwise.} \end{cases} \quad (6)$$

The contribution of this non-lobbying type  $\theta$  bank to social welfare is

$$w^N(\theta; p^N) = \begin{cases} S, & \text{if } \theta \leq \tilde{\theta}(p^N); \\ p^N S + (1 - p^N)(\theta R - (1 - \theta)B), & \text{otherwise.} \end{cases} \quad (7)$$

A bank that complies with the regulation has no benefit from lobbying in our model. Hence, only non-complying banks would ever lobby. If a bank does not comply but lobbies, it anticipates an enforcement probability  $p^L(\theta)$  according to the scheme that the regulator is committed to. Hence, a lobbying bank's payoff is

$$\Pi^L(\theta) = p^L(\theta)(S - f) + (1 - p^L(\theta))\theta R - L, \quad (8)$$

and its contribution to social welfare

$$w^L(\theta; p^L(\theta)) = p^L(\theta)S + (1 - p^L(\theta))(\theta R - (1 - \theta)B) - L. \quad (9)$$

As one would expect, the ex-post optimal enforcement strategy against lobbying banks carries over from the symmetric information case: For given type  $\theta$ ,  $w^L(\theta)$  is increasing in  $p^L(\theta)$  if and only if  $\theta < \hat{\theta}$ . However, the enforcement agency will also anticipate the effect of her choice of  $p^L(\cdot)$  on whether a type- $\theta$  bank will lobby (henceforth denoted by  $\ell = 1$ ) or not ( $\ell = 0$ ) in the first place. Hence, for a given enforcement probability  $p^N$  for non-lobbying banks, the enforcement agency chooses a schedule  $p^L(\theta)$  so as to

$$\begin{aligned} \max_{p^L(\theta)} \quad & \ell w^L(\theta; p^L(\theta)) + (1 - \ell)w^N(\theta; p^N) \\ \text{s.t.} \quad & \ell = \begin{cases} 1, & \text{if } \Pi^L(\theta) \geq \Pi^N(\theta); \\ 0, & \text{otherwise.} \end{cases} \end{aligned} \quad (10)$$

For instance, a bank that would want to violate the regulation even absent lobbying ( $\theta > \tilde{\theta}(p^N)$ ) needs to be motivated to lobby by a lower enforcement probability under lobbying  $p^L(\theta) < p^N$ . If  $\theta < \hat{\theta}$ , this lowering of the enforcement probability reduces welfare, and recall that lobbying comes at a cost  $L$ . Hence, the enforcement agency will never want to induce a bank with type  $\theta \leq \hat{\theta}$  to lobby.

If  $\theta > \hat{\theta}$ , the enforcement agent would prefer not to impose an enforcement action if she knew the bank's type. If, therefore, the enforcement agency learns the bank's type via lobbying, the ex-post optimal enforcement probability is  $p^L(\theta) = 0$ , and this also provides

maximum incentives to lobby. Hence, the optimal enforcement strategy is  $p^L(\theta) = 0$  if the social benefit from not investigating a type- $\theta$  bank is enough to cover the lobbying costs  $L$  ( $w^L(\theta; 0) > w^N(\theta; p^N)$ ), and  $p^L(\theta) = 1$  otherwise. The following Lemma shows that this qualitative result is generally true.

**Lemma 1** *Consider a given enforcement probability  $p^N$  for non-lobbying banks. There is a threshold type  $\bar{\theta}(p^N) > \hat{\theta}$  such that the enforcement regulator's optimal enforcement strategy of lobbying banks is  $p^L(\theta) = 0$  if  $\theta > \bar{\theta}(p^N)$ , and the bank will, in equilibrium, lobby if and only if  $\theta > \bar{\theta}(p^N)$ .*

**Proof.** See the Appendix. ■

This result characterizes the equilibrium under lobbying: The enforcement agency promises to leave lobbying banks alone, but only if the information that emerges in the lobbying process confirms that they are of high quality. This allows the enforcement agent to focus her costly investigation effort on the non-lobbying banks, which are, in equilibrium, of low quality. Of course, the specific discussion above rests on the assumption that lobbying reveals the bank's type perfectly, but the result would be qualitatively the same if lobbying only revealed a noisy signal of the bank's type to the enforcement agent.

However, if lobbying made no information on the bank's type observable at all, such an enforcement strategy would not be incentive compatible: Without the threat of investigating lobbying banks below the quality threshold with even higher probability, low-quality banks would have an incentive to imitate high-quality banks by lobbying. This would be exactly the scenario discussed in the introduction, in which the only information content of lobbying is that of non-compliance as compliant banks can never benefit from lobbying. In such a case, however, it would be optimal to investigate lobbying banks with probability 1 rather than 0, which in turn would wipe out any incentive to lobby. In other words, the equilibrium characterized by 1 only exists in a model in which lobbying makes the bank's type observable at least to some extent.<sup>7</sup>

With the result of Lemma 1 in mind, the enforcement agent can optimize her enforce-

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<sup>7</sup>That is to say, lobbying cannot serve as a 'signal' in the game theoretic sense.

ment probability  $p^N$  for non-lobbying banks. The objective function is

$$\begin{aligned}
W^L(p^N) &= \int_0^{\tilde{\theta}(p^N)} w^N(\theta, p^N) dG(\theta) + \int_{\bar{\theta}(p^N)}^1 w^L(\theta, p^L(\theta)) \\
&= \int_0^{\tilde{\theta}(p^N)} \left( S - \frac{Cp^N}{\sigma} \right) dG(\theta) \\
&\quad + \int_{\bar{\theta}(p^N)}^{\tilde{\theta}(p^N)} [p^N(S - C) + (1 - p^N)(\theta R - (1 - \theta)B)] dG(\theta) \\
&\quad + \int_{\bar{\theta}(p^N)}^1 (\theta R - (1 - \theta)B - L) dG(\theta)
\end{aligned} \tag{11}$$

The first derivative of this function is:

$$\begin{aligned}
W^{L'}(p^N) &= (1 - p^N) \left( S - \frac{Cp^N}{\sigma} - \tilde{\theta}(p^N)R - (1 - \tilde{\theta}(p^N))B \right) g(\tilde{\theta}(p^N)) \frac{d\tilde{\theta}(p^N)}{dp^N} \\
&\quad - CG(\bar{\theta}(p^N)) + \int_{\bar{\theta}(p^N)}^{\tilde{\theta}(p^N)} (S - \theta R + (1 - \theta)B) dG(\theta) \\
&= W^{NL'}(p^N) - \int_{\bar{\theta}(p^N)}^1 (S - C - \theta R + (1 - \theta)B) dG(\theta)
\end{aligned} \tag{12}$$

As  $\bar{\theta}(p^N) > \hat{\theta}$ , this implies that  $W^{L'}(p^N) > W^{NL'}(p^N)$ . For instance, if both  $W^L(\cdot)$  and  $W^{NL}(\cdot)$  have a unique interior solution that satisfies the first-order condition that the first derivative be zero, this comparison implies for the unique  $p_{NL}^N$  that maximizes  $W^{NL'}(\cdot)$ , that  $W^{L'}(p_{NL}^N) > 0$ , so that the optimal choice  $p_L^N$  if lobbying is available is strictly larger than that if lobbying is unavailable. The following proposition establishes this relation generally:<sup>8</sup>

**Proposition 1** *The optimal enforcement probability  $p_L^N$  for non-lobbying firms if lobbying is available is larger than the optimal enforcement probability  $p_{NL}^N$  if lobbying is unavailable.*

**Proof.** See the Appendix. ■

Proposition 1 is the main result of the theoretical model and sums up why responding to lobbying with a reduced investigation probability is attractive for the enforcement agent: The information shared by a lobbying bank allows the enforcement agent to focus enforcement effort on the most harmful banks, which increases the social benefit from enforcement. As a consequence, the socially optimal level of enforcement is higher than without lobbying.

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<sup>8</sup>That is to say, the Proposition holds irrespective of whether the objective functions are smooth or concave, or whether the maximum of either function is unique. In particular, if there are multiple solutions to either optimization problem, we follow Milgrom and Shannon (1994) by using the strong set order to compare the argmax sets.

## 2.5 Testable Hypotheses

There are a number of testable hypotheses that can be derived from the equilibrium derived in the theoretical analysis above. However, while some of the model parameters translate into observable variables quite straightforwardly, a central feature of our model is the bank's private information on its type  $\theta$ , which would mean that we inherently expect this variable to be unobservable in reality. We argue that this unobservable quality can be proxied by information that we have about the quality of corporate governance in a bank's parent company.

In our model, the reason for lobbying is to communicate otherwise unobservable information about the bank's quality to the regulator, so that it is banks with high  $\theta$  that lobby in equilibrium.

**Hypothesis 1** *Banks with better corporate governance are more likely to lobby.*

Furthermore, banks that have violated the regulation should, *ceteris paribus*, more likely to be penalized than banks that have complied with it. Therefore, the bank's expected benefit from using lobbying to convince the regulator of the bank's quality is higher for violating banks.

**Hypothesis 2** *Banks that have violated the regulation are more likely to lobby.*

Banks will only have an incentive to lobby if they are less likely to be punished than in the case where they do not lobby.

**Hypothesis 3** *Lobbying high-quality banks are less likely to be punished than non-lobbying high-quality banks.*

Finally, the equilibrium that we have derived exhibits high-quality banks to be more likely to violate the regulation and lobby. If they did not lobby, they would be more likely to be penalized and, as a consequence, forced to comply with the regulation. Therefore, lobbying banks can be expected to be more successful for two reasons: a selection effect, because the decision to lobby is correlated with quality, and a punishment effect, because lobbying banks are more likely to be allowed to go ahead with their risky strategy, which they are good at because of their high type.

**Hypothesis 4** *In equilibrium, lobbying high-quality banks perform better than non-lobbying high-quality banks.*

## 2.6 Incentives to Invest in Quality

An obvious next question is whether the availability of lobbying increases or reduces the bank's incentives to invest in quality. Of course, the enforcement agency's beliefs on the bank's type depends on whether the bank invests in quality in equilibrium: If the bank does invest in equilibrium, the enforcement agency will believe that high types are more and low types less likely than if it does not. Given the optimal enforcement strategy based on these beliefs, there is an equilibrium in which the bank invests in quality if and only if it cannot gain by unilaterally deviating to not investing, given that the enforcement agency's beliefs are based on the distribution  $H_I(\cdot)$  with investment.

As the costs of that investment are independent of the lobbying regime and the enforcement strategy, comparing investment incentives with and without lobbying available boils down to comparing the benefit from that investment under both regimes, which is basically to increase the probability of being a high and reduce that of being a low type. In order to compare this benefit with and without lobbying available, we need to compare the bank's equilibrium profit under each regime for every type. If, based on the distribution of types that emerges when the bank invests in quality ( $i = I$ ),  $p^{NL}$  is the equilibrium detection probability when lobbying is not available and  $p^N$  that for non-lobbying banks when lobbying is available, Proposition 1 has shown that  $p^{NL} < p^N$ , which in turn implies that  $\tilde{\theta}(p^{NL}) < \tilde{\theta}(p^N)$ , i.e., there are types that comply with the regulation when lobbying is available but don't when it is not (but not *vice versa*).

For types that comply with the regulation in equilibrium,  $\theta \leq \tilde{\theta}(p^{NL})$ , the bank's profit is independent of whether or not lobbying is available, as these types of bank would comply with the regulation under either regime. If  $\tilde{\theta}(p^{NL}) < \theta \leq \min \left\{ \tilde{\theta}(p^N), \bar{\theta}(p^N) \right\}$ , the bank's profit is lower with lobbying available, as the bank in this case complies with the regulation, which it would violate under the laxer enforcement regime if lobbying was not available. Last, if  $\tilde{\theta}(p^N) < \theta \leq \bar{\theta}(p^N)$ , the bank violates the regulation with or without lobbying available, but profit is lower in the former case due to  $p^{NL} < p^N$ .

The bank's profit with and without lobbying available cannot be compared in the same definitive way if  $\theta > \bar{\theta}(p^N)$ , with the exception of the case where  $\theta$  is so large that the bank would prefer lobbying with an enforcement probability  $p^L(\theta) = 0$  to not lobbying even if  $p^N$  was equal to  $p^{NL}$ , in which case we can definitively conclude that the bank's profit is higher if lobbying is available. However, the following proposition is true over the entire range of types  $\theta$ :

**Proposition 2** *For any pair of enforcement probabilities  $p^{NL} < p^N$ , there exists a threshold type  $\theta^I$  such that a bank's profit is weakly lower (higher) when lobbying is available than when it is not if  $\theta < \theta^I$ .*

**Proof.** See the Appendix. ■

Proposition 2 implies that the impact of the availability of lobbying on the bank's equilibrium profit is strictly monotonic in the bank's type. Whether this means that investment incentives are higher in the presence of lobbying depends on the distributions  $H_I(\cdot)$  and  $H_0(\cdot)$ : If types above (below)  $\theta^I$  are more (less) likely under  $H_I(\cdot)$ , the availability of lobbying increases investment incentives. However, if there are also some types above (below)  $\theta^I$  that get less (more) likely, this countervailing effect may, if it is sufficiently large, reduce investment incentives.

### 3 Sample, data and variable selection

The main objective of the empirical analysis will be to examine how the lobbying and the enforcement decisions and corporate governance quality are interrelated. Regulatory enforcement actions are imposed on Commercial and Savings banks and, as such, will largely depend on their financial characteristics. However, these banks do not usually lobby by themselves. Instead, their parent Bank Holding Companies lobby on their behalf.

As a consequence, we will need to work with two different samples to analyze our research question: (i) the *Bank Holding Company Sample* which consists of 173 large listed US Bank Holding Companies, and (ii) the *Subsidiary sample*, which consists of 684 Commercial and Savings Banks and are subsidiaries of the Bank Holding Companies included in (i). The data in both samples refer to the years from 2002 until 2017. The choice of the Bank Holding Companies included in our sample, as well as the time-frame, are mainly driven by the availability of the Corporate Governance indicator, which is one of the core variables of interest of our study. Data is collected from the following sources: (i) Financial characteristics and Enforcement Actions are obtained by SNL Financial, (ii) Lobbying information is hand collected by the Center of Responsive Politics website and (iii) Corporate Governance information is retrieved by Datastream.

The sections below provide an overview of the construction of our working sample, as well as a detailed description of the variables included in our analysis. We also include tables with their descriptive statistics. A full list of the variables can be found in Table 1.

*Insert Table 1 about here*

### 3.1 Bank Holding Company sample

We will start our analysis by focusing on the motives behind the lobbying decision of a Bank Holding Company. In order to do so, we focus on the quality of a Bank Holding Company’s Corporate Governance, while controlling for financial and other characteristics.

All information in regard to lobbying activity is hand collected from the lobbying database and filing archives of the United States Senate and the ‘Open Secrets’ website of the Center for Responsive Politics (CRP). Information is available from 1998 to date. The Lobbying Disclosure Act of 1995 requires lobbyists to register and report information on their activities to the Senate Office of Public Records (SOPR). The SOPR keeps an archive of these files, which is available to the public. We thus, collect the compiled data on lobbying activities as provided by the CRP. This information includes various files which provide details on the lobbying reports that each Bank Holding Company files. Such reports are provided on firm-level. In regard to financial institutions, the majority of reports are filed by a bank’s parent company (i.e. the Bank Holding of Financial Holding Company). For the purpose of the present analysis, we obtain information on lobbying report files from 2002 to 2017. Once lobbying information is gathered and matched with each Bank Holding Company of our sample, we create a dummy variable, *Lobbying*, which takes ‘1’ if a Bank Holding Company has filled a lobbying report in a given year, and ‘0’ otherwise.

In order to capture the overall quality of a Bank Holding Company’s Corporate Governance systems and processes, we make use of an indicator (‘Management Score’) provided by Datastream, which is defined to measure a company’s commitment and effectiveness towards following best practice corporate governance principles. In essence, this indicator reflects a company’s key areas of corporate governance such as board structure, compensation policy, board functions, shareholder rights and its vision and strategy. We make use of this indicator (*cgov\_bhc*) in our analysis as a proxy for a Bank Holding Company’s corporate governance quality. Higher values indicate better governance, and vice versa.

Finally, we control for several financial and demographic characteristics. Following empirical precedent (e.g. Gibson, Odabasioglu, and Padovani (2018)), we include a measure of capitalisation with the equity to assets ratio (*cap\_bhc*) and performance with return on assets (*roa\_bhc*). Furthermore, we take into consideration the Bank Holding Company’s age (*age\_bhc*) and number of depository subsidiaries (*depository\_number*), in order to account for the magnitude and significance of the institution. In addition, we consider a set of characteristics, which capture the financial condition of the Bank Holding Company’s subsidiary banks. In particular, we control for the average profitability (*ROA*



(*mean*) and non-performing loans (*NPL (mean)*) of each Bank Holding Company’s subsidiaries. More precisely, we construct these measures as follows: (i) For the average value of performance (*ROA (mean)*), we create a variable that takes the mean return on assets ratio of the subsidiary banks of each Bank Holding company at year  $t$ , and (ii) for the average value of non-performing loans (*NPL (mean)*), we create a variable that takes the mean non-performing loans ratio of the subsidiary banks of each Bank Holding company at year  $t$ . Last but not least, we also control for the geographical distance of the Bank Holding Company’s headquarter location to DC (*distance\_bhc*) and for the extent of financial sector employment (*fin\_employment*) recorded in the state where the Bank Holding Company operates.

*Insert Table 2 about here*

Table 2 reports the descriptive statistics of the aforementioned variables. The Governance Indicator (*cgov\_bhc*) ranges from 0.12 to 99.65, where lower values indicate lower quality of governance and higher values indicate higher quality of governance. In our sample of Bank Holding Companies, the average score is equal to 48.37, which is lower than the score of lobbying – only banks (53.15). In terms of the remaining variables it is noteworthy that for the lobbying sample, the average age and number of subsidiary banks is higher. Moreover, the mean distance to DC for the lobbying banks appears to be lower.

### **3.2 Subsidiary level sample**

We will continue our analysis by examining whether a Bank Holding Company’s lobbying activity is successful in terms of lower probability of enforcement by the regulator against its subsidiary. In order to assess this, we gather information on regulatory enforcement actions issued against Commercial and Savings Banks for the time frame between 2002-2017. In order to identify whether a Commercial Bank or Saving Bank’s parent engages in lobbying activities, we follow prior literature (Lambert (2019)) and insert lobbying information for each subsidiary from the Bank Holding Company level.

Data on enforcement actions issued by the three federal regulatory agencies: Federal Reserve Bank (FRB), Federal Deposit Insurance Corporation (FDIC) and the Office of Comptroller of the Currency (OCC) are retrieved from SNL Financial. These enforcement actions refer to actions taken against Commercial or Savings banks, which are subsidiaries of the Bank Holding Companies in Sample (i). The types of actions taken (in order of severity) are: Deposit Insurance Termination, Cease and Desist orders, Formal Written and Prompt Corrective Action. A detailed description of each type along with their

classification can be found in Appendix D. For the purpose of our analysis, we focus on severe types of enforcement actions outlined above, as severe actions are more closely related to safety and soundness issues of banks. In contrast, less severe actions are usually issued against institutional affiliated parties and are, therefore, not related to deficiencies observed over the financial condition of an institution. Moreover, Delis, Staikouras, and Tsoumas (2016) show that less severe actions do not have an impact on a bank’s financial condition. We, thus, construct a dummy variable *severe* that takes the value of '1' if a bank received a severe type of regulatory enforcement action in a particular year, and the value of '0' otherwise.

We make use of a set of variables which are able to capture the CAMELS ratings, which form an integral part of the examination process. These ratings are confidential, and therefore we follow prior studies (e.g. Lambert (2019), Cole and White (2012)) and consider traditional proxies of each of the components. For this purpose, we take into account the risk-based capital ratio as a measure of capital adequacy (*cap*), and the risk weighted assets as a measure of asset quality (*asset*). Moreover, as a measure of earnings/performance we make use of the Return on Assets ratio (*roa*), and as a measure of liquidity the liquidity ratio (*liq*). Finally, we also include the size (*size*) and age (*age*) of the bank.

*Insert Tables 3 and 4 about here*

## 4 Empirical Analysis

### 4.1 Examining BHCs’ Lobbying Decision

The starting point of our analysis is to examine the motives behind a BHC’s decision to engage in lobbying activities. Due to the binary nature of our dependent variable ‘*lobbying*’ we opt to estimate the following Probit model:

$$Lobbying_{i,t} = \Phi(\alpha + \beta_1 Governance_{i,t} + \beta_2 Controls_{i,t} + \gamma state_k + \delta year_t + \varepsilon_{i,t}), \quad (13)$$

where *i* refers to the Bank Holding Company, *k* to the state and *t* to year *t*. The variable ‘*Lobbying*’ takes the value 1 if a Bank Holding Company filed a lobbying report in year *t*, and 0 otherwise. In order to test Hypothesis 1, the main variable of interest in explaining a BHC’s lobbying decision is the quality of the BHC’s corporate governance ‘*Governance*’, which serves as a proxy for the unobservable quality of the BHC and its subsidiaries. Furthermore, we control for a number of the BHCs’ characteristics including financial characteristics and company demographics, such as age or number of depository institutions held. In order to account for observable and unobservable characteristics

across states, we include a set of state dummies. Moreover, in order to address variation across time, we also include a set of year dummies. Equation 13 is estimated using robust standard errors.

*Insert Table 5 about here*

Results are reported in Table 5, Column (1). In line with Hypothesis 1, BHCs with higher corporate governance quality are more likely to lobby, as indicated by a positive and significant coefficient of the *Governance* variable. With regards to the control variables, we find that companies that are older and have a greater number of depository institutions are more likely to lobby. Furthermore, we control for two additional variables that could be potential drivers of lobbying activity. First, prior studies (Lambert (2019); Gibson, Odabasioglu, and Padovani (2018)) have shown that proximity to Washington, DC influences the costs associated with lobbying. In particular, firms that are located near to Washington, DC are closer to regulatory authorities and politicians. Thus, this enables lobbyists to interact easier with the aforementioned parties. Our result of a negative and significant coefficient confirms these previous studies. Second, we control for the importance of the financial services and insurance industry for the BHC's home state's economy, measured as the number of individuals employed in that industry in the respective state. Cunha (2017) considers financial services and insurance industry employment at the state/ district level as a determinant of voting patterns of policy-makers regarding the introduction of bills, as this helps to capture the influence of potential interests groups. In the case of our study, the magnitude of financial services and insurance industry employment could be a driver of lobbying activity, in the sense that as the number of people employed in this industry increases, banks are encouraged to engage in corporate political strategies (such as lobbying) in order to serve the needs/ demands of these interest groups. Indeed, the results indicate that higher financial sector employment is associated with higher lobbying activity.

In a next step, we seek to test more directly the theoretical model's main theme that lobbying is undertaken so as to shield banks that are in violation of regulation from regulatory enforcement. The idea is that large Bank Holding Companies could potentially be lobbying on behalf of their ailing subsidiaries in order to secure them more favourable supervisory treatment. In order to test this, we add financial characteristics of the BHC's portfolio of subsidiaries to our control variables. In particular, we use two variables that play an important role in the supervisory process: (i) average ROA and (ii) average non-performing loans ratio over all of this BHC's subsidiaries, respectively. Controlling for the financial position of a BHC's subsidiaries allows us to test how relevant the possibility of an enforcement action is for a BHC.

As these variables belong to the financial characteristics that the CAMELS rating is based on, which regulators use to assess whether banks have complied with the regulation, Hypothesis 2 predicts a positive coefficient for average non-performing loans and a negative coefficient for average ROA. The signs of both of these coefficients in Column (2) of Table 5 are in line with these predictions (significant on the 1% and the 5% level, respectively). All coefficients of variables that were already included in Column (1) remain qualitatively the same.

## 4.2 Examining Lobbying Success

We have just shown that a BHC’s decision to lobby is significantly related to the financial variables in its portfolio of subsidiaries. Given our explanation of this relationship, that BHCs’ lobbying may shield their subsidiaries from an enforcement action, a plausible next step of the analysis is to examine the impact of a BHC’s lobbying activity on how likely its subsidiaries are to receive a regulatory enforcement action. Following Lambert (2019), we perform this analysis on the subsidiary level and make use of the subsidiary sample described in Section 3. In particular, we estimate the following Probit model:

$$\begin{aligned} Severe_{i,t} = & \Phi(\alpha + \beta_1 Governance_{i,t} + \beta_2 Lobbying_{i,t} + \beta_3 Governance * Lobbying_{i,t} \\ & + \beta_4 Controls_{i,t} + \gamma state_k + \delta year_t + \zeta regulator_p + \varepsilon_{i,k,t}) \end{aligned} \quad (14)$$

where  $i$  refers to Bank Holding Company,  $k$  to the state,  $t$  to the year and  $p$  to the regulator. Our dependent variable ‘*severe*’ is a dummy indicating whether or not a subsidiary has received a regulatory enforcement action of the severe type. Due to the binary nature of our dependent variable, we estimate a Probit model with robust standard errors. The *lobbying* dummy indicates whether or not a subsidiary’s parent company (BHC) has engaged in lobbying in a particular year. We additionally control for the quality of the BHC’s corporate governance as a proxy for the quality that the BHC communicates to the regulator in the lobbying process.<sup>9</sup> Furthermore, in order to capture the potential heterogeneity of the impact of lobbying on punishment across banks with different levels of governance quality as hypothesised in the theoretical model, we control for the interaction of these variables, the coefficient of which is of main interest. We also control for a set of variables that capture the CAMELS components, namely capitalisation *Capital*, asset quality *Asset*, *Earnings* and *Liquidity*. Moreover, we take a bank’s *Size* and *Age* into consideration. Results are reported in Table 6.

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<sup>9</sup>Although the subsidiary has its own board and governance policies, prior studies (Adams and Mehran (2003)) have highlighted that there could be a potential influence of corporate governance in a parent company on its subsidiaries.

*Insert Table 6 about here*

The baseline specification of our model can be found in Column (1). The *lobbying* dummy is positive and statistically significant at the 1% level. In light of the theoretical model and the closely related study by Lambert (2019), who finds a negative and statistically significant impact of lobbying on regulatory enforcement outcome, this result seems surprising at first glance. However, recall that we control for the interaction of lobbying and governance quality so as to examine the impact of lobbying on enforcement likelihood for different levels of corporate governance quality. Therefore, the positive coefficient of the lobbying dummy needs to be interpreted as the conditional relationship between lobbying and punishment for subsidiaries of low-governance BHCs. Indeed, Hypothesis 3 predicts a negative relationship between lobbying and punishment only for high-quality banks, and the negative coefficient of the interaction term of lobbying and governance is in line with this. Table 7, which depicts the predicted marginal effects of the lobbying parameter for different values of corporate governance quality, confirms that this marginal effect is indeed negative if governance quality is sufficiently high and, thus, supports Hypothesis 3.<sup>10</sup> The picture is even clearer in Figure 1, which plots the marginal effects. It is apparent that, as the *Governance* score increases, the relationship between lobbying and enforcement action likelihood becomes inverse.

*Insert Table 7 and Figure 1 about here*

In terms of the remaining control variables, most appear to be in line with prior literature. In particular, we find that banks with low levels of capital and profitability are more likely to be punished. These findings are to be expected, as these financial characteristics are known to be important components of the CAMELS ratings and, thus, to determine whether a bank is at risk of being penalized.

Columns (2) – (9) of Table 6 show that the main result of this Table, the negative coefficient of the interaction of lobbying and governance quality, is robust for a number of sample restrictions: First, we exclude high capitalised (Column 2) and low capitalised (Column 3) banks, by removing the top and bottom 5% of banks. The purpose of this test is to confirm whether our baseline results hold when well or poor capitalised banks are removed from the sample, as these cases could be driving the relationship observed thus far. Second, we exclude large (Column 4) and small (Column 5) banks, by removing the

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<sup>10</sup>Ai and Norton (2003) outline potential complications regarding the interpretation of interaction terms in non-linear models. Norton, Wang, and Ai (2004) however, provide several alternative solutions in order to address these complications. We use these suggestions to estimate the marginal effects for different values of the Governance measure.

top and bottom 5% of banks, respectively. As previously, the main purpose is to isolate any potential impact from either very large or very small firms present in the sample. Third, we exclude the years of the financial crisis. The time frame of the study includes the years during which the global financial crisis took place. This as an event itself could potentially influence and drive the results obtained thus far. Moreover, as shown in the descriptive statistics in Table 3, enforcement actions increased during those years. We therefore re-estimate our baseline model by excluding the years 2008-2011. Results are presented in Column (6). The final set of tests refers to examining differences across regulatory agencies. We re-estimate our baseline model for FDIC (Column 7), FED (Column 8) and OCC -only (Column 9) supervised banks. Overall, after performing these exercises, the overall results of they key variable of interest (i.e. the governance and lobbying interaction term) remains the same in sign and significance in almost all cases. In particular, the only case for which coefficients turn insignificant, is that in Column (9), where the sample is restricted for OCC-supervised banks only.

The evidence that we have provided thus far suggests that lobbying is associated with a lower probability of receiving an enforcement action if the BHC's corporate governance quality is high. An important concern at this point is, however, that lobbying might be endogenous. For instance, the BHC's lobbying decision might be correlated with some unobservable variable that also drives the regulator's enforcement decision. Alternatively, BHCs might anticipate that their subsidiaries are at risk of being penalized and accordingly choose to lobby the regulator. In either case, the parameter estimates in Table 6 would be biased. Indeed, we had argued in the theoretical model and Subsection 4.1 above that the financial situation of a subsidiary, which the regulatory enforcement decision is partly based on, is also an important determinant for its BHC's lobbying decision.

In order to address these concerns, we take into account the determinants of BHCs' lobbying decision by simultaneously estimating the lobbying decision and the impact of lobbying on enforcement actions. As both of these dependent variables are binary, we employ a recursive Bivariate Probit model. Just like in a two-stage least square model, the Bivariate Probit model requires an exclusion restriction, which means that the estimation of lobbying must include at least one variable or instrument that is not related to the enforcement decision.

As the decision of whether to lobby is made by the BHC, a strong instrument will most likely be a variable on the BHC level. Our analysis in Subsection 4.1 provides some candidates for determinants of the lobbying decision that are unlikely to be related to the enforcement decision. For instance, the Bank Holding Company's geographical distance to Washington, DC and the economic importance of the financial sector in the BHC's home state had highly significant coefficients in Table 5.

Another important result of Subsection 4.1 was that BHCs' lobbying decision seems to be influenced by the financial characteristics of their portfolio of subsidiaries. Due to these variables' relevance for the lobbying decision, we add them as instruments in a second specification of our Bivariate Probit model. They satisfy the exclusion restriction as a specific bank's probability of being penalized is unlikely to be related to the financial characteristics of the worst subsidiary in its BHC's portfolio. We include all of the BHC-level variables into the subsidiary-level analysis by assigning their value to each subsidiary of this BHC.

As further robustness checks, we alternatively use a linear probability model for the first stage (that explains the lobbying decision) and use IV-probit to estimate this. Again, there is a specification that does not use the average financial situation of a BHC's subsidiary portfolio as instruments, and another one that does.

*Insert Table 8 about here*

The results of these estimations are reported Table 8. Columns (1) and (3) display the results for the Biprobit model, and (2) and (4) those of the IV-probit specifications. In order to obtain diagnostics regarding the validity of the instruments and the overall identification of the equations, we independently re-estimate the model in the first stage in order to obtain the values of the LR- chi-square statistic. The p-value obtained is below 0.001, which confirms the significance of the model.<sup>11</sup> With regards to the results, the sign and significance of the coefficients of the lobbying and governance variables and their interaction in the enforcement equation are consistent with the Probit estimations in Table 6 that did not correct for endogeneity, and across the four models presented in Table 8.

### 4.3 Lobbying and performance

In the theoretical model, we had assumed that a higher type  $\theta$  is linked to higher performance of risky projects. As high- $\theta$  banks choose these risky projects in equilibrium, they also perform better in equilibrium than low- $\theta$  banks (Hypothesis 4). In the empirical analysis, we have so far showed that those BHCs are more likely to lobby that have better corporate governance scores and whose subsidiaries are more at risk of receiving an enforcement action, and that lobbying can reduce this penalty risk. However, we have not made any enquiries about the regulators' potential motives for reacting to lobbying in this way, whether it is due to information about governance quality that lobbying banks reveal

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<sup>11</sup>Recall that the significant coefficients of the instruments in our estimations in Subsection 4.1 may serve as further evidence for their relevance.

in order to convince the regulator that it is socially optimal to let them go, or whether it is due to rent seeking considerations such as exchanges of favours between lobbying banks and regulators. Prior studies have found mixed evidence on the impact of political connections on firm performance: For example, Gropper, Jahera Jr, and Park (2013, 2015) find that banks connected to politicians through important Finance Committees perform better, whereas, focusing on the lobbying context, Lambert (2019) finds that in the short to medium run, lobbying banks perform worse in comparison to non-lobbying banks.

Therefore, we test how lobbying banks in our sample perform some time after the lobbying has occurred. In particular, we seek to explain future bank performance in the short term (i.e. at  $t+1$  years) and long term (i.e. at  $t+5$ ) years. As a proxy for performance, we use the Return on Assets ratio (ROA) as our dependent variable and estimate a linear regression model with bank fixed effects. Our core variable of interest is the lobbying dummy and its interaction with governance quality, but we also control for bank-level characteristics, such as capitalisation, liquidity, non-performing loans, size and age.

*Insert Table 9 and 10 about here*

The results from this model are presented in Table 9. Our findings in Column (2) suggest that, after 5 years, lobbying banks perform better than non-lobbying ones if they have high governance quality, which is exactly what Hypothesis 4 predicted, and these results are robust to correcting for endogeneity (Table 10, Columns 2 and 5).<sup>12</sup> For subsidiaries of low-governance BHCs, the opposite relationship holds. When correcting for potential endogeneity of the lobbying dummy, these effects can even be found in a much shorter term (Columns (1) and (3)).

Another interesting result of Table 9 is that punished banks perform slightly worse (better) in the short (long) run. This suggests that the reputation effect of a regulatory enforcement action might be rather short-lived, whereas in the long run, the benefits of disciplining banks to comply with the regulation seem to dominate.

## 5 Conclusion

The main focus of the present paper is twofold. First, we aim to provide further explanation on the motives behind the lobbying decision of Bank Holding Companies. This is linked to our conjecture that Bank Holding Companies engage in lobbying on behalf of

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<sup>12</sup>The diagnostics for over-identification (Hansen J) pass the recommended thresholds.



their ailing subsidiaries. Therefore, our second aim is to provide evidence on whether lobbying itself is linked to favourable supervisory treatment in terms of lower probability of enforcement. We address the above objectives in two ways. First, we develop a theoretical model that rationalizes the responsiveness of regulatory authorities in regard to lobbying, although lobbying banks appear to expose themselves to be violating the regulation. We explain this by assuming that the purpose of lobbying is to communicate some measure of bank quality that would otherwise be unobservable to the regulator. Not penalizing lobbying, high-quality banks allows the regulator to focus her costly enforcement effort on the lower-quality non-lobbying banks.

The theoretical model yields a set of hypotheses, which we then test empirically. More precisely, we make use of a panel data set of 173 large US Bank Holding Companies in order to examine the determinants of lobbying. A key element of our analysis is that we use corporate governance as a proxy for the unobservable quality that we assume the Bank Holding Company to communicate by lobbying. Our key findings suggest that Bank Holding Companies with stronger corporate governance and a poorly performing portfolio of subsidiaries are more likely to lobby. This result is in line with our hypothesis that Bank Holding Companies whose subsidiaries are at risk of being punished engage in lobbying in order to reveal their quality to the regulatory agency.

In order to examine the second objective of our study, we make use of a panel data set of the Bank Holding Companies' subsidiaries. The main findings suggest that, in line with our theoretical predictions, whether a bank whose parent company has engaged in lobbying is more or less likely to receive a regulatory enforcement action depends on the parent company's corporate governance quality: Subsidiaries of high-quality (low-quality) Bank Holding Companies are less (more) likely to be punished when the Bank Holding Company has lobbied. Finally, we extend our analysis by showing that subsidiaries of lobbying, high-quality (low-quality) Bank Holding Companies perform better (worse) in the long term than the subsidiaries of their non-lobbying counterparts. Our findings are robust to alternative samples and econometric techniques aiming to address endogeneity issues.

In the theoretical analysis, we assumed that the enforcement agent can perfectly commit to an enforcement strategy beforehand, and that her objective function is perfectly aligned with social welfare. In reality, however, institutions that are in charge of the enforcement of regulations typically have their own objective functions to optimize, as they are held accountable for publicly observable targets, which may shift their goal from maximizing social welfare and create incentives to switch to ex-post optimal actions instead of ex-ante commitments.<sup>13</sup> Adjusting our assumptions so as to take these issues

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<sup>13</sup>The literature on delegated enforcement discusses the consequences of these problems, such as Be-

into account would not necessarily change our hypotheses, so that we cannot use our empirical analysis to test whether these inefficiencies exist. However, our theory can guide policy making with regards to the consequences of these problems for social welfare. For instance, if commitment is not available in our model but the enforcement agent still maximizes social welfare, she will use the ex-post optimal strategy to refrain from penalizing any lobbying firm with  $\theta > \hat{\theta}$ , which results in excessive lobbying. On the other hand, providing an enforcer with too high-powered incentives by, for instance, rewarding only the number of sanctions imposed, the optimal enforcement strategy would entail insufficient lobbying even if the enforcer can commit, as a rational enforcer would want to avoid those types of firms that have the least incentives to comply with the regulation to be shielded from enforcement via lobbying. These considerations demonstrate that the interplay of lobbying and enforcement needs to be taken into account by legislators when designing the institutional details of delegated enforcement.

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sanko and Spulber (1989), Bond and Hagerty (2010) or Büchel and Mühlheußner (2016).

Table 1: Variable description

Panel A. Bank Holding Company related variables			Source
Variable	Variable code	Description	
Lobbying	<i>lobbying</i>	Dummy that takes "1" if BHC files a lobbying report in year $t$ , "0" otherwise	Centre of Responsive Politics
Governance	<i>gov_bhc</i>	Index measuring a company's commitment and effectiveness towards following best practice corporate governance policies	Datastream
Performance	<i>roa_bhc</i>	Higher values indicate higher quality and vice versa.	SNL
Capitalisation	<i>cap_bhc</i>	Income (loss) before applicable income taxes and discontinued operations divided by total assets	SNL
Number of depository institutions	<i>depository_number</i>	Total qualifying capital divided by risk-weighted assets net of allowances and other reductions	SNL
Age	<i>age_bhc</i>	Sum of depository institutions owned by BHC	SNL
Distance to DC	<i>distance_bhc</i>	Natural logarithm of number of years that the bank's parent company is operating	SNL
Fin. sector employment	<i>fin_employment</i>	Flying distance (in km) from BHC's headquarter location to DC	SNL
Mean Performance (Subsidiary)	<i>ROA (mean)</i>	Natural logarithm of the total number of individuals employed in the financial services and insurance industry at the state level	U.S. Census Bureau
Mean Non-perf. Loans (Subsidiary)	<i>NPL (mean)</i>	Average value of ROA of BHC's subsidiary in year $t$	SNL
Panel B. Subsidiary related variables			
Severe Enf. action	<i>severe</i>	Average value of Non performing loans of BHC's subsidiary in year $t$	SNL
Capitalisation	<i>cap</i>	Dummy that takes "1" if bank received a severe-type regulatory enforcement action in year $t$ , "0" otherwise	SNL
Asset Quality	<i>asset</i>	Total qualifying capital divided by risk-weighted assets net of allowances and other reductions	SNL
Performance	<i>roa</i>	Risk-weighted assets net of allowances and other reductions divided by total assets	SNL
Liquidity	<i>liq</i>	Income (loss) before applicable income taxes and discontinued operations divided by total assets	SNL
Non performing loans	<i>npl</i>	Cash and cash balances plus US treasury securities divided by total assets	SNL
Size	<i>size</i>	Non-accrual and restructured loans as a percent of total loans and leases	SNL
Age	<i>age</i>	Natural logarithm of total assets	SNL
		Natural logarithm of number of years that the bank's parent company is operating	SNL

Table 2: Summary statistics for Bank Holding Company characteristics

<b>Panel A. Full sample</b>					
Variable	Obs	Mean	Std. Dev.	Min	Max
Governance	715	48.37365	28.38413	0.12	99.65
Capitalisation	689	11.97855	2.596312	6.79	33.6
Performance	695	0.0088751	0.0067993	-0.0600171	0.0364328
Number of depository institutions	715	1.551049	1.464274	0	16
Age	710	105.2662	55.8259	1	218
Fin. Sector employment	703	15.08818	0.860954	12.72089	16.4873
Distance to DC	715	7.005628	1.1123	2.547414	9.092468
ROA (mean)	715	1.490437	2.823402	-7.043333	24.10333
NPL (mean)	715	1.846481	2.208688	0	14.91
<b>Panel B. Lobbying sample</b>					
Governance	218	53.15284	28.29258	1.05	99.65
Capitalisation	216	11.4331	2.36886	6.79	19.15
Performance	216	0.0081356	0.0093224	-0.0600171	0.025473
Number of depository institutions	218	1.949541	1.453496	1	6
Age	218	133.2936	48.85194	14	218
Fin. Sector employment	209	15.29248	0.6620064	12.91844	16.4873
Distance to DC	218	6.939166	1.130203	5.725819	9.092468
ROA (mean)	218	1.114252	1.530599	-5.325	8.21125
NPL (mean)	218	2.813809	2.998015	0.1293333	14.91

Table 2 reports the descriptive statistics of the variables included in the first section of our analysis, which focuses on the lobbying decision of Bank Holding Companies. For a detailed definition of variables see Table 1. The sample period is 2002-2017. Panel A provides the descriptive statistics of the full sample. Panel B, provides the descriptive statistics for Bank Holding Companies engaged in lobbying activities.

Table 3: Summary statistics Enforcement Actions

Year	All Actions	FDIC	FED	OCC
2002	2	0	1	1
2003	4	1	2	1
2004	2	1	1	0
2005	3	0	0	3
2006	1	0	0	1
2007	0	0	0	0
2008	8	3	2	3
2009	14	8	4	2
2010	16	10	3	3
2011	12	3	1	8
2012	9	5	0	4
2013	6	2	1	3
2014	12	3	1	8
2015	8	2	1	5
2016	6	4	1	1
2017	2	0	1	1
Total	105	42	19	44

Table 4: Summary statistics for Subsidiary banks

<b>Panel A. Full sample</b>					
Variable	Obs	Mean	Std. Dev.	Min	Max
Capitalisation	2874	40.08364	97.0501	-1.49	570.92
Asset quality	2839	74.06471	20.28402	9.64	250.05
Performance	2858	1.398523	4.104111	-28.2	69.7
Liquidity	2736	26.06557	53.32765	0	497.64
Non-performing loans	2682	1.898576	3.49462	0	39.72
Size	2876	14.29704	2.402639	7.600903	21.48444
Age	2875	66.50157	54.47093	0	217
<b>Panel B. Punished sample</b>					
Capitalisation	105	12.41914	7.674172	-1.49	43.53
Asset quality	104	76.19663	11.8039	35.68	111.22
Performance	104	-0.7854808	2.88302	-11.68	4.54
Liquidity	105	19.17676	14.77127	1.42	79.23
Non-performing loans	105	7.554952	7.499041	0	27.95
Size	105	15.49523	3.022346	10.12607	21.45322
Age	105	75.59048	64.73447	2	20

Table 4 reports the descriptive statistics of the variables included in the second section of our analysis, which examines the probability of a Commercial and Savings banks being punished. These entities are all subsidiaries of the Bank Holding Companies included in the sample of our first section analysis. For a detailed definition of variables see Table 1. The sample period is 2002-2017. Panel A provides the descriptive statistics of the full sample. Panel B, provides the descriptive statistics for banks that received a regulatory enforcement action.

Table 5: Probability to lobby (Bank Holding Company level)

VARIABLES	(1)	(2)
	dep. varr: Lobbying	dep. varr: Lobbying
Governance	0.0132*** (0.00307)	0.0164*** (0.00337)
Capitalisation	-0.0491 (0.0547)	-0.0973* (0.0591)
Performance	-10.44 (10.07)	-7.487 (10.56)
Number of dep. Inst	0.225*** (0.0804)	0.235*** (0.0811)
Age	0.00517* (0.00288)	0.00734*** (0.00266)
Fin. Sector employment	9.011** (3.71)	9.662** (3.849)
Distance to DC	-0.244** (0.099)	-0.285*** (0.102)
ROA (mean)		-0.114*** (0.0328)
NPL (mean)		0.0963** (0.0486)
Constant	-125.1** (52.37)	-133.8** (54.27)
Observations	437	437
State Dummies	YES	YES
Time dummies	YES	YES
R-sq	0.358	0.379

Table 5 reports the baseline results of a Probit model with robust standard errors. Sample period is 2002-2017. The dependent variable in both (1) and (2) is the lobbying indicator variable. For detailed variable description see Table 1. The \*\*\*, \*\* and \* signs denote statistical significance at the 1,5 and 10% level.

Table 6: Probability to receive a regulatory enforcement action (Subsidiary level)

VARIABLES	Baseline model		Excl. high cap.		Excl. low cap		Excl. large banks		Excl. small banks		Excl. Fin. crisis		FDC only		FED only		OCC only		
	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	dep. varr: severe	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)										
Lobbying	0.708*** (0.243)	0.699*** (0.245)	0.348 (0.288)	0.776*** (0.262)	0.689*** (0.247)	0.699*** (0.245)	1.085** (0.429)	1.238* (0.634)	0.290 (0.505)										
Governance	0.00668** (0.00288)	0.00644** (0.00285)	0.00451 (0.00323)	0.00663** (0.00288)	0.00611** (0.00287)	0.00644** (0.00285)	0.00699 (0.00444)	-0.00850 (0.00931)	0.00976 (0.00603)										
Lobbying x Governance	-0.0121*** (0.00384)	-0.0121*** (0.00384)	-0.00907** (0.00424)	-0.0150*** (0.00442)	-0.0117*** (0.00384)	-0.0121*** (0.00384)	-0.0161** (0.00756)	-0.0703*** (0.0185)	-0.0100 (0.00684)										
Capitalisation	-0.0442*** (0.0140)	-0.0450*** (0.0145)	-0.0101 (0.00905)	-0.0371** (0.0153)	-0.0370** (0.0156)	-0.0450*** (0.0145)	-0.0596*** (0.0203)	-0.0828 (0.0635)	-0.0265* (0.0153)										
Asset quality	-0.00513 (0.00511)	-0.00501 (0.00499)	-0.00285 (0.00387)	-0.00510 (0.00533)	-0.00433 (0.00481)	-0.00501 (0.00499)	-0.0224 (0.0164)	-0.00718 (0.0172)	-0.00850 (0.00518)										
Performance	-0.168*** (0.0275)	-0.169*** (0.0278)	-0.0826*** (0.0308)	-0.161*** (0.0293)	-0.188*** (0.0338)	-0.169*** (0.0278)	-0.269*** (0.0510)	-0.350*** (0.127)	-0.142*** (0.0463)										
Liquidity	0.000790 (0.00534)	0.000686 (0.00539)	-0.00152 (0.00450)	-0.00625 (0.00674)	-0.000656 (0.00539)	0.000686 (0.00539)	-0.0124 (0.0137)	0.0378 (0.0370)	0.00161 (0.00612)										
Size	0.0273 (0.0351)	0.0174 (0.0379)	0.0490 (0.0403)	-0.0503 (0.0447)	0.0233 (0.0383)	0.0174 (0.0379)	0.00432 (0.0901)	-0.0981 (0.168)	0.143** (0.0712)										
Age	-0.000294 (0.00150)	-0.000347 (0.00146)	0.000533 (0.00151)	-0.000992 (0.00154)	-0.000272 (0.00147)	-0.000347 (0.00146)	-0.00695** (0.00341)	0.000355 (0.00594)	-0.00222 (0.00288)										
Constant	-1.747*** (0.662)	-1.681** (0.680)	-2.596*** (0.710)	-0.584 (0.817)	-1.788*** (0.669)	-1.681** (0.680)	1.229 (1.742)	0.344 (2.954)	-4.097*** (1.262)										
Observations	2,300	2,222	1,934	2,169	2,236	2,300	574	261	548										
Regulator Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes										
State Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes										
Time dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES										
R-sq	0.266	0.261	0.198	0.275	0.266	0.267	0.401	0.424	0.242										

Table 6 reports the baseline results of a Probit model with robust standard errors. Sample period is 2002-2017. The dependent variable across models is the severe enforcement action indicator variable. Column (1) reports the baseline results, whereas Columns (2)- (9) report the results of additional robustness tests performed. For detailed variable description see Table 1. The \*\*\*, \*\* and \* signs denote statistical significance at the 1,5 and 10% level.



Table 7: Average marginal effects for Baseline model in Table 6

at:	Governance values:	Average Marginal effects
1	0.12	0.0517874 *** (0.0193943)
2	4.13	0.0481306 *** (0.0179884)
3	7.24	0.0453069 *** (0.0169853)
4	23.39	0.0307739 ** (0.0130595)
5	50	0.0069816 (0.0112585)
6	79.93	-0.0203373 (0.0141127)
7	92.21	-0.0319473 * (0.0163502)
8	95.32	-0.0349385 ** (0.0170232)
9	98	-0.0375343 ** (0.0176402)

Table 7 reports the average marginal effects of the Baseline model in Table 6, Column (1) obtained by the Delta-method. The marginal effects refer to nine values that correspond to the 1st-99th percentile for the Governance index. The marginal effects are reported in Column (3). Standard errors are in parentheses. The output post-estimation is based on Stata's 'margins' command (see Williams et al.,2012). The \*\*\*, \*\* and \* signs denote statistical significance at the 1,5 and 10% level.

Table 8: Probability to receive a regulatory enforcement action: Addressing endogeneity

	(1)	(2)	(3)	(4)
<b>Panel A: Second stage results</b>				
Dep. Variable: Severe action				
Lobbying	1.3911 *** (0.3172)	0.6806 *** (0.24081)	1.664*** (0.3187)	0.6400** (0.2488)
Governance	0.0066 ** (0 .0027)	0.006** (0.0028)	0.007*** (0.00266)	0.0053** (0.0029)
Lobbying x Governance	-0.0119 *** (0.0036)	-0.0114*** (0.00406)	-0.01165*** (0.0035)	-0.0107*** (0.0041)
Bank controls	YES	YES	YES	YES
State dummies	YES	YES	YES	YES
Time dummies	YES	YES	YES	YES
Method of estimation	Bi-probit	IV-probit	Bi-probit	IV-probit
<b>Panel B: First stage results</b>				
Dep. Variable: Lobbying				
	(1)	(2)	(3)	(4)
Fin. Sector employment	x	x	x	x
Distance to DC	x	x	x	x
ROA (mean)			x	x
NPL (mean)			x	x
Bank controls	YES	YES	YES	YES
State dummies	YES	YES	YES	YES
Time dummies	YES	YES	YES	YES
LR - stat	1407.45	1407.45	1453.15	1453.15
P-value	0	0	0	0

Table 8 reports the estimated results of a Bi-probit (Columns 1 and 3) and IV-probit model (Columns 2 and 4). Sample period is 2002-2017. The dependent variable in the second stage (Panel A) in all cases is the severe enforcement action indicator variable. The dependent variable for the first stage regressions (Panel B) is the lobbying indicator variable. The instruments used in the models in columns 1 and 2 are 'Financial Sector employment', 'Distance to DC'. In Columns 3 and 4 mean ROA and Non-performing loans of the subsidiaries of each Bank Holding Company are added. For detailed variable description see Table 1. The \*\*\*, \*\* and \* signs denote statistical significance at the 1, 5 and 10% level.

Table 9: Lobbying and performance

VARIABLES	(1) Dep. Var: ROA t+1	(2) Dep. Var: ROA t+5
Lobbying	0.203 (0.200)	-0.902** (0.413)
Governance	0.00223 (0.00262)	-0.0159*** (0.00580)
Lobbying x Governance	0.00181 (0.00346)	0.0199*** (0.00644)
Severe	-0.301* (0.161)	0.335* (0.193)
Capitalisation	0.00267 (0.00254)	-0.0177*** (0.00389)
Liquidity	-0.00321* (0.00182)	0.0249*** (0.00463)
Non performing loans	-0.0658*** (0.0136)	0.0234 (0.0213)
Size	-0.297*** (0.107)	-0.257 (0.186)
Age	-0.0468*** (0.0178)	-0.0967*** (0.0285)
Constant	8.813*** (1.361)	14.13*** (2.721)
Observations	2,002	734
R-squared	0.182	0.241
Number of snlid	544	168
Bank FE	YES	YES
Time dummies	YES	YES
R-sq	0.00112	0.00527

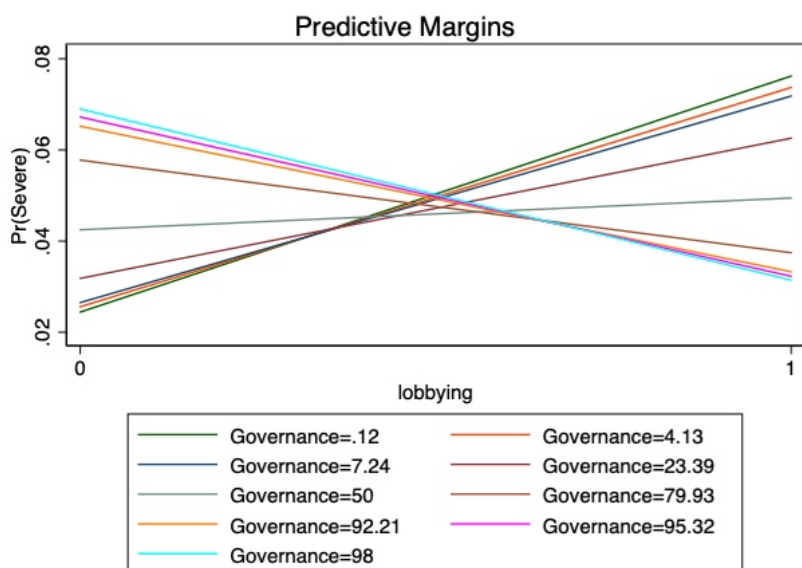
Table 9 reports the baseline results of a linear Fixed Effects model examining the impact of lobbying on bank performance. Sample period is 2002-2017. The dependent variable in all cases is the return on assets ratio. In Column (1) the dependent variable is the return on assets ratio for year t+1. In Column (2) the dependent variable is the return on assets ratio for year t+5. For detailed variable description see Table 1. The \*\*\*, \*\* and \* signs denote statistical significance at the 1,5 and 10% level.

Table 10: Lobbying and performance: Addressing Endogeneity

	(1)	(2)	(3)	(4)
<b>Panel A: Second stage results</b>				
	Dep. Variable: ROA t+1	Dep. Variable: ROA t+5	Dep. Variable: ROA t+1	Dep. Variable: ROA t+5
Lobbying	-0.3297** (0.155)	-1.04 *** (0 .30437)	-0.3297** (0 .155)	-1.04 *** (0 .30437)
Governance	0.0003 (0.0012)	0.0021 ( 0.0026)	0.0003 (0.0012)	0.0021 ( 0.0026)
Lobbying x Governance	0 .0072*** ( 0.0023)	0.011*** ( 0.0039)	0.0072*** (0.0023)	0.011*** ( 0.0039)
Severe	-0.347* (0.1866)	.5391* (0.2891)	-0.347* (0.1866)	.5391* (0.2891)
Bank controls	YES	YES	YES	YES
State dummies	YES	YES	YES	YES
Time dummies	YES	YES	YES	YES
Method of estimation	2SLS	2SLS	2SLS	2SLS
<b>Panel B: First stage results</b>				
Dep. Variable: Lobbying				
	(1)	(2)	(3)	(4)
Fin. Sector employment	x	x	x	x
Distance to DC	x	x	x	x
ROA (mean)			x	x
NPL (mean)			x	x
Bank FE	NO	NO	NO	NO
Time dummies	YES	YES	YES	YES
Hansen J statistic	25.476	11.541	36.891	13.704
P-value	0	0.0031	0	0.0083

Table 10 reports the results of a 2 Stage Least Square (2SLS) model, estimated to address endogeneity concerns in regard to the model estimated in Table 9. Sample period is 2002-2017. The dependent variable in all cases a proxy for performance, which is the return on assets ratio. In Columns (1) and (3) the dependent variable is the return on assets ratio for year t+1; whereas in Columns (2) and (4) the dependent variable is the return on assets ratio for year t+5. For detailed variable description see Table 1. The \*\*\*, \*\* and \* signs denote statistical significance at the 1,5 and 10% level.

Figure 1: Margins plot - Average margins showcasing the moderating effect of Lobbying on the probability of enforcement for different values of the Governance index



# Appendix

## A Proof of Lemma 1

Comparing (6) with (8) shows that a type  $\theta$  bank prefers, for any  $p^N$ , lobbying over not lobbying it if and only if

$$p^L(\theta) > \tilde{p}^L(\theta, p^N) := \begin{cases} p^N - \frac{L}{\theta R - (S-f)}, & \text{if } \theta > \tilde{\theta}(p^N); \\ 1 - \frac{L+f-1}{\theta R - (S-f)}, & \text{otherwise.} \end{cases} \quad (15)$$

Both the social and the bank's private benefit of lobbying are increasing in  $\theta$ . Hence, whenever inducing a type  $\theta$  bank to lobby is optimal for the enforcement agent, so will it be to induce a type  $\theta' > \theta$ . It remains, therefore, to show that  $\bar{\theta} > \hat{\theta}$ .

For any given  $p^N$  and  $\bar{\theta}$  above which the bank is supposed to be induced to lobby, the enforcement agent's optimal choice of enforcement probability for lobbying banks is

$$p^{L^*}(\theta) = \begin{cases} 1, & \text{if } \theta \leq \bar{\theta}; \\ \tilde{p}^L(\theta, p^N), & \text{if } \bar{\theta} < \theta \leq \hat{\theta}; \\ 0, & \text{if } \max\{\bar{\theta}, \hat{\theta}\} < \theta. \end{cases} \quad (16)$$

We have already shown in the text before the Lemma that inducing the bank to lobby can never be optimal for  $\tilde{\theta}(p^N) \leq \theta \leq \hat{\theta}$ . Consider, therefore, the case where  $\theta < \min\{\tilde{\theta}(p^N), \hat{\theta}\}$ . In this case, the enforcement agent wants to induce lobbying of type  $\theta$  if and only if  $w^L(\theta, p^{L^*}(\theta)) = w^L(\theta, \tilde{p}^L(\theta)) > w^N(\theta)$ . Recalling that, as  $\theta < \tilde{\theta}(p^N)$ ,  $\tilde{p}^L(\theta) = 1 - \frac{L+f-1}{\theta R - (S-f)}$ , we have

$$\begin{aligned} w^L(\theta, \tilde{p}^L(\theta)) &= \theta R - (1 - \theta)B - L + \left(1 - \frac{L+f-1}{\theta R - (S-f)}\right) (S - \theta R + (1 - \theta)B - C) \\ &= S - p^N C - L - C(1 - p^N) + \frac{L+f-1}{\theta R - (S-f)} (S - \theta R + (1 - \theta)B - C) \\ &< S - p^N C = w^N(\theta). \end{aligned}$$

Hence,  $\bar{\theta} > \hat{\theta}$ . ■

## B Proof of Proposition 1

We have not established that either  $W^{NL}(\cdot)$  or  $W^L(\cdot)$  have a unique maximum. Therefore, we follow Milgrom and Shannon (1994) for the case where there the argmax of either of these functions has more than one element by using the 'strong set order' approach to define comparative statics: We will write that, for two objective functions  $a(p)$  and  $b(p)$ ,

$A := \arg \max a(p)$  is 'larger' than  $B := \arg \max b(p)$  if and only if, for any  $p_a \in A$  and  $p_b \in B$ ,  $\min\{p_a, p_b\} \in B$  and  $\max\{p_a, p_b\} \in A$ . Then, the Proposition follows from Theorem 4 in Milgrom and Shannon (1994) and our result that  $W^{L'}(p^N) > W^{NL'}(p^N)$  for any  $p^N$ . ■

## C Proof of Proposition 2

We have already argued in the text that the bank's profit with lobbying available is weakly lower if  $\theta < \bar{\theta}(p^N)$ , and that it is higher if  $\theta$  is very high. Therefore, all that remains to be shown is that the difference in the bank's profit with and without lobbying available is increasing in  $\theta$  for  $\theta < \bar{\theta}(p^N)$ : As **CHECK NOTATION**  $\Pi^L(\theta) = \theta R - L$  and  $\Pi^{NL}(\theta) = \max\{p^{NL}(S - f) + (1 - p^{NL})\theta R, S\}$ , we have

$$\Pi^L(\theta) - \Pi^{NL}(\theta) = \begin{cases} \theta R - L - S, & \text{if } \theta < \tilde{\theta}(p^{NL}); \\ p^{NL}\theta R - L - p^{NL}(S - f), & \text{otherwise.} \end{cases} \quad (17)$$

which is continuous and strictly increasing in  $\theta$  in both cases. ■

## D Classification of Enforcement Actions

## Enforcement actions classification

<b>ENFORCEMENT ACTIONS ISSUED AGAINST BANKS</b>	
<b>A.1. SEVERE ( ordered from most severe to less severe):</b>	
<b>Deposit Insurance Termination /Threat</b>	Decision to threat to suspend or terminate a bank's deposit insurance scheme by the FDIC, when unsound and unsafe banking practices are detected or when violations of laws and regulations have taken place. Deposit Insurance Termination can be imposed if a bank has neglected previous enforcement actions issued against the bank.
<b>Cease and Desist Order</b>	Banks that receive Cease and Desist orders are required to follow specific actions outlined by their primary supervisor. C&D orders can be enforced by law, in the federal banking system. Typical reasons or the issuance of C&D orders are the engagement in unsafe and unsound activities, violations of laws and regulations. A C&D may impose specific orders to stop the bank engaging in specific banking practices or may outline a particular strategy in order to improve asset quality, promote growth, decrease risk, etc.
<b>Formal written agreement</b>	The institutions subject to this type of action, enter into an agreement with their primary regulator to take particular actions or to follow particular proscriptions in written agreement. Unlike the C&D orders, although FAs are also legally enforceable, they are however, not enforceable through the federal court. FAs can nonetheless lead to the issuance of Civil Money Penalties, when they are ignored. Reasons that FAs are imposed are unsound practises, mismanagement policies, or "insider" abuse. FAs can lead to more severe types of enforcement actions if not taken into consideration.
<b>Prompt Corrective Action</b>	Prompt Corrective Actions are issued usually when undercapitalization issues are detected. These actions order banks on taking remedial actions in order to overcome the deficiencies in their level of capital. Among the corrective measures outlined, in some cases there may be dismissal of management, restrictions on executive payments, asset growth, rates paid on deposits or even prohibition on certain activities, such as approval for acquisition deals from the regulatory authorities.
<b>A.2. LESS SEVERE TYPE</b>	
<b>Civil Money Penalty (CMP)</b>	Monetary penalties against banking institutions that engage in unsafe or unsound banking practices, violations of laws or failure to comply with an order issued previously.
<b>Call report penalty (CR-P)</b>	Monetary penalties against banking institutions that fail to file Call Reports on time or in accordance to the general outline or even for misreporting information on Call Report files.



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