

# Lobby or Contribute?

## The Impact of Corporate Governance on Firms' Political Strategies

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### Abstract

This paper theoretically and empirically studies the impact of corporate governance level on firms' choice in two political strategies: lobbying and making political contributions. The theoretical model implies that managers with short-run personal interest, prefer making political contributions; while shareholders caring about firms' long-term success, are willing to do informational lobbying. At equilibrium, a higher level of corporate governance positively affects the efficiency of the decision making process. Using data from U.S. in the 1998-2006 periods, I confirm the main theoretical predictions: (1) Firms only doing lobbying outperform those only making contributions in the corporate governance level. (2) Firms with higher shareholder power do more lobbying. (3) Fewer firms with high shareholder power would make contributions than those with high manager power. However, once they do, they contribute more than the latter because of the informational externality effect. Therefore, if corporate governance level is improved, fewer contributions will be made by firms.

*JEL Classification:* G32, G34, D72.

*Keywords:* Corporate Governance Level, Informational Lobbying, Political Contributions.

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# 1 Introduction

Participating in political activities is a widely adopted business strategy nowadays. This is especially common in the policy-related industries, such as manufacturing, electric utilities, and oil & gas companies. Firms usually use two instruments in such activities, namely lobbying and campaign contributions. In the United States, about \$24.99 billion have been spent by firms on lobbying activities since 1998.<sup>1</sup> Firms do lobbying on all kinds of issues: preventing tight regulations on financial markets, investor-protection policies, market entry rules, climate policies like CO2 reduction measures, agrofuels and nuclear energy, and so on.<sup>2</sup> At the same time, campaign contributions through political committees like PACs, 527s, are made to fund both Democrats and Republicans. By lobbying or contributing, firms pursue to impose influences over political process. For instance, during 2007/2008 election cycle, Citigroup Inc. spent \$4.8 million on campaign contribution and \$7.66 million on lobbyists, and in return, they have received \$50 billion in TARP payment (Troubled Assets Relief Payment). That is a rate of return on investment as high as 401,194%.<sup>3</sup> Some of these political activities may be beneficial for policy making by, for example, providing relevant information to decision makers, whereas others could simply lead to bad policies. Hence, firms' political activities are important not only to their own profits, but also to the whole market efficiency.

In this paper, I study whether and how firms' corporate governance level, defined as the relative shareholders' power compared with managers' power, affects their choices in political strategies, and if better corporate governance level leads to more efficient policy making process. The paper focuses on the two major political instruments: informational lobbying and political campaign contributions. The lobbying is defined as the practice of persuading legislators/regulators over policy decisions by providing related information. In contrast, the contributions studied in this paper are those financial supports that firms provide through political committees for political parties in the election races. They are usually considered as an instrument of "buying political favors" (Dahm and Porteiro 2008).

To find the relationship between corporate governance level and political activities, I consider a simple two-period model in which a politician must

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<sup>1</sup>The data is from OpenSecrets.org.

<sup>2</sup>Please refer to <http://www.corporateurope.org>.

<sup>3</sup>The news is from <http://bx.businessweek.com>, "Campaign Contributions: How the Banks Control US Policy".

take a policy decision in each period depending on the state of the world. He trades off the benefit from the firm's contributions against the payoff of acting optimally based on his belief of the world. The more convinced he is about the true state of the world, the higher contributions he would ask for if the firm wants to bend his decision. The firm, as an interest group, first decides investments in costly informational lobbying and then on the campaign contributions. The firm has a representative shareholder and a manager, who have different interests. The firm's welfare is a weighted average of shareholder's value and manager's utility, measured by their relative control of the firm (the corporate governance level).

Several results are obtained with the model. (1) Higher corporate governance level (stronger shareholder control) leads to more investment in informational lobbying. (2) The higher the corporate governance level is, the less will the firm be willing to make campaign contributions. (3) Due to the informational externality on contribution created by informational lobbying (Bennedsen and Feldmann 2006), the firm will contribute more to policy makers after doing informational lobbying. This is because of the possibility for the politician to get information against firm's interests, in which case the firm needs to exert more political pressure (to contribute more) on the politician. (4) When corporate governance is above certain level, political contributions are decreasing in the level of shareholder control. (5) The efficiency of decision making process increases with firm's corporate governance level.

The intuition is as follows: a better corporate governance standard means that shareholders have more control of the firm than managers do. Shareholders, especially the major owners of the firms, care more about whether firms can grow and be successful in the future. On the contrary, managers pay more attention to their own interests, like labor contract renewal, wage compensation increasing, which are closely linked to the current period financial performance. As a result, when shareholders have more control at the firm (better corporate governance level), lobbying would be a preferred strategy. This is because lobbyists influence the political decisions by persuasion and by providing hard information, which leads to a long-lasting effect (Harstad and Svenssen 2009). With the same logic, exerting political pressure is the strategy favored by the managers, since the contribution strategy has a short-term effect. The policy makers may require more contributions in the future. This makes contribution less committable than lobbying (Harstad and Svenssen 2009).

The theoretical results are tested by using data from the U.S. market. The firm-level lobbying expenditure data and contribution data from 1998 to 2006 are hand collected from the Center for Responsive Politics. Using the corporate governance index from Gompers, Ishii and Metrick (2003) as a measure of firms' corporate governance level, I then test empirically the association of corporate governance level and firms' political activity strategies. Several results are found: (1) on the average, firms that make campaign contributions have a lower corporate governance level than those that do lobbying; (2) firms with better corporate governance spend more on lobbying expenditures, when other effects such as the firm size, industrial specific effect and time fixed effect are controlled; (3) for firms with good corporate governance, fewer of them make campaign contributions than those with bad corporate governance. These empirical results support the theoretical predictions.

Most literatures on interest group, lobbying and campaign contribution focus the demand side of these political activities, for instance how special interest groups affect policy decisions through lobbying or monetary contributions. The current paper distinguishes from the literature by investigating the supply side of the political activities, and reveals how different corporate governance level induce different political strategies. It hence adds the other pillar to the current literatures of corporate governance and political economy.

There are some related literatures investigating firms' political activities. Researchers have found that firms benefit from lobbying. For instance, Richter, Samphantharak and Timmons (2008) have indicated that if firms spend 1% more in lobbying expenditures, their effective tax rates will be lowered by 0.5 to 1.6 percentage points on average. In addition, it is found that firms' lobbying expenditures are positively correlated with their net income and lobbying firms outperform non-lobbying firms in terms of financial performance (Chen, Parsley and Yang, 2008).

Different from informational lobbying, the effect of campaign contribution is less clear. Some people challenge the view of considering campaign contributions as "buying political favor" (Ansolabehere, de Figueiredo and Snyder (2003), Ansolabehere, Snyder and Ueda (2004)). In those empirical studies, no noticeable effect of contributions on legislators' votes or firms' valuation is found. Others disagree and think that a reform of regulation over firms' campaign contribution is badly needed. For example, Joo (2006) argues that firms' campaign contributions are fundamentally different from

individuals', due to institutional characteristics, typically the profit-seeking nature. These differences make the campaign finance activities more likely to cause corruption or the appearance of corruption. In addition, Aggarwal, Meschke and Wang (2008) have found that corporate political contributions represent a form of perquisites consumption for the firms' managers, which results in lower financial performance.

Some scholars have discussed the efficiency of current campaign contribution reform. Drazen, Limão and Stratmann (2007) announce in their paper that contribution cap will reduce the contributed amount from individual firms but at the same time increase the number of interest groups. Hence, the cap may end up raising the aggregate contributions and increasing politically motivated government spending. Similarly, Dahm and Porteiro (2008) also find some side-effects of the campaign finance reform. Making restrictions on the campaign contributions may deter informational lobbying, which leads to fewer policy-relevant information revelations and less efficient political decisions.

The rest of the paper is structured as follows. The second part describes the theoretical model in detail and the main results of the model are analyzed in section 3. Section 4 provides the data information, analyzes the regression model and discusses the empirical results. The last section concludes.

## 2 The Model

A two-period dynamic game is considered. In the game, there is a politician ( $P$ ) and a firm ( $F$ ) acting as an interest group. Similar to some commonly used setups in political economy (Feddersen and Pesendorfer 1998), the former is supposed to choose one policy ( $d$ ) from two alternatives,  $A$  and  $B$  in each period. There are two states of the world  $a$  and  $b$ . The true state of the world  $\omega$  is unknown, and is assumed to be the same for both periods. However, the prior belief  $q_0$  of the probability of state  $a$  is common knowledge,  $q_0 \in (\frac{1}{2}, 1)$ . For state  $a$ ,  $A$  is assumed to be the correct policy, while policy  $B$  should be chosen in state  $b$ .

On one side, the politician is interested in choosing the right policy according to the state of the world. His expected payoff is  $\bar{s}$  if the state and the policy are matched correctly. Otherwise, he will get  $\underline{s}$ . Without loss of generality, the premium of choosing the right policy is normalized:  $\bar{s} - \underline{s} = 1$ . Given  $q_0 > \frac{1}{2}$ , the politician's expected utility of choosing policy  $A$  is greater

than that of policy  $B$ , i.e.  $EU(d = A) - EU(d = B) = 2q_0 - 1 > 0$ . Therefore, he is more willing to choose policy  $A$  if there is no political influence. On the other side, the politician is also responsive to the political influence exerted by the firm.

The firm prefers policy  $B$  independent of the state of the world. Its payoff is assumed to be  $V_B$  when policy  $B$  is chosen, and to be  $V_A$  otherwise. The payoff difference is denoted by:  $V_B - V_A = V > 0$ . Therefore, the firm has an incentive to influence the politician. Two possible political instruments can be used: informational lobbying and political campaign contributions. In addition, the firm is owned by a representative shareholder ( $SH$ )<sup>4</sup> and is operated by a representative manager ( $M$ ). The shareholder and the manager are different in their prospection of the firm. As the owner, the shareholder cares more about firm's success and the development in long run. Nevertheless, the manager pays more attention to his personal interests, such as gaining immediate upside movement of revenue in order to keep his position or to have higher wage compensation. Thus, compared with the shareholder, the manager cares more about firm's short-run return. The firm will exert political influence as one interest group.

To capture the different prospection between the shareholder and the manager, a two-period dynamic game is built and the time schedule is summarized in Figure 1.

**Stage 0** At the beginning, nature selects the state of the world  $\omega$ .

**Stage 1-1** F decides to engage in the informational lobbying, captured by a parameter  $x$ .

**Stage 1-2** Based on the informational lobbying, P updates his belief of the true state of the world to  $q_r \in [0, 1]$  rationally.

**Stage 1-3** Given the updated belief  $q_r$ , F determines how much political pressure to exert, by choosing the campaign contribution amount for the first period  $c_1$ .

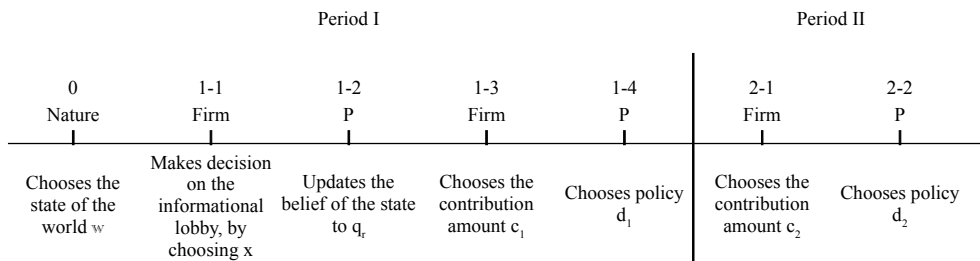
**Stage 1-4** With the updated belief  $q_r$  and F's political contribution  $c_1$ , P chooses the policy  $d_1$  for the first period.

**Stage 2-1** Assume that the effect of the chosen policy occur in the future, so P, as well as F only has an updated belief  $q_r$  of the state, rather than

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<sup>4</sup>The representative shareholder considered here is the principle owner of the firm, instead of those short-term investors in the stock market.

Figure 1: The Time Line



knowing the true state of the world at the beginning of period two. F makes decision on how much to contribute,  $c_2$ , for period 2.

**Stage 2-2** P chooses a policy according to the contribution  $c_2$  from the firm.

At the first stage of the game, the firm decides whether to influence the politician with informational lobbying. The firm may invest in a test ( $t$ ) that with some probability allows the firm to find out the true state of the world. I denote  $x \in [0, 1]$  as a measure of the investment in the test and the quality of the test, which is observable to the politician. Acquiring information incurs some costs at  $C(x) = \frac{kx^2}{2}$ . The test can reveal the true state,  $t = \omega$ , with probability  $x$ . With probability  $1 - x$ , the test fails and no information is obtained,  $t = \phi$ . After getting the test result, the firm will do lobbying by sending a report  $r$  about the state of the world to the politician. The test result is verifiable so that the firm can not tell a lie (Wright 1996, Dahm and Porteiro 2008). The test result is always revealed by the firm ( $r = t$ ). This can be the case when the firm buys the test result from an external expert, who carries out the test and reveals the result, by paying  $C(x)$ .<sup>5</sup> Hence,  $r = \{\omega\}$  if  $t = \omega$  and  $r = \{\phi\}$  if  $t = \phi$ . The report sent is hard information and valid for the two periods. In addition, I assume that the lobbying strategies for the two periods are perfectly correlated, i.e. lobbying will be done only in the first period.<sup>6</sup>

<sup>5</sup>This assumption will be relaxed later. In the extension, I consider the possibility of hiding some bad information from the politician. Similar results are obtained.

<sup>6</sup>The assumption will be relaxed later. It means that the lobbying strategy in the second period is fully influenced by that in the first period. When the test of finding out the true state of the world succeeds in the first period, there is no need for the firm to invest again in the second period because the test result is valid for two periods. If the test fails in period one, the firm knows that it will fail in period two. This may be because the failure is due to some technique difficulties that can not be solved in period two. Therefore, the firm won't invest in period two. Hence, lobbying only occurs in the

After the politician has a posterior belief  $q_r$  according to the result from informational lobbying, the firm will make political campaign contribution  $c \geq 0$ , to the politician, at a cost  $C(c) = k_c c$ , where  $k_c$  is the marginal contribution cost. The effect of the contribution to the utility of the politician is assumed to be additively separable and linear (Bennedsen & Feldmann 2006), i.e.  $EU(c, d) = EU(d) + c$ . The contribution is effective for one period, because the politician is less committable to the contribution and he can ask for more contributions in the next period.

For simplicity, I will concentrate on the case with interior solutions, by introducing the following Assumption:

**Assumption 1.** *Suppose that the marginal cost of doing informational lobbying is higher than that of making political contributions, i.e.  $k_x \gg k_c$ .*

Assumption 1 can be explained by the facts that it is more expensive to do lobbying than to make campaign contributions to the politician. Doing informational lobbying incurs costs like investing in doing related research, hiring professional lobbyists and so on, while making political contribution is money transfer.

At the end of the first period, the politician will make a decision about the policy, depending on his updated belief from informational lobbying and the benefits received from political contribution. In period two, another policy decision will be made by the politician. Due to the assumption of perfect correlation of lobbying strategies discussed before, no informational lobbying will be done. However, to affect politician's decision, a new contribution from the firm is needed.

The payoffs of the second period are discounted. Since the shareholder and the manager of the firm have different prospection, their discount rate will be different:

**Assumption 2.** *SH puts more weight on the future payoffs than M does. Hence, her discount rate  $\delta^{SH}$  is greater than the discount rate of M  $\delta^M$ , i.e.*

$$\delta^{SH} > \delta^M, \quad \text{where } \delta^{SH}, \delta^M \in (0, 1).$$

As the firm will act like one interest group to exert political influence, the general discount rate depends on shareholder's and manager's discount

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first period.

rate as well as firm's corporate governance level. The corporate governance level is denoted by an exogenous parameter  $g \in [0, 1]$ . The parameter  $g$  is a measure of the firm's power balance between the shareholder and the manager. The shareholder has all the control of the firm when  $g = 1$  and it is the manager who has all the control if  $g = 0$ . Therefore, the shareholder's power is increasing in the corporate governance level. With this structure, firm's general discount rate is

$$\delta^F(g) = g \cdot \delta^{SH} + (1 - g) \cdot \delta^M \quad \text{where} \quad \frac{\partial \delta^F(g)}{\partial g} > 0,$$

implying that the firm's welfare is closer to the expected utility of the shareholder when the firm has a better corporate governance level. Otherwise, the welfare is closer to manager's expected payoffs.

### 3 Lobbying and Contribution Behavior at Equilibrium

In this section, I study firm's contribution behavior, its lobbying strategy and the impact of corporate governance on the political strategies at equilibrium. The game described in the previous section is a sequential game with incomplete information, which is solved by backward induction. Let me start the analysis from the firm's contribution stage at the second period.

#### 3.1 Stage Analysis

##### 3.1.1 Stage 2-2

At the last stage, the politician chooses the policy  $d_2 \in \{A, B\}$  based on his updated belief  $q_r \in [0, 1]$  of the state of the world and the political pressure  $c_2 \geq 0$  exerted by the firm from stage 2-1. There can be two cases.

1. If the report received from the firm indicates a true state of  $b$ , i.e.  $r = b$ , then the politician's updated belief will be  $q_r = 0$ . As a result, policy  $d_2^*(q_r, c_2) = B$  will be chosen accordingly, and politician gains payoffs of  $EU_2 = \bar{s}$ .
2. If the report received from the firm says that  $a$  is the true state or the test fails, i.e.  $r = a$  or  $r = \phi$ , the posterior belief becomes  $q_r > 0$ . The policy choosing strategy is as follows:

$$d_2^*(q_r, c_2) = \begin{cases} B & \text{iff } c_2 \geq 2q_r - 1 \\ A & \text{iff } c_2 < 2q_r - 1. \end{cases} \quad (1)$$

Knowing that  $a$  could be the true state, the politician determines the policy  $d_2^*$  by comparing his expected payoff from choosing policy  $B$  and the benefits of contribution, with that from choosing policy  $A$  in the absence of any political pressure:

$$EU_2(d_2 = B, c_2) - EU_2(d_2 = A) = q_r \underline{s} + (1 - q_r) \bar{s} + c_2 - q_r \bar{s} - (1 - q_r) \underline{s} \quad (2)$$

The politician will choose policy  $B$  if and only if the benefit from campaign contribution can cover the loss in mismatching the policy with the true state ( $Equation(2) \geq 0$ ), i.e.

$$c_2 \geq 2q_r - 1.$$

The policy making strategy is summarized by equation (1).

### 3.1.2 Stage 2-1

At this stage, the firm decides on the campaign contribution ( $c_2 \geq 0$ ) to the politician, so as to influence the policy making process in the future. The firm actually wants policy  $B$  to be chosen, and the cut-off contribution amount to make that happen is

$$\hat{c}_2 = \begin{cases} 0 & \text{if } q_r = 0 \\ 2q_r - 1 & \text{if } q_r \geq 0. \end{cases} \quad (3)$$

When the politician believes that the true state of the world is  $b$  based on the report, firm's preferred policy  $B$  will be chosen. Expecting that, there is no need to exert pressure on the  $P$ , i.e.  $\hat{c}_2 = 0$ . However, when  $q_r > 0$ , the firm needs to exert some political pressure on the politician to manipulate the latter's behavior. To have policy  $B$  chosen, the firm has to contribute  $\hat{c}_2 = 2q_r - 1$ , which is increasing in  $q_r$ . This indicates that the firm needs to put more pressure to induce policy  $B$  when the probability of state  $a$  increases after the lobbying (the informational externality).

Given that exerting political pressure is costly, the firm will contribute if it is profitable to do so. The firm will compute whether the expected payoffs at period 2 from policy  $B$  and paying contribution  $\hat{c}_2$  are larger than those from policy  $A$ :

$$\begin{aligned} E\Pi_2(d = B, \hat{c}_2) - E\Pi_2(d = A) &= V - k_c \cdot (2q_r - 1) \geq 0 \\ \Rightarrow k_c &\leq \frac{V}{2q_r - 1}. \end{aligned}$$

The optimal contribution strategy for the firm at the current stage is summarized by the following equation:

$$c_2^*(q_r, d_2^*) = \begin{cases} 0 & \text{if } q_r = 0 \text{ or } q_r > 0 \quad \& \quad k_c > \frac{V}{2q_r - 1} \\ 2q_r - 1 & \text{if } q_r > 0 \quad \& \quad k_c \leq \frac{V}{2q_r - 1}. \end{cases} \quad (4)$$

In short, the contribution decision is made depending on the updated belief and its cost. The firm will not make political contributions on  $P$ , either when it is not necessary to do so or when it is too costly. Then policy  $A$  will be chosen. If political pressure is necessary and making contributions is not very expensive, the cut-off contribution amount will be made. Then, policy  $B$  will be chosen. Firm's expected utility becomes

$$E\Pi_2^*(c_2^*, d_2^*) = \begin{cases} V_B & \text{if } q_r = 0 \\ V_A & \text{if } q_r > 0 \quad \& \quad k_c > \frac{V}{2q_r - 1} \\ V_B - k_c(2q_r - 1) & \text{if } q_r > 0 \quad \& \quad k_c \leq \frac{V}{2q_r - 1}. \end{cases} \quad (5)$$

### 3.1.3 Stage 1–3 and Stage 1–4

The political contribution strategy and the policy making process in period 1 (stage 1–3 and stage 1–4) are actually the same as the ones in period 2. Hence, the firm will contribute the same amount to  $P$  and the latter will make the same decision as they do in the second period.

### 3.1.4 Stage 1–2

At this stage at which the politician updates his belief of the state according to the report from the firm. The test report from the previous stage induces three possibilities.

1. When the firm reports to the politician that  $b$  is the true state ( $r = b$ ), the politician will be confirmed that the true state is  $b$  and updates his belief of the probability of state  $a$  to  $q_r = 0$  accordingly.
2. If the report claims that  $a$  is the true state ( $r = a$ ), the politician will update the probability of  $a$  to  $q_r = 1$ .
3. If the test unfortunately fails, no report will be sent to the politician. The latter only has the prior belief of the state of the world  $q_r = q_0$ .

### 3.1.5 Stage 1–1

Now the firm determines its optimal investment in lobbying by choosing  $x$ . The informational lobbying decision depends on how costly the lobbying is compared with making campaign contributions. Three cases are considered.

**Low contribution cost** ( $k_c \leq V$ ): The objective function for the firm in this case is

$$\begin{aligned} \max_x E\Pi(x) = & x(1 - q_0)V_B(1 + \delta(g)) + xq_0(V_B - k_c)(1 + \delta(g)) \\ & + (1 - x)(V_B - k_c(2q_0 - 1))(1 + \delta(g)) - \frac{k_x x^2}{2} \end{aligned} \quad (6)$$

s.t.

$$x \in [0, 1].$$

$E\Pi$  reflects that, in my model with probability  $x$ , the test reveals the true state of the world. Therefore, with probability  $x(1 - q_0)$ , the test implies the true state is  $b$ . As is known from the previous section, a report  $r = \{b\}$  will be sent to  $P$  and the politician will update his belief of state  $a$  to  $q_r = 0$ . For the long lasting effect of informational lobbying, policy  $B$  will be chosen for both periods. In the continuation of the game, political pressure is not necessary then. With probability  $xq_0$ , the test result shows that the true state is  $a$ . A report  $r = \{a\}$  will be sent and  $P$  updates the belief to  $q_r = 1$ , accordingly. In this case, more political contribution is required to make  $P$  choose policy  $B$ , as the contribution amount is increasing in the likelihood of state  $a$ . When the test fails to figure out the state of the world, occurring with probability  $(1 - x)$ , no information will be sent from the firm. As a result, the politician's updated belief is the same as the prior belief  $q_0$ . Contribution of  $(2q_0 - 1)$  will be made to induce policy  $B$ . The relationship between the informational lobbying and political pressure is summarized in the following Lemma:

**Lemma 1.** *With informational lobbying  $x$ ,*

1. *when  $t = b$ , a report of  $r = b$  will be sent and  $P$ 's updated belief of state  $a$  is 0. No contribution is needed, i.e.  $c_1^* = c_2^* = 0$ .*
2. *when  $t = a$  or  $t = \phi$ , a report of  $r = a$  or  $r = \phi$  will be sent, respectively, and  $P$ 's updated belief of state  $a$  will either increase to 1 or remains as  $q_0$ .  $F$  needs to make contributions to  $P$  at  $c_1^* = c_2^* = \hat{c}$ , which is increasing in  $q_r$ , the updated likelihood of  $a$ .*

Hence, lobbying firm contributes to the politician less frequently than firm without lobbying. This is because with certain probability ( $x(1-q_0)$ ), lobbying firm does not need to make contributions. However, if the lobbying firm contributes, it will contribute more than non-lobbying firm as informational lobbying may increase politician's belief of state  $a$ .

Maximizing equation (6), the firm's optimal investment in the informational lobby and its expected payoffs will be<sup>7</sup>

$$x^* = 0 \quad (7)$$

For the case of very low contribution cost, exerting political pressure is preferred to investing in informational lobbying.

**Intermediate contribution cost** ( $V < k_c \leq \frac{V}{2q_0-1}$ ): Then firm's objective function of making lobbying becomes

$$\begin{aligned} \max_x E\Pi(x) = & x(1-q_0)V_B(1+\delta(g)) + xq_0V_A(1+\delta(g)) \\ & + (1-x)(V_B - k_c(2q_0-1))(1+\delta(g)) - \frac{k_x x^2}{2} \end{aligned} \quad (8)$$

s.t.

$$x \in [0, 1].$$

The explanation for equation (8) is similar to that of equation (6), except for  $t = a$ . If the test shows that  $a$  is the true state, the firm is required to contribute  $c_1^* = c_2^* = 1$  to  $P$ . The contribution will be too expensive for the firm when  $k_c > V$ , which incurs no contribution and policy  $A$  will be chosen. The optimal investment in the lobbying is

$$x^* = \begin{cases} 0 & \text{if } k_c \leq \frac{q_0 V}{2q_0-1} \\ 1 & \text{if } k_c \geq \frac{k_x}{(1+\delta(g))(2q_0-1)} + \frac{q_0 V}{2q_0-1} \\ \frac{(1+\delta(g))[k_c(2q_0-1)-q_0 V]}{k_x} & \text{if } \frac{q_0 V}{2q_0-1} < k_c < \frac{k_x}{(1+\delta(g))(2q_0-1)} + \frac{q_0 V}{2q_0-1} \end{cases} \quad (9)$$

Three possible lobbying strategies could be achieved, depending on the relative contribution costs. For the lower contribution costs ( $k_c \leq \frac{q_0 V}{2q_0-1}$ ), no investment in the lobbying will be made. If contribution costs ( $k_c$ ) is relatively higher than the lobbying costs ( $k_x$ ), holding other effects constant, the firm will do lobbying at the maximum level ( $x^* = 1$ ). Otherwise, a positive

<sup>7</sup>The first order condition in this case is equal to  $k_c(1+\delta(g))(q_0-1) - k_x x$ , which is always smaller than zero.

amount of lobbying ( $0 < x^* < 1$ ) will be done. In short, when the contribution cost is neither high nor very low, the firm will use both political instruments to influence the politician. However, according to Assumption 1, the second case will be omitted.

**High contribution cost** ( $k_c > \frac{V}{2q_0-1}$ ): the firm will not make contributions. Then its objective function of carrying out lobbying becomes

$$\max_x E\Pi(x) = x(1-q_0)V_B(1+\delta(g)) + xq_0V_A(1+\delta(g)) + (1-x)V_A(1+\delta(g)) - \frac{k_x x^2}{2} \quad (10)$$

s.t.

$$x \in [0, 1].$$

Now since exerting political pressure is very costly, the firm will not contribute to  $P$  in any case. If the test fails, policy  $A$  will be selected. The optimal informational lobbying and the expected utility becomes

$$x^* = \begin{cases} 1 & \text{if } k_x \leq (1 + \delta(g))(1 - q_0)V \\ \frac{(1 + \delta(g))(1 - q_0)V}{k_x} & \text{if } k_x > (1 + \delta(g))(1 - q_0)V \end{cases} \quad (11)$$

With very high contribution costs, the firm will only do informational lobbying to influence the politician. Similarly as the previous case, the investment amount depends on the the relative costs between making contribution and doing lobbying. Maximum amount will be invested if contribution cost is relatively higher than the lobbying cost<sup>8</sup>. Otherwise, a positive amount of lobbying will be done. Similarly, I will focus on the interior solution, according to Assumption 1.

### 3.2 Equilibrium Analysis

In this section, the equilibrium behavior of the firm will be analyzed. Depending on political contribution costs  $k_c$ , there can be different equilibrium behavior. Possible equilibriums are summarized in the following Propositions.

**Proposition 1.** *When the contribution cost is low ( $k_c \leq \frac{q_0 V}{2q_0-1}$ ),  $F$  will not do informational lobbying ( $x^* = 0$ ). No report will be sent ( $r = \{\phi\}$ ) to  $P$ . His updated belief of the state of the world is equal to the prior one ( $q_0$ ).  $F$  will make political contributions to  $P$  for both periods at  $c_1^* = c_2^* = 2q_0 - 1$ , and policy  $B$  will be chosen for both periods.*

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<sup>8</sup> $x^* = 1$  if  $k_x \leq (1 + \delta(g))(1 - q_0)V < \frac{V}{2q_0-1} < k_c$ .

Proposition 1 implies that the firm will only use campaign contributions to influence the politician's behavior when the contribution costs are comparatively low. As the firm will not do informational lobbying, no one has more information about the state of the world. Thus, the updated belief of the state remains the same as the prior belief.

**Proposition 2.** *For intermediate contribution cost ( $\frac{q_0 V}{2q_0 - 1} < k_c \leq \frac{V}{2q_0 - 1}$ ),  $F$  will invest in the informational lobbying ( $x^* > 0$ ). A report will be sent to  $P$  ( $r = \{\omega\}$  if  $t = \omega$  and  $r = \{\phi\}$  otherwise).  $P$  will update his belief with the report to  $q_r = 0$  if  $r = b$ ,  $q_r = 1$  if  $r = a$  and  $q_r = q_0$  if  $r = \phi$ . Political pressure will also be exerted for the two periods ( $c_1^* = c_2^* = 2q_0 - 1$ ), but only when the test fails ( $t = \phi$ ). For both periods, policy  $A$  will be chosen when  $r = a$  and  $B$  will be selected otherwise.*

This proposition indicates that when the contribution cost is neither high nor low, both political instruments will be used to manipulate the policy making process. The firm will invest in informational lobbying. In both periods, political pressure will be exerted if the test fails.

**Proposition 3.** *If the contribution cost is very high ( $k_c > \frac{V}{2q_0 - 1}$ ), only informational lobbying will be used by  $F$  ( $x^* > 0$ ). A report will be sent to  $P$  based on the test result ( $r = \{\omega\}$  if  $t = \omega$  and  $r = \{\phi\}$  otherwise.)  $P$  will update his belief with the message to  $q_r = 0$  if  $r = b$ ,  $q_r = 1$  if  $r = a$  and  $q_r = q_0$  if  $r = \phi$ . Since the contribution cost is very high,  $F$  will not make political contributions ( $c_1^* = c_2^* = 0$ ). Policy  $B$  will be chosen when  $r = b$  and  $A$  will be selected otherwise.*

Proposition 3 describes a similar equilibrium strategy of informational lobbying to that in Proposition 2. However, because of the high contribution cost, the firm will not use political contributions to influence the politician's choice.

In order to investigate the effect of corporate governance level on firm's political activity strategies, I will focus on the interior solution of the lobbying problem. With some comparative static analysis on equation (9) and equation (11), I get the following Lemma:

**Lemma 2.** *Better corporate governance level (or higher shareholder rights) incurs more investment in lobbying.*

Lemma 2 implies that firm with better corporate governance level will lobby more. This is due to a match of the long term effect of lobbying and the long run interest of shareholders. With positive probability ( $x(1 - q_0) > 0$ ),

informational lobbying will reveal the true state of the world that benefits the firm ( $t = b$ ). It is hard information, which is valid till the second period. At equilibrium, no further political contribution is needed to influence politician's behavior because of this long run effect of the informational lobbying. Since shareholders care more about long term performance of the firm, informational lobbying is their preferred instrument. Hence, firms with better corporate governance level will invest more in lobbying. This result coincides with the findings from other studies. Harstad & Svensson (2008) argue that the effect of lobbying is rather permanent and the politician or government is usually committable in the case of lobbying.

The impact of corporate governance level on political contributions is less obvious. Better corporate governance induces the firm to prefer informational lobbying over contributions. However, more information implies that more contributions are needed to correct a negative informational externality in some situations. To disentangle the two effects, an expected contribution amount  $EC$  is calculated, using the notion of Social Waste from Dahm and Porteiro 2008:

$$\begin{aligned}
EC &= Pr(\omega = a)[Pr(t = a|\omega = a)(c_1^* + c_2^*) + Pr(t = \phi|\omega = a)(c_1^* + c_2^*)] \\
&\quad + Pr(\omega = b)Pr(t = \phi|\omega = b)(c_1^* + c_2^*) \\
&= (1 + \delta(g))(2q_r - 1) - (1 - q_0)(1 + \delta(g))(2q_r - 1)x^*(g)
\end{aligned} \tag{12}$$

Comparative static analysis on equation (12) implies Lemma 3:

**Lemma 3.** *For lower contribution cost ( $k_c \leq \frac{q_0 V}{2q_0 - 1}$ ), better corporate governance  $g$  induces more political contribution from  $F$ . For intermediate contribution cost ( $\frac{q_0 V}{2q_0 - 1} < k_c \leq \frac{V}{2q_0 - 1}$ ), better corporate governance induces less political contribution from  $F$ , if  $F$ 's corporate governance level is above a threshold  $g \geq g^*$ .*

Lemma 3 describes how firm's corporate governance level affects the contribution strategy. When the contribution cost is low, in which case no informational lobbying will be done at equilibrium, higher shareholder's power will incur more political contribution. This is because without informational lobbying, campaign contribution becomes the only political instrument used to manipulate politician's decision. The firm will contribute to the politician in order to increase firm's payoffs. For an intermediate level of contribution cost, both lobbying and contribution will be used by the firm. If the firm's corporate governance level is above a threshold  $g^*$ <sup>9</sup>, higher managers' power

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<sup>9</sup>The threshold  $g^*$  is equal to the following value, according to the comparative static

leads to more political contribution. This might due to the fact that manager cares more about the short term benefits of the firm. Therefore, he prefers the political instrument that can bring him short-term return, i.e. campaign contributions.

After investigating the impact of corporate governance level on firm's political strategies, let's have a look at whether more corporate governance control incurs more efficient decision making process, i.e. lower probability of taking an incorrect decision. This can be achieved by calculating the probability of making a wrong decision (Austen-Smith and Wright, 1992):

$$\begin{aligned} Pr(err) = & Pr(\omega = a)[Pr(t = a|\omega = a)(Pr(d_1 = d_2 = B|t = a)) \\ & + Pr(t = \phi|\omega = a)(Pr(d_1 = d_2 = B|t = \phi))] \\ & + Pr(\omega = b)Pr(t = \phi|\omega = b)(Pr(d_1 = d_2 = A|t = \phi)) \end{aligned} \quad (13)$$

Doing some comparative static analysis of equation (13), the effect of corporate governance level on the accuracy of decision making is summarized in the following Lemma:

**Lemma 4.** *For lower contribution cost ( $k_c \leq \frac{q_0 V}{2q_0 - 1}$ ), where there is no informational lobbying, the probability of making a wrong decision is equal to the prior probability of state  $a$ ,  $q_0$ . For higher level of contribution cost ( $k_c > \frac{q_0 V}{2q_0 - 1}$ ), when there is informational lobbying, better corporate governance level leads to lower probability of making wrong decision.*

To summarize, the simple theoretical model implies that better corporate governance level incurs more informational lobbying from the firm, and less political contributions if shareholders' power is above certain threshold. Last but not least, better corporate governance level induces more efficient decision making process, if the firm does lobbying to the politician.

### 3.3 Robustness and Extension

In the previous sections, I have introduced a simplified theoretical model to investigate the relationship between corporate governance and firm's polit-

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analysis of equation (12):

$$g^* = \frac{k_x}{2[k_c(2q_0 - 1) - q_0 V](\delta_{SH} - \delta_M)} - \frac{1 + \delta_{SH}}{\delta_{SH} - \delta_M}.$$

This threshold will be negative, i.e.  $g^* \leq 0$  if the equilibrium lobbying investment is large enough, i.e.  $x^* \geq \frac{1}{4}$ . In this case,  $g$  is always greater than the threshold, since  $g \in [0, 1]$ . Hence, except for very few investments in lobbying, the expected contribution amount is decreasing in firm's corporate governance level.

ical strategies, by making several assumptions. For instance, it is assumed that the lobbying strategies for the two periods are perfectly correlated, i.e. lobbying is done only in the first period. In addition, it is assumed that the firm will report all the information to the politician. These are strong assumptions. Firstly, in the real market, the first period's lobbying strategy can partially affect or have no influence on that in the second period. Therefore, the firm may decide whether to invest again in the informational lobbying in period 2, when it fails in period 1. Secondly, when getting a bad test result, i.e.  $t = a$ , it is quite normal for the firm to hide the bad information from the politician, by reporting that the test fails. These assumptions are relaxed and I have checked if the previous results are robust to each of these extensions. Main results from the simplified model still hold with the extensions. Details of the modified models can be found at the end of Appendix.

## 4 Empirical Evidence

The theoretical model discussed in the previous section predicts several empirical estimations. In this section, I will mainly study the following questions, investigating how firms' corporate governance level influences their political strategies in the real market.

**Lobbying firms have better corporate governance level than contributing firms:** The main prediction of the model is the difference in the political influence strategy chosen by the good corporate governance firms and by the bad corporate governance firms. The theoretical model implies that firms with better corporate governance level are more willing to do informational lobbying while the ones with worse corporate governance level prefer to exert political pressure. This result can be tested by investigating if firms exerting political contributions have a lower shareholder power than those doing informational lobbying.

**Better corporate governance firms do more lobbying:** The second prediction from the theoretical model is that higher corporate lobbying investment is associated with better corporate governance level. When firms want to influence the politician's choice, the ones with better corporate governance level or with higher shareholder power, will spend more in the informational lobbying than those with higher manager power. This is because the effect of lobbying lasts for a long run and shareholders care more about the long term benefits of firms. Hence, I will look at what will affect the lobbying expenditures, particularly if corporate governance level is positively

correlated with firms' lobbying investment to the government.

**Worse corporate governance firms make more political contribution:** A third prediction of the model is the impact of corporate governance level on the contribution strategy. For corporate governance level over the threshold, firms with higher manager power, prefer making political contributions to doing informational lobbying, as the political contribution has a rather short term effect and managers are interested more in the short term personal benefits. I will investigate what influences firms' contribution strategy and whether corporate governance level is negatively correlated with firms' political contribution strategy.

## 4.1 Data Description

In order to test the predictions previously described, measures of the firms' corporate governance level, their investment in informational lobbying and political contribution are needed. The dataset is created by matching lobbying data and contribution data from the Center for Responsive Politics (CRP) with the corporate governance data from RiskMetrics and other financial accounting data from COMPUSTAT database. The merged dataset is an unbalanced panel dataset covering 910 firms with 5048 observations in US market from 1998 to 2006.

### 4.1.1 Dependent Variables

Since the effect of corporate governance level on lobbying investment and on contributing behavior will be tested respectively, two dependent variables are needed: lobbying investment and political campaign contribution.

To measure the firms' investment in lobbying activity, the parameter  $x$  in the theoretical model, I use firm-level lobbying expenditure data from the Center for Responsive Politics (CRP).<sup>10</sup> The CRP compiles the reported lobbying expenditures from registered firms into an annual dataset, starting from the year 1998. The CRP data excludes bribery and other under-the-table forms of political pressure (Richter, Samphantharak & Timmons, 2008). A firm's yearly lobbying expenditure is a summation of the reports from both

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<sup>10</sup>Details on the Center for Responsive Politics methodologies can be found at the following link: <http://www.opensecrets.org/lobbyists/methodology.asp>. Under the Lobbying Disclosure Act of 1995, registered firms are required to reveal their lobbying issue and lobbying expenditures every six months.

in-house lobbying and external lobbyist filings in a certain year. The dataset is hand collected by searching the firm names.

The political contributions made by the firm, the parameter  $c$  in the theoretical model, is measured by the data of campaign contribution by and donation to the Political Action Committees (PAC)<sup>11</sup> from the Center Responsive Politics. Different from the lobbying expenditure data, PAC donations are reported every election cycle (every two years) rather than calendar year. Therefore, the data is collected for year 1998, 2000, 2002, 2004 and 2006.

Table 1 and Table 2 show summary statistics of corporation political strategies. Table 1 includes the dollar value of corporate lobbying expenditures (Panel A) and PAC contributions (Panel B) (in millions) for the entire sample period and for each sample year. Over 4 billion and over 270 million US dollars have been spent in lobbying and political contribution, respectively, in the sample<sup>12</sup>. Moreover, the lobbying expenditures are much greater than the campaign contributions. Table 2 describes the aggregated lobbying expenditures and contributions at industry level. Pharmaceuticals Products, Electric Utilities, Computer Internet, Misc Manufacturing & Distributing and Defence Aerospace are the five industries that do most lobbying during the sample period. Electric Utilities, Pharmaceuticals Products, Commercial Banks, Oil & Gas and Air Transport are the top five contributing industries.

#### 4.1.2 Independent Variable

The theoretical model predicts the impact of corporate governance level on political strategies. Therefore, the independent variable interested is the firms' corporate governance level ( $g$ ). To measure that, I use the "Governance Index" built in Gompers, Ishii and Metrick (2003), now referred as "GIM In-

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<sup>11</sup>The firms can also make political contributions to the parties through Soft Money donations (before 2002), Individual Money donations and donations to 527 Committees. Since the donations through PAC are 100% categorized by CRP and they account for a majority of the total political donations, I use PAC contributions to measure the political pressure exerted by the firm.

<sup>12</sup>This study only considers those firms having a corporate governance index which will be discussed later. Therefore, only part of the whole lobbying and contribution in US market are captured here. The total lobbying expenditure and donations through PAC are much higher in USA. According to the database of CRP, the lobbying expenditures in my sample account for about 25% of the total amount spent during 1998 to 2006.

dex”<sup>13</sup>, to proxy for the balance of power between shareholders and managers for about 1500 US large firms in 1990s, based on 24 governance rules. These provisions include strategies delaying hostile bidders (black check, written consent, etc.), voting rights, director protection (compensation plans, liability, etc.), other takeover defenses (anti greenmail, poison pill, etc.), and state laws (anti greenmail law, business combination law, etc.). The construction methodology is to add one point to the index for every provision reducing the shareholder rights. Hence, the higher the GIM index, the lower rights the shareholders have. In their paper, they only constructed the index in 1990s. Later on, other researchers have extended the period of the index to year 2006. To match with the lobbying data and PAC data, I use the GIM index from year 1998 to 2006. RiskMetrics offers data for every two years. In order to get the index for year 1999, 2001, 2003 and 2005, I took an average of the previous and the later years. For example, the GIM index for year 1999 of a certain firm is equal to the mean of the index of year 1998 and 2000.<sup>14</sup>

### 4.1.3 Controlling Variables

To estimate the effect of corporate governance level on firms’ political strategies, a set of controlling variables are used: firm size, free cash flow, leverage level, corporate valuation, industry effect and time fixed effect, etc. The firm size effect is considered because larger firms might have more resources to fund the political strategies, such as lobbying and PAC, than smaller firms. Hence, larger firms are expected to invest more in the political influence activities than smaller firms. Firm size in the model is measured by a natural logarithm of net sales.<sup>15</sup> Moreover, firms’ political strategies can be influenced by other business strategies. Hence, possible determinants, such as free cash flow, sales impact, Tobin’s q, leverage, R& D expenditures, investment, etc, are also considered as controlling variables (Aggarwal, Meschke and Wang, 2008). The industry effect needs to be controlled, as different

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<sup>13</sup>Using the GIM index as a measurement of firms’ corporate governance level could mitigate the endogeneity problem caused by simultaneous effects. Some researchers have found that lobbying can influence corporate investors’ protection policy. Since GIM index is a firm level variable, the simultaneous effect can be eliminated. However, the GIM Index was built only for those big firms in US market, which restricts the empirical study of firms’ political strategies to large firms.

<sup>14</sup>There might occur measurement error by doing this to get the index for odd years. Nevertheless, firms’ corporate governance level does not change a lot within two years. The measurement error won’t cause severe mistake in the empirical study.

<sup>15</sup>Except the net sales, other proxies of the firm size, such as total assets, common equity and market value of shares, are also checked. Since the four proxies are highly correlated according to the Spearman rank correlation, most the empirical results are similar under all proxies.

industry could have different characteristics. Lobbying and exerting political pressure have a long history in some industries, like pharmaceuticals industry and oil & gas industry, while they are not a commonly used business strategy in others like consulting industry. This leads to different aggregate lobbying or contribution amount (Table 2). Furthermore, it is common for the firms in a certain industry to do lobbying together to the government, in order to influence some policies benefiting the whole industry. The industry-level lobbying can not be separated with the firm-level lobbying in the dataset. Therefore, industry fixed effect are controlled. The industry group is divided according to the industry classification from the Center of Responsive Politics. Due to the fact that firms' political strategy might vary a lot in different years (Table 1), depending on the election cycle or political events, the time effect is also controlled in the estimation. Some of the controlling variables are defined in Table 3.

## 4.2 Analysis and Results

To assess the influence of corporate governance level on firms' political strategy decision, three main empirical questions are studied in this section: the difference in governance level between lobbying firms and contributing firms, effect of governance level on the lobbying behavior and effect of governance level on the contribution strategy.

### 4.2.1 Corporate Governance Level and Political Strategy

Before investigating what determines firms' lobbying and contribution strategies, let's first have a look at whether firms making political contributions and firms doing lobbying are different in terms of their corporate governance level, as predicted by the theoretical model. In order to investigate this question, two groups of firms are formed: the lobbying-only group and the contributing-only group. The first group contains all the firms in the dataset that only do lobbying and the second group includes the firms only making contributions through PAC. I compare the two groups to see whether the mean corporate governance level of the two groups are different. The main idea is summarized in the following hypothesis:

$H_0$  : *The lobbying-only group has the same corporate governance level as the contributing-only group.*

$H_1$  : *The lobbying-only group has better corporate governance level than the contributing-only group.*

The hypothesis testing results are shown in Table 4. The columns are the average GIM index for the lobbying-only group, average GIM index for the contributing-only group, the mean difference and t-statistics, respectively. The testing results reject the null hypothesis for all the five election periods (from 1998 to 2006). The lobbying-only group has GIM Index ranging from 8.85 to 9.18, while the index for contributing-only group is from 9.98 to 10.59, for the sample period. This implies that the lobbying-only group's corporate governance level is significantly higher than that of the contributing-only group. Firms tending to use lobbying strategy are the ones with higher shareholders' right. This result coincides with the theoretical prediction that the different political strategies for firms with different corporate governance level.

#### 4.2.2 Corporate Governance and Lobbying Activities

In this section, I use the data described above to investigate what determines firm's lobbying strategy, especially the effect of corporate governance level on lobbying behavior. Based on the predictions from the theoretical results, the empirical question interested is how corporate governance level influences firm's choice in lobbying, which is summarized in the following hypothesis:

$H_0$  : Firm's corporate governance level has no effect on its lobbying activities.  
 $H_1$  : Firm's corporate governance level has a positive effect on its lobbying activities.

To test it, the empirical model applied is:

$$\ln LOBBY_{i,t} = \alpha_0 + \alpha_1 GIMIND_{i,t} + \sum_{k=1}^{10} \alpha_k Z_k + \sum_{t=1999}^{2006} \alpha_t Year_t + \epsilon_{i,t} \quad (14)$$

In equation (14),  $LOBBY_{i,t}$  is the lobbying expenditure in year  $t$  from firm  $i$  and  $GIMIND_{i,t}$  is the GIM corporate governance index in year  $t$  for  $i$ . If doing lobbying brings long-term benefits for the firm, more lobbying spending will be observed when shareholders have more influence at firm. Therefore, the coefficient estimate of  $\alpha_1$  is expected to be negative as the GIM index is a negative measure of shareholders' rights at firm.  $Z_k$  is the serial controlling variables defined in Table 3, to capture the influence from other variables on lobbying expenditures apart from firms' corporate governance level. Dummy variable of  $Year$  is included to control for market effects.

According to the Hausman test result, random effect estimation is used for equation (14). Table 5 reports the regression results of estimating equa-

tion (14). The independent variable interested is the corporate governance level ( $GIMIND_{i,t}$ ). The regression coefficient on  $GIMIND_{i,t}$  is negative ( $-0.051$ ) and statistically significant at the 5% level ( $z = -2.26$ ), indicating that a firm's corporate governance level (or shareholders' power) is positively associated with its current year lobbying expenditures, controlling for other effects. When the shareholders' rights increase by one point according to the GIM index, firms will spend 5.1% more in lobbying expenditure. This result is consistent with the theoretical predictions from section 3. In addition, firms with greater sales and sales impact (larger firms), higher R&D expenditures and lower leverage, or undervalued firms will invest more in the lobbying.

### 4.2.3 Corporate Governance and Political Pressure

In this section, I will study the determinants of firms' contribution strategy to the political parties. Another prediction from the theoretical model is that firms with worse corporate governance level (or higher managers' rights) are more willing to exert political pressure on the politician. Therefore, it is interesting to check whether managers' rights are positively correlated to contribution amount and if there are other determinants of the contribution behavior. To test that effect, the monetary contribution to the Political Action Committee is used as a measure of the exerted political pressure. The empirical question to be investigated is:

$H_0$  : Firm's corporate governance level has no effect on its contribution strategy.

$H_1$  : Firm's corporate governance level has a negative effect on its contribution strategy.

Since the PAC data from CRP is collected every two years (the election cycle), all the other datum, such as corporate governance index, net sales, free cash flows, etc, are all adjusted to two-year period accordingly. For example, the net sales datum for 1997 and 1998 are summed to measure the firm size during the election period 1997-1998. Similar to equation (14), the empirical model is:

$$\ln PAC_{i,t} = \beta_0 + \beta_1 GIMIND_{i,t} + \sum_{k=1}^9 \beta_k Z_k + \sum_{t=2000}^{2006} \beta_t Year_t + \epsilon_{i,t}. \quad (15)$$

In equation (15), the time period is two years, i.e.  $t$  is equal to year 1998, 2000, 2002, 2004 and 2006.  $PAC_{i,t}$  is the contribution from firm  $i$ 's Political

Activity Committee and  $GIMIND_{i,t}$  is the GIM index as before. From the theoretical model,  $\beta_1$  is expected to be positive. The controlling variables vector  $Z$  is the same as those used in equation (14), except R&D expenditures<sup>16</sup>. As usual, the time fixed effect is controlled. Same as the lobbying model (equation (14)), the influence of the corporate governance level on the contribution behavior is also tested by the random effect estimation according to the Hausman test result.

The regression results are reported in Table 6. The regression coefficient on the GIM index ( $GIMIND$ ) is positive (0.021) but statistically insignificant ( $z = 1.09$ ). It indicates that after controlling for other effects and the time effects, the corporate governance level (or shareholders' rights) has a negative but insignificant effect on firms' spending in monetary contributions. Apart from the effect of corporate governance level, overvalued firms tend to contribute more to the political parties. Same as the lobbying strategy, firm's net sales, and sales impact in the industry, has a positive effect on the contribution behavior.

This result is not unexpected due to the informational externality effect, discussed in the theoretical model. Firms with better corporate governance level (higher shareholders' rights) are less willing to do political contribution compared with those with higher managers' rights. However, once they do contribution, they actually contribute more to the politician. This is because of the fact that better corporate governance firms are more willing to invest in the informational lobbying, which helps the politician to have more information of the true world. When the politician's updated belief of the true world increases after the lobbying, firms need to make more contributions to alter politician's choice. Therefore, firms with higher shareholders' rights are less willing to contribute, but once they contribute, they will make more contributions to the politician than those firms with higher managers' rights. Such effects will lead to an obscure effect of corporate governance level on firms' contribution amounts.

To test whether the arguments are supported by the real world data, I build two groups of firms from the dataset: firms with GIM index smaller than 6 and firms with GIM index larger than 13. Define the first group to be a "good corporate governance" group and the second to be a "bad corporate

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<sup>16</sup>I exclude R&D expenditures from the controlling variables because there are a lot of missing data. A regression, similar to equation (15), has been run by including the the R&D expenditures and the effect of R&D expenditure on PAC contribution is statistically insignificant.

governance” group. In order to check whether the “good” group is less willing to do contributions to the politician than the “bad” group, I calculate and compare the percentage of firms doing contributions in each group. To find out whether the “good” group contributes more than the “bad” group, I calculate and compare the average ratio of contribution amount over current year net sales for the two groups. The ratio of contribution to net sales is considered to control the firm size effect. The results are included in Table 7.

Table 7 includes two main results: the percentage of firms doing contribution through PAC in each group and the average contribution amount controlling the firm size effect. For the good corporate governance group ( $GIMIND \leq 6$ ), around 50% firms in the group exert political pressure; while over 70% firms make contributions in the bad corporate governance group ( $GIMIND \geq 13$ ). Hence, firms with high managers’ rights are more willing to exert political pressure than those with high shareholders’ rights. Furthermore, the average ratio of PAC contribution over net sales implies that although the good corporate governance group is less willing to do contribution, they actually contribute more in monetary amount than the other group. This result is in accordance with the informational externality prediction in section 3.

#### 4.2.4 Robustness Test

In the previous sections, firms’ corporate governance level or the shareholders’ right is measured by GIM index, which based on 24 corporate governance provisions. However, Bebchuk, Cohen and Ferrell (2009) argue that not all the provisions considered by GIM index are relevant to the shareholder value. Among the 24 provisions, they identify 6 provisions<sup>17</sup> that do influence shareholder value. The index is called “entrenchment index” (e-index). I use the e-index as a robustness test of the above study.

The results are shown in Table 8 to Table 10. Similar results are obtained as using the GIM index. The significant difference in e-index are found for the lobbying-only group and the contribution-only group. Shareholders’ right is positively correlated with firms’ lobbying expenditures.

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<sup>17</sup>The six provisions include four related to shareholder voting power and two related to hostile offer, poison pills and golden parachute arrangements.

## 5 Conclusion

In the paper, I study whether and how corporate governance level will influence firms' choice in some non market strategies, i.e. political activities. A simple two-period model implies that firm's political strategies can be affected by its corporate governance level. The lobbying investment is increasing in corporate governance level. The long-term effect of lobbying reduces political activity costs in the long run because the firm does not need to make campaign contributions in some situations. This makes it a preferred political strategy to the shareholders who have long-term interests. The effect of corporate governance on the political contribution strategy is just the opposite if the governance level is above a certain threshold. Moreover, better corporate governance level is found to increase the efficiency of decision making process.

Some of these results are tested using related empirical data from the U.S. market. The empirical results confirm the theoretical predictions. Firms only doing lobbying have a significantly better corporate governance level than those only making contributions. Firms with higher shareholders' rights do spend more in lobbying. Informational externality effect exists in the U.S market. Fewer firms with high shareholders' rights choose to make political contributions than those with high managers' rights, but the former contributes more in average amount to the political parties than the latter does.

The robustness to some extensions has been checked. Several assumptions of the theoretical model has been relaxed, i.e. allowing partly correlated or independent test results in two periods, considering the possibility of hiding bad information from the politician, etc. The modifications lead to similar results. For the empirical study, robustness is checked by using another measurement of corporate governance level. Most results remain the same. For future studies, more modifications can be made. For example, in the theoretical model, the corporate governance level is assumed to influence firm's discount rate. This assumption can be extended by taking into account the direct conflict between shareholders and managers and modeling corporate governance effect in a traditional moral hazard circumstance. For empirical study, non-parametric estimation method can be applied to check the robustness of the results. It is also interesting to study the impact of corporate governance level on political strategies in other part of the world such as Europe.

In short, the main findings in the paper imply that corporate governance level can influence firms' political strategies. Better corporate governance

level, i.e. higher shareholders' power, induces more investment in lobbying and less political contributions.

## Appendix

**Table 1: Summary Statistics of Corporate Political Strategies**

**Panel A: Corporate Lobbying Expenditures (1998-2006)**

	<b>No. of Obs.</b>	<b>Sum</b>	<b>Mean</b>	<b>Median</b>	<b>St. Dev.</b>
1998	440	359.68	0.82	0.20	1.78
1999	475	349.14	0.74	0.20	1.41
2000	487	399.17	0.82	0.23	1.60
2001	464	392.25	0.85	0.24	1.66
2002	549	451.65	0.82	0.24	1.63
2003	567	498.20	0.88	0.24	1.72
2004	616	549.58	0.89	0.26	1.78
2005	596	547.93	0.92	0.27	1.91
2006	536	607.75	1.13	0.36	2.33
<b>98-06</b>	4730	4155.35	0.88	0.24	1.78

**Panel B: Corporate Political Contributions (1998-2006)**

	<b>No. of Obs.</b>	<b>Sum</b>	<b>Mean</b>	<b>Median</b>	<b>St. Dev.</b>
1998	306	31.63	0.10	0.05	0.15
2000	366	45.82	0.13	0.06	0.18
2002	408	56.60	0.14	0.06	0.22
2004	452	66.92	0.15	0.07	0.23
2006	386	69.65	0.18	0.09	0.28
<b>98-06</b>	1918	270.62	0.14	0.06	0.22

Table 2: Total Amount at Industry Level

Panel A: Top Five Lobbying Industries

	Pharm. Products	Electric Utilities	Computers Internet	Misc Manu. & Distr.	Defense Aerospace
1998	27.43	31.70	17.56	22.22	14.99
1999	42.01	32.28	17.71	22.14	21.79
2000	38.53	45.43	22.32	30.05	26.54
2001	43.37	35.43	35.44	31.44	26.01
2002	51.63	54.99	33.43	27.30	19.45
2003	53.17	51.57	38.68	34.81	37.57
2004	62.73	53.23	42.13	35.60	38.42
2005	65.55	52.05	38.89	41.27	37.76
2006	77.92	66.37	38.70	35.94	39.94
<b>98-06</b>	462.33	423.06	284.86	280.77	262.47

Panel B: Top Five Contribution Industries

	Electric Utilities	Pharm./ Products	Commercial Banks	Oil & Gas	Air Transport
1998	2.01	1.88	2.17	2.71	0.85
2000	3.37	3.12	4.81	2.99	2.41
2002	6.41	4.01	4.08	3.88	4.21
2004	6.69	5.61	4.06	4.42	4.65
2006	7.01	7.64	4.15	3.72	3.16
<b>98-06</b>	25.50	22.27	19.26	17.72	15.27

**Table 3: Controlling Variable Definitions**

<b>Variables</b>	<b>Definition</b>
Tobin's Q	(Total assets-book value eq.+market value eq.)/total assets
Book/Market	Book value of eq./market value of eq.
ROA	Operating income after depreciation/total asset
Sales Growth	Annually sales growth rate
Free CF	(Net income+dep.- $\Delta$ working capital-capital exp.)/total assets
Leverage	Long-term debt/total assets
R&D	R&D expenditure/total assets
Investment	Investment cash flow/total assets
Sales	Net sales
Sales Impact	Firm sales/total industry sales

**Table 4: Corporate Governance Difference**

	<u>GIM Index</u>			
	<i>Lobbying Gr.</i>	<i>Contributing Gr.</i>	<i>Dif.</i>	<i>t-stat.</i>
1998	8.85	9.98	-1.13	-3.17***
2000	8.85	10.45	-1.60	-4.98***
2002	8.79	10.59	-1.80	-5.43***
2004	8.96	10.47	-1.51	-4.68***
2006	9.18	10.15	-0.97	-2.79***

\*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1% level.

**Table 5: Corporate Governance Level and Lobbying Activities:  
Random Effect**

Dependent Variable: Lobbying Expenditures	
	<i>Coefficient</i> ( <i>z</i> )
GIMIND	−0.051** (−2.26)
Sales	0.235*** (3.44)
R&D	0.249*** (6.31)
Sales Impact	0.137*** (2.76)
ROA	−0.065 (−0.15)
Tobin's Q	−0.201*** (−2.66)
Book/Market	0.008 (0.29)
Sales Growth	−0.056 (−0.74)
Free CF	0.015 (0.08)
Investment	0.29 (1.4)
Leverage	−0.045** (−2.16)
Const.	10.18*** (15.49)
Adj. <i>R</i> <sup>2</sup>	Within:0.1590 Between:0.3208 Overall:0.3690
Number of Obs.	1539
Number of Groups	309
Time Dummies	Yes

The z value is in the parentheses.

\*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1% level.

**Table 6: Corporate Governance Level and Contribution: Random Effect**

Dependent Variable: PAC Contributions	
	<i>Coefficient</i> ( <i>z</i> )
GIMIND	0.021 (1.09)
Sales	0.533*** (10.25)
Sales Impact	0.166*** (3.93)
ROA	-0.082 (-0.16)
Tobin's Q	0.302*** (2.71)
Book/Market	0.021 (0.32)
Sales Growth	-0.222 (-1.58)
Free CF	-0.386 (-1.17)
Investment	0.413 (1.15)
Leverage	-0.021 (-0.61)
Const.	6.059*** (10.32)
Adj. $R^2$	Within:0.1629 Between:0.3524 Overall:0.3799
Number of Obs.	1262
Number of Groups	388
Time Dummies	Y

The z-value is in the parentheses.

\*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1% level.

**Table 7: Lobbying Firms' Contribution Behavior**

	<i>1998</i>	<i>2000</i>	<i>2002</i>	<i>2004</i>	<i>2006</i>
<i>GIMIND</i> ≤ 6 :					
<i>% of firms contribute</i>	53.5%	51.4%	43.8%	44.3%	55.6%
<i>Ave. PAC/NS</i>	12.96	14.81	12.54	10.02	9.92
<i>GIMIND</i> ≥ 13 :					
<i>% of firms contribute</i>	76.8%	77.8%	75%	73.3%	74.6%
<i>Ave. PAC/NS</i>	11.69	8.73	9.23	10.56	9.82
<i>GIMIND</i> ≤ 6: Firms with GIM index smaller than 6.					
<i>GIMIND</i> ≥ 13: Firms with GIM index larger than 13.					

Table 8: Corporate Governance Difference (E-Index)

	<u>E-Index</u>			
	<i>Lobbying Gr.</i>	<i>Contribution Gr.</i>	<i>Dif.</i>	<i>t-stat.</i>
1998	2.19	3.05	-0.86	-4.11***
2000	2.27	3.36	-1.08	-5.52***
2002	2.29	3.31	-1.02	-5.49***
2004	2.35	3.17	-0.82	-4.53***
2006	2.39	3.11	-0.72	-3.75***

\*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1% level.

**Table 9: Corporate Governance Level and Lobbying Activities:  
Random Effect (E-Index)**

Dependent Variable: Lobbying Expenditures	
	<i>Coefficient</i> ( <i>z</i> )
E-INDEX	-0.106*** (-2.64)
Sales	0.217*** (3.19)
R&D	0.245*** (6.20)
Sales Impact	0.139*** (2.81)
ROA	-0.016 (-0.04)
Tobin's Q	-0.204*** (-2.71)
Book/Market	0.01 (0.35)
Sales Growth	-0.05 (-0.64)
Free CF	0.007 (0.04)
Investment	0.283 (1.37)
Leverage	-0.047** (-2.24)
<i>Const.</i>	10.12*** (15.69)
Adj. <i>R</i> <sup>2</sup>	Within:0.1586 Between:0.3247 Overall:0.3760
Number of Obs.	1539
Number of Groups	309
Time Dummies	Yes

The z-value is in the parentheses.

\*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1% level.

**Table 10: Corporate Governance Level and Contribution: Random Effect**

Dependent Variable: PAC Contributions	
	<i>Coefficient</i> ( <i>z</i> )
E-INDEX	0.0056 (0.17)
Sales	0.534*** (10.25)
Sales Impact	0.165*** (3.91)
ROA	-0.081 (-0.15)
Tobin's Q	0.299*** (2.68)
Book/Market	0.018 (0.28)
Sales Growth	-0.22 (-1.56)
Free CF	-0.381 (-1.16)
Investment	0.42 (1.17)
Leverage	-0.029 (-0.58)
Const.	6.23*** (10.95)
Adj. $R^2$	Within:0.1618 Between:0.3521 Overall:0.3799
Number of Obs.	1262
Number of Groups	388
Time Dummies	Yes
Industry Dummies	Yes

The z-value is in the parentheses.

\*, \*\* and \*\*\* denote statistical significance at 10%, 5% and 1% level.

## A Possible Lobbying Investment in Period II

To find out whether the previous theoretical results still exist when the firm might choose to invest in lobbying during the second period, let me denote the correlation of the lobbying strategies in the two periods to parameter  $\lambda \in (0, 1]$ . When  $\lambda = 0$ , the lobbying strategies for the two periods are perfectly correlated, which reflects the basic model in section 2. However,  $\lambda \in (0, 1)$  indicates that the two periods' strategies are partly correlated and  $\lambda = 1$  means that they are uncorrelated.

### A.1 Partly Correlated Test Results ( $\lambda \in (0, 1)$ )

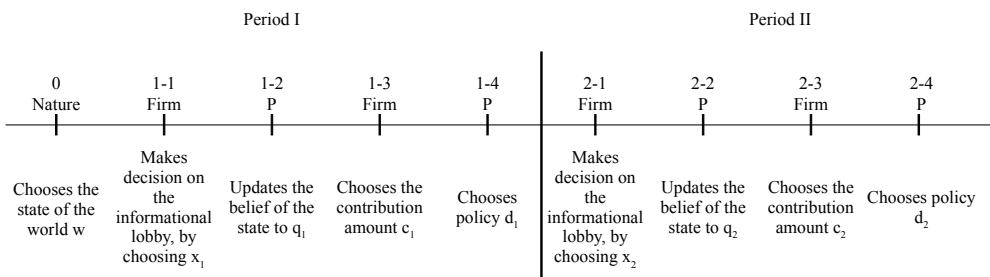
If the lobbying strategies for the two periods are partly correlated, the lobbying strategy from the first period has some effects on that of the second period. At period one, lobbying reveals the true state. Then no investment is necessary in period two, as the state of the world has been found out. When the test fails in period one, the firm might want to invest again in the informational lobbying in period two. However, the failure of test in the first period may make the lobbying in the second period more difficult. Observing a failure test at period one, the firm will know that finding out the true state is not that easy.

The previous model is modified by allowing the firm to invest in lobbying at period two. The new time line is in Figure 2. The sequential game in the first period is the same as before. In period two, now the firm can do informational lobbying again if it fails in period one. Then the politician might have an updated belief of the true state depending on the test result in the second period. Afterwards, the firm decides whether and how much to contribute to the politician and a policy is chosen again in the end of period two. As is discussed before, the firm will only invest in lobbying in period two if the test of period one fails. The failure will lead to a lower probability of success for the firm in the second period, due to the partial correlation. Everything else is the same as the basic model, just that with probability  $\lambda x_2$ , the test will successfully show the true state ( $t_2 = \omega$ ). With probability  $(1 - \lambda x_2)$ , the test also fails in the second period ( $t_2 = \phi$ ). This indicates that the failure in period one incurs lower successful probability in period two.

Solving the new model, I find that most previous equilibrium results still hold:

1. For lower contribution costs, investment is made neither in the first period nor in the second ( $x_1^* = x_2^* = 0$ ). No new information is obtained.

Figure 2: The Time Line



Exerting political pressure is a preferred strategy for the firm. Hence, the firm contributes to the politician at  $(2q_0 - 1)$  and policy  $B$  will be chosen in each period.

2. For intermediate contribution costs, both political strategies are used. The firm will invest in lobbying for both periods, but the investment is higher in the first period ( $x_1^* > x_2^* > 0$ ). In period one, the firm does lobbying, by sending a report to the politician ( $r_1 = \{\omega\}$  if  $t_1 = \omega$  and  $r_1 = \{\phi\}$  otherwise). Then the politician updates his belief of the true state accordingly ( $q_1^r = 0$  if  $r_1 = b$ ,  $q_1^r = 1$  if  $r_1 = a$  and  $q_1^r = q_0$  if  $r_1 = \phi$ ). A contribution of  $(2q_0 - 1)$  is made if the test fails. Policy  $A$  will be chosen for state  $a$  ( $r_1 = a$ ) and  $B$  will be selected otherwise. In the second period, the firm will only invest in lobbying when the test fails in the first period ( $t_1 = \phi$ ). If this is the case, a report will be sent to the politician in the lobbying ( $r_2 = \{\omega\}$  if  $t_2 = \omega$  and  $r_2 = \{\phi\}$  otherwise). The politician will update his belief in the same way as the first period, based on the lobbying. The firm also makes contribution to  $P$  at  $(2q_0 - 1)$  when the test fails ( $t_2 = \phi$ ). Policy  $A$  will be chosen for state  $a$  ( $r_1 = a$  or  $r_1 = phi, r_2 = a$ ) and  $B$  will be selected otherwise.
3. For high contribution costs, only lobbying strategy will be used to influence the politician in both periods. Making contributions become too expensive to afford. The lobbying strategies are the same as those in case of intermediate contribution cost. In period one, policy  $B$  will be chosen for state  $b$  ( $r_1 = b$ ) and  $A$  will be selected otherwise. For period two, policy  $B$  will be chosen for state  $B$  ( $r_1 = b$  or  $r_1 = \phi, r_2 = b$ ) and  $A$  will be selected otherwise.
4. When the correlation of the lobbying strategies for the two periods is very high ( $\lambda \rightarrow 0$ ), the firm will invest in lobbying for period one

( $x_1^* > 0$ ), but few investment in period two ( $x_2^* \rightarrow 0$ ). This is close to the basic model in section 2.

5. For interior solutions of firm's informational lobbying strategies in both periods, I find that better corporate governance level incurs more lobbying investment. However, corporate governance level has a negative effect on the expected political contributions.
6. Better corporate governance level leads to more efficient decision making process.

## A.2 Independent Test Results ( $\lambda = 1$ )

If the lobbying strategies in the two periods are completely independent, whether the test succeeds or not in the first period will have no effect on the difficulty in finding out the true state in the second period. Thus, in this case, I assume that everything else remains the same as the partly correlated case, but now the successful probability for the test in period two is assumed to be  $x_2$  (since now  $\lambda = 1$ ).

Solving the new model again, I find that all the equilibrium results are the same as those with partial correlation strategies, except the following:

1. If the firm invests in lobbying during the first period ( $x_1^* > 0$ ), the investment in lobbying for the second period is also positive ( $x_2^* > 0$ ), but the first period's investment is higher ( $x_1^* > x_2^*$ ).

## B Hidden Information of Test Reporting

Now I will check if the main theoretical results still remains, when the firm can do lobbying by reporting to the politician strategically, i.e. hiding some bad information from the politician.

The time line considered is the same as Figure 1. The informational lobbying strategies for the two periods are assumed to be perfectly correlated. However, instead of buying the the test results from outside market, the firm can carry out the test itself. Although the firm can not tell a lie, as the test result is hard information, it can strategically send a report of the state. If the test fails, no new information will be reported. However, if the test succeeds, the firm may hide the bad information from  $P$ . For example, the firm may not want  $P$  to know the result if  $t = a$ .<sup>18</sup> Therefore,  $r = \{\omega, \phi\}$  if  $t = \omega$  and  $r = \{\phi\}$  if  $t = \phi$ . The politician knows that the firm might hide some bad information in the lobbying. Receiving the report of the state of the world, he will update his belief of state  $a$  to  $q_r = 0$  if the report indicating  $b$  is the true state ( $r = b$ ). Faced with a report of no new information ( $r = \phi$ ), the politician knows that the true state might be  $a$  and updates his belief of  $a$  to  $q_r = \frac{q_0}{1-x+xq_0} \geq q_0$  by Bayes' rule.

Solving the model, I find that the equilibrium results from the basic model are robust to the hidden information extension:

1. For low contribution cost ( $k_c \leq \frac{V}{2q_r-1}$ ), both informational lobbying and political pressure will be used to influence the politician's decision. Policy  $B$  will be chosen for both periods.
2. For high contribution cost ( $k_c > \frac{V}{2q_r-1}$ ), only informational lobbying will be used, since campaign contribution is not affordable. Policy  $B$  will be selected if  $r = b$  and  $A$  will be the policy otherwise.
3. Firm's contribution amount is increasing with politician's updated belief of state  $a$ .
4. Firm's lobbying expenditure is increasing in its corporate governance level.
5. The decision making efficiency is increasing in the corporate governance level.

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<sup>18</sup>The firm benefits from hiding the information when  $t = a$ .

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