Corporate Social Responsibility in a Corporate Governance Framework[*]

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Abstract

We argue that Corporate Social Responsibility (CSR) may affect the agency relationship inside a firm. We analyze how CSR and the threat of stakeholder activism influence effort of manager and shareholder, and describe how CSR may arise endogenously in this context. By engaging in CSR the shareholder can commit to less monitoring, increase the manager's effort, and raise profits. Even a socially indifferent shareholder may thus benefit from CSR and prefer to behave socially responsibly. He may even find it optimal to sponsor a social activist, giving it the means to exert pressure.

Keywords: Corporate Social Responsibility; Corporate governance; Stakeholder activism.

JEL classification: G30, M14.

1 Introduction

Since the 1990s, more and more companies have engaged in Corporate Social Responsibility (CSR), internalizing externalities and voluntarily overcomplying with laws and regulations on environmental and social issues. This behavior seems to conflict with the definition of corporate governance as "the ways in which the suppliers of finance to corporations assure themselves of getting a return on their investment" (Shleifer and Vishny, 1997, p. 737). Why do these shareholders take into account the interests of other, non-investing stakeholders? We answer this question by modelling CSR in a corporate governance framework. We show how CSR may affect the agency relationship between shareholder and manager, and how the shareholder may use it to his own benefit.

Embedding the interests of non-investing stakeholders in corporate governance is challenging. The main difficulty lies in the fact that there seems to be an incompatibility between CSR and the legal notion of managers' fiduciary duties. The latter clearly stipulate that managers must serve the interests of the corporation and its shareholders. This view is perhaps best illustrated by the opinion of Friedman (1970) who argues that "the social responsibility of business is to increase profits." Tirole (2001) discusses the feasibility of the concept of a 'stakeholder society' – which explicitly and exogenously internalizes externalities – to replace the traditional corporate governance framework and concludes that so far its proponents have not been able to successfully come up with a set of governance mechanisms that can foster this concept.

In this paper, we model CSR in a traditional corporate governance framework, showing that we do not need the stakeholder society concept to explain why CSR arises. We consider a principal-agent relationship where shareholder and manager have conflicting interests (based on Burkart et al., 1998;

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and Aghion and Tirole, 1997) and add negative externalities of production imposed on non-investing stakeholders. Also, we introduce an environmental or social activist who represents the stakeholders and may exert pressure on the firm, hurting its reputation and thereby profits. For example, the activist may bring about an adverse (political) climate via a media campaign, a consumer boycott, or a strike. In this model stronger monitoring by the shareholder increase the probability of the manager's decision to be overruled and thus weaken the manager's incentives to exert effort. Thus, the shareholder may be better off if he can commit to less monitoring. We show that both CSR and the threat of pressure by the activist may allow the shareholder to do so. In particular, the shareholder can use CSR as a strategic device to induce the manager to increase effort.

We distinguish various interpretations and forms of CSR. First, CSR may concern altruistic behavior of a socially responsible or 'socially minded' shareholder. More important, we show how CSR may arise endogenously for agency reasons, arguing that a socially indifferent (i.e. purely profit-motivated) shareholder may find it optimal to commit to behave as a socially responsible one. We somewhat cynically term this behavior '*corporate hypocrisy.*' Here, the shareholder chooses the objective function which guides his monitoring behavior, via the extent to which he pretends to care about externalities. By doing so, he commits to reduce his monitoring effort, which increases profits. Next, we argue that since the shareholder may actually benefit from an activist's threat of pressure he may find it optimal to engage in a '*bear hug*' and sponsor an activist to give it the means to exert pressure. Finally, we consider corporate control and contend that when socially responsible and indifferent shareholders coexist the socially responsible type may end up owning the firm.

In the literature, no clear consensus has been established regarding the precise role of CSR. In order to assess this role one first needs to analyze the

underlying circumstances that trigger corporations to engage in CSR. Baron (1995) characterizes CSR activities into two categories: (i) CSR used to respond to pressure groups, avoiding a threat, and (ii) CSR in the absence of pressure groups. In a later article Baron (2001) provides a further classification suggesting that CSR in the latter category is motivated either by altruistic arguments or by profit maximization. Note that actions to avoid a threat usually are profit-maximizing strategies as well. Thus, unless CSR is purely based on altruism, shareholders must benefit financially. The question then is: *how* do shareholders benefit from CSR? Heal (2005) explains CSR from economic fundamentals and interprets it as having an important resource-allocation role. This refers to either alignment of private and social costs of a firm's activities or the reduction of distributional conflicts. By reducing conflicts with their stakeholders or activists CSR may help companies build trust or reputation, which boosts stakeholders' confidence in dealing with them. This may raise the demand faced by the firm[1]; increase the firm's bargaining power (e.g., in wage negotiations or negotiations with suppliers); raise the quality of the pool of available employees, suppliers, or customers; decrease the cost of capital[2]; etcetera. Heal's (2005) explanation of shareholders' benefits from CSR focuses mainly on the effects on the firm's reputation with stakeholders. In this paper, we add to this by modeling CSR in a corporate governance framework and relating it to the agency problem between shareholder and manager.

To the best of our knowledge, there are only a few articles presenting an explicit formalization of the link between corporate governance and stakeholders' interests. Pagano and Volpin (2005) analyze the relationship between managers, shareholders, and workers. Their focus is on how long-term contracts and high wages, which benefit employees (stakeholders), can protect

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[1]See Bagnoli and Watts (2003).
[2]See Heinkel et al. (2001).

managers against hostile takeovers. Cespa and Cestone (2007) investigate the conflicts of interest that might arise between managers, shareholders, and other stakeholders in the case where managers – rather than firms – can commit to CSR, and stakeholders other than shareholders can influence the manager's replacement. Here, we do not analyze the manager's contract or replacement. Instead, we focus directly on the principal-agent problem between the manager and the shareholder.

The remainder of this paper is structured as follows. In Section 2 we present our model of corporate governance in the presence of an activist. Section 3 solves the model. In Section 4 we examine alternative interpretations of CSR in the context of our modeling framework and show how CSR may arise endogenously for agency reasons. Section 5 concludes.

2   The model

This section lays out our theoretical framework. We consider a firm owned by a large (block of) shareholder(s) S and managed by a manager M. There is also an activist A who represents a (group of) stakeholder(s). Each player is risk neutral and maximizes his expected payoff or utility. There are $N+1$ projects, denoted by $i = 0, 1, ..., N$, with $N \geq 5$. Four of these projects are special, including $i = 0$, and will be discussed below. We use a subscript $j \in \{M, S, A\}$ to indicate a payoff to player j, and a superscript $k \in \{M, S, A\}$ to indicate the payoff to a player j if k's preferred project (to be explained below) is implemented.

Implementing a randomly selected project $i \in \{1, ..., N\}$ yields a negative expected payoff to each player, for example because one project gives each of them a payoff of $-\infty$. Project $i = 0$ gives a payoff of 0 to both M, S, and A, and can be interpreted as the 'status quo' project. The other three

special projects are the ones which yield the highest payoff to M, S, and A, respectively. We denote by i_j the preferred project of player j. We assume that there is a conflict of interest between the three players in the sense that they all prefer different projects.

The manager M receives private benefits which take on their highest value $B^M > 0$ for project i_M and value B^j, $0 < B^j < B^M$, for project i_j, $j = S, A$.[3] The shareholder S receives profits[4,5] which take on their highest value $\Pi^S > 0$ for project i_S and value $0 < \Pi^j < \Pi^S$ for project i_j, $j = M, A$. Projects i_M and i_S impose negative externalities on stakeholders. Since the activist represents these stakeholders, we interpret the negative externalities as the 'payoff' for the activist A. The negative externalities take on their highest (i.e. the least negative) value $-\Omega^A$ for project i_A and value $-\Omega^j < -\Omega^A$ for project i_j, $j = M, S$. For simplicity we assume that $\Omega^A = 0$. Thus, the activist is indifferent between the status quo and project i_A, and therefore will not exert pressure against the status quo. However, the manager and the shareholder are not indifferent between the two projects. As will become clear below, the activist never finds it optimal to induce the shareholder to change to the status quo project if either i_M or i_S was implemented initially; however, he may be willing and able to induce the shareholder to change to project i_A. We will refer to this project as the preferred project of the activist (in the situation where the status quo was not implemented initially).

We take into account that the shareholder may be altruistic or socially re-

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[3]Note that in this setup the manager does not receive a share of the profits (from ownership or profit-related wages), but private benefits (and perhaps a fixed wage) only.

[4]Formally, whenever S holds only a fraction of the shares of the firm, this fraction should show up here. We ignore this here for simplicity, and interpret Π as profits that accrue to S.

[5]In the CSR literature, when analyzing the effects of CSR on performance a distinction is made between profit and value (see e.g. Orlitzky et al., 2003). The latter may also take into account a higher willingness to pay of 'green' investors for the shares of firms who engage in CSR. We ignore this effect and focus on profits only.

	Payoffs of project			
	0	i_M	i_S	i_A
Payoffs to				
M	0	B^M	B^S	B^A
S	0	$\Pi^M - \gamma_S\Omega^M$	$\Pi^S - \gamma_S\Omega^S$	Π^A
A	0	$-\Omega^M$	$-\Omega^S$	0

Table 1: Payoffs of the preferred projects of the three players.

sponsible, that is, he may to a certain degree inherently care about the activist's payoff. To model this we incorporate the negative externalities of the projects in the expression for the payoff or utility of the shareholder. Thus, the shareholder's payoff from project i_j, $j = M, S$, is expressed as $\Pi^j - \gamma_S\Omega^j$, where $\gamma_S \geq 0$ indicate the extent to which S cares about A's payoff, i.e. his social responsibility.[6] For now, we will assume that γ_S is an exogenous parameter. We also assume that $\Pi^j - \gamma_S\Omega^j > 0$, $j = M, S$. The payoffs of the relevant projects are summarized in Table 1.

The timing of the model is as follows. At $t = 1$ players M and S simultaneously exert effort $e_j \in [0, 1]$ at cost $e_j^2/2$ in order to collect information. With probability e_M player M then obtains all information (i.e., payoffs to all players from all projects). If M obtains the information, then with probability e_S player S obtains the information as well. So, if M is not informed then neither is S.[7] At $t = 2$ player M announces the project he wants to implement. At $t = 3$ player S may overrule M's decision and announce a different project to be implemented instead. Overruling by S is assumed to be costless. At $t = 4$ the selected project is implemented. At $t = 5$ an activist may exert pressure on the firm, and at $t = 6$ the shareholder may

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[6]Of course, we could also introduce a parameter γ_M describing the extent to which M is socially responsible.

[7]This particular structure follows that in Burkart et al. (1998). It significantly simplifies the calculations without changing the qualitative results of the model. It also stresses the role of the manager in the model.

decide to concede to this pressure. The latter two stages are now discussed in more detail.

At $t = 5$ we assume that with probability p, $0 < p < 1$, there is an activist A. Alternatively, one could think of an activist who is always present, but who is preoccupied with other issues with some probability $1-p$, in which case he has no time or funds available to pressurize the firm. Thus, we assume that the negative externalities are imposed with probability one but the activist is present (may exert pressure) only with probability p. After observing which project is implemented A may exert pressure on the firm, e.g. by damaging the firm's reputation or inducing a boycott or strike which reduces the (future) profitability of the project, promising to restore the reputation if and only if S suspends the project and changes course to implement A's preferred project. More precisely, suppose that at $t = 4$, project $i \neq i_A$ was implemented. We assume that A can exert pressure on the firm, discounting the shareholder's profits by a fraction $1 - \lambda$, $0 < \lambda \leq 1$, at a cost $c_A(\lambda)$, where $c_A(0) = 0$ and $c'_A > 0$. We assume that if S was uninformed, A can reveal the information. Note that the value of λ can be interpreted as the extent of the pressure.[8]

Next, at $t = 6$, S may concede to A's pressure and instruct M to suspend the initially implemented project (at $t = 4$) and implement A's preferred project instead. This comes with a cost $C_j \geq 0$ to $j = M, S$. We assume that this cost is independent of which project was implemented originally, and we assume that $C_S < \Pi^A$ for reasons that will become clear below. Finally, at $t = 7$ payoffs obtain. The timing is summarized in Figure 1.

In order to be able to focus on the three most preferred projects i_j, $j \in \{M, S, A\}$, we impose the following assumption, letting $-\Omega^{-A}$ denote the

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[8]Note that this structure of the model corresponds to the interpretation of CSR as a hygiene factor: a firm is punished if CSR is at a low level, rather than rewarded if CSR is at a high level.
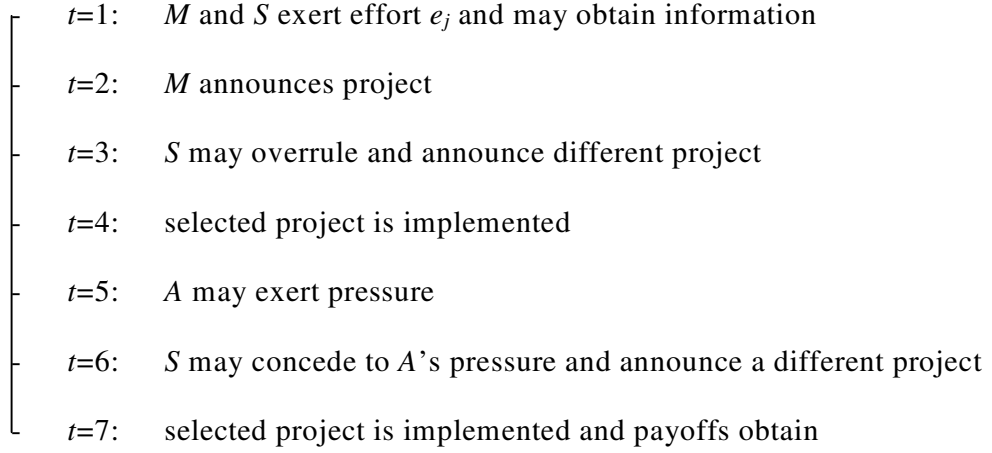
t=1:	*M* and *S* exert effort e_j and may obtain information
t=2:	*M* announces project
t=3:	*S* may overrule and announce different project
t=4:	selected project is implemented
t=5:	*A* may exert pressure
t=6:	*S* may concede to *A*'s pressure and announce a different project
t=7:	selected project is implemented and payoffs obtain

Figure 1: The timing of the model.

payoff to A from any project $i = 1, ..., N$ other than project i_A.

Assumption 1 *We assume that* $\max\left\{-\Omega^{-A}\right\} + c_A(1) \leq 0$.

This condition states that the highest possible payoff to A, which he receives from project i_A (or $i = 0$), is at least $c_A(1)$ more than the payoff he receives from his second-best project. The term $c_A(1)$ reflects the highest possible cost of pressure, which obtains for $\lambda = 1$. The assumption implies that no matter which project i was implemented at $t = 3$, if A wants to exert pressure and convince S to implement a different project, it will be project i_A.

We also impose the following assumptions on the expected payoffs to M and S from their preferred projects.

Assumption 2 *We assume that:*

(i) the expected payoff to M accrued from project i^M when taking into

account that it may be overruled by A, i.e. $(1-p) B^M + p \left(B^A - C_M\right)$, exceeds the expected payoff to M accrued from any project $i \neq i_M$;

(ii) *the expected payoff to S accrued from project i^S when taking into account that it may be overruled by A, i.e. $(1-p) \left(\Pi^S - \gamma_S \Omega^S\right) + p \left(\Pi^A - C_S\right)$, exceeds the expected payoff to S accrued from any project $i \neq i_S$.*

We will explain the role of Assumption 2 in the next section.

Finally, we make an assumption on the initial wealth of A. We will relax this assumption in Section 4.4.

Assumption 3 *The activist A has sufficient initial wealth to be able to exert pressure in the equilibrium of our model.[9]*

3   Solution of the model

We use backward induction to solve the model. At $t = 6$, if the activist has exerted pressure, the shareholder must decide whether or not to concede. The shareholder will concede to the pressure if and only if the payoff of conceding and incurring the associated cost exceeds the payoff of adhering to the implemented project j despite the pressure.[10] Formally, this can be stated as follows.

Condition 1 *The shareholder concedes to the activist's pressure against project j if and only if $\left(\Pi^A - C_S\right) \geq (1-\lambda) \left(\Pi^j - \gamma_S \Omega^j\right)$, or equivalently*

$$\lambda \geq 1 - \left(\Pi^A - C_S\right) / \left(\Pi^j - \gamma_S \Omega^j\right) \equiv a_1^j.$$

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[9]Together with the probability p that the activist is present, this is equivalent to assuming that the activist is present always but has sufficient wealth only with probability p.

[10]For expositional convenience we assume that whenever S is indifferent, he concedes.

Note that since $\lambda \in (0, 1]$, this condition requires $\Pi^A - C_S > 0$ and $\Pi^j - \gamma_S \Omega^j > 0$. We assume that the shareholder's cost of conceding, C_S, is below Π^A, to avoid the case where the shareholder never concedes. Also, we assume that the shareholder's payoff from his most preferred project is sufficiently big even after we take into account the social responsibility effect. In this way, the shareholder may still find it attractive, under some circumstances, to pursue his most preferred project.

At $t = 5$, the activist (if present) will want to exert pressure λ on the firm if and only if the payoff of project i_A net of the costs of exerting successful pressure exceeds the payoff of the implemented project i_j. Formally, this can be stated as follows.

Condition 2 *Under Condition 1, the activist will exert pressure against project j if and only if $-c_A(\lambda) > -\Omega^j$, or equivalently*

$$\lambda < c_A^{-1}\left(\Omega^j\right) \equiv a_2^j.$$

Note that this condition can never hold true for $j = 0$ since $\Omega^0 = 0$ and $c_A^{-1}(0) = 0$, so the activist will not protest against the status quo. Obviously, the activist will only exert pressure if it can indeed induce the shareholder to concede. Using backward induction, this implies that A's preferred project i_A will be implemented at $t = 6$ if and only if Conditions 1 and 2 are both satisfied, which requires $a_2^j > a_1^j$.

Lemma 3 *The optimal pressure exerted by the activist is $\lambda^{j*} = a_1^j = 1 - \left(\Pi^A - C_S\right) / \left(\Pi^j - \gamma_S \Omega^j\right) \in (0, 1]$.*

Proof. The lemma immediately follows using $c_A'(\lambda) > 0$. ∎

At $t = 3$ the shareholder has to decide whether or not to overrule the manager's decision. Note that in general, for some values of the parameters

it could be optimal for S to implement a project different from i_S when he is informed. For example, if S knows that A will successfully exert pressure against i_S but not against i_M, S may select i_M rather than i_S if $(1-p)\left(\Pi^S - \gamma_S\Omega^S\right) + p\left(\Pi^A - C_S\right) < \left(\Pi^M - \gamma_S\Omega^M\right)$. However, to make our analysis more interesting – as well as tractable – we focus on less extreme cases in which each player j continues to have an incentive to implement the project i_j, but the threat of pressure by the activist does affect the effort levels of the manager and the shareholder (as will be shown below). This is the reason why we imposed Assumption 2 above.

Recall that the shareholder may only be informed if the manager is informed, and note that M will select i_M whenever he is informed and $i = 0$ if he is not (see below). If the shareholder is not informed, the best he can do is to approve the project selected by the manager – either project $i = 0$ or project i_M. The latter project yields a strictly positive expected payoff to the shareholder, whereas the status quo yields a payoff of 0, and any other project implemented at random yields a negative expected payoff. If the shareholder is informed, it is optimal for him to overrule and implement project i_S. The payoffs to the shareholder will be discussed in more detail below.

At $t = 2$ the manager has to announce a project. If the manager is not informed, the best he can do is to announce the status quo. If the manager is informed, given Assumption 2, he will find it optimal to implement project i_M. The expected payoff depends on the probability with which he gets overruled by the shareholder, and on the probability with which the activist may exert pressure and succeed in getting his preferred project implemented. These payoffs will be discussed in more detail below.

At $t = 1$ both the manager and the shareholder have to decide on their effort levels. In order derive the optimal effort levels (and the expected payoffs),

we distinguish four scenarios that may prevail, according to whether or not in equilibrium projects i_M and i_S, if implemented, will be replaced by i_A if the activist is present. For each scenario we focus on interior solutions for expositional convenience, ignoring corner solutions, and we derive expressions for the equilibrium effort levels.[11] The four scenarios are:

- Scenario I: Both projects i_M and i_S are replaced;

- Scenario II: Only project i_M is replaced;

- Scenario III: Only project i_S is replaced;

- Scenario IV: No pressure by the activist.

We discuss here only the derivation of the optimal effort levels for Scenario I. For the other three scenarios the analysis is similar; see Appendix A. Note that Scenario IV is equivalent to the case where there is no activist at all, i.e. $p = 0$.

Consider Scenario I, that is, suppose that $a_2^j < a_1^j$ for $j = M, S$. Then, if the activist is present and either project i_M or project i_S was implemented at $t = 4$, in equilibrium the activist will exert pressure. The shareholder S will concede, so that in the end project i_A will be implemented. In equilibrium, the level of pressure exerted is $\lambda^{Ij*} = a_1^j = 1 - \left(\Pi^A - C_S \right) / \left(\Pi^j - \gamma_S \Omega^j \right)$, where we use the superscript I to denote Scenario I. The expected pay-off to the manager from implementing project i_j is given by $(1 - p) \left(B^j \right) + p \left(B^A - C_M \right)$, and the expected payoff to the shareholder is $(1 - p) \left(\Pi^j - \gamma_S \Omega^j \right) +$

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[11]It should be noted that if parameters are such that the expressions for effort derived below become negative, equilibrium effort is 0, and if they exceed 1, equilibrium effort is 1.

$p\left(\Pi^A - C_S\right)$, for $j = M, S$. Using this information, we can write the manager's expected payoff or utility as

$$
\begin{aligned}
U_M^I \;=\;& e_M e_S \left[(1-p)\left(B^S\right) + p\left(B^A - C_M\right)\right] \\
&+ e_M (1 - e_S) \left[(1-p) B^M + p\left(B^A - C_M\right)\right] - e_M^2/2.
\end{aligned}
$$

The shareholder's expected payoff can be written as

$$
\begin{aligned}
U_S^I \;=\;& e_M e_S \left[(1-p)\left(\Pi^S - \gamma_S \Omega^S\right) + p\left(\Pi^A - C_S\right)\right] \\
&+ e_M (1 - e_S) \left[(1-p)\left(\Pi^M - \gamma_S \Omega^M\right) + p\left(\Pi^A - C_S\right)\right] - e_S^2/2.
\end{aligned}
$$

The above expected payoffs are constructed in the following way. With probability $e_M e_S$, the manager and the shareholder are both informed, and the shareholder will overrule the manager's project choice and ask the manager to implement i_S. With probability $e_M (1 - e_S)$, only the manager is informed, and thus it is optimal for the shareholder to let the manager implement i_M. Finally, with probability $(1 - e_M)(1 - e_S)$, the manager and the shareholder are both uninformed, and the status quo will be implemented yielding 0 to both of them.

At $t = 1$, the manager and the shareholder simultaneously maximize their expected payoff with respect to their respective effort levels, i.e. e_M and e_S. The equilibrium effort levels can be derived as

$$
\begin{aligned}
e_M^{I*} \;=\;& \frac{(1-p) B^M + p\left(B^A - C_M\right)}{1 - (1-p)^2 \left[B^S - B^M\right] X}, \\
e_S^{I*} \;=\;& \frac{\left[(1-p) B^M + p\left(B^A - C_M\right)\right](1-p) X}{1 - (1-p)^2 \left[B^S - B^M\right] X},
\end{aligned}
$$

with

$$
X = \Pi^S - \gamma_S \Omega^S - \left(\Pi^M - \gamma_S \Omega^M\right).
$$

4 Corporate Social Responsibility

In this section we consider several interpretations and forms of CSR and show how CSR may arise in the corporate governance framework developed above. Our interpretation of CSR is a broad one. It may refer to very 'explicit' socially responsible behavior, such as the actual implementation of the activist's preferred project – either from the beginning to avoid any threat, or at a later stage in response to activist's pressure. Alternatively, it can be more implicit, for example if altruism induces a socially responsible shareholder to exert less effort and thereby reduces the expected negative externalities of the project to be implemented. We consider different forms of CSR, including altruism of socially responsible shareholders; 'corporate hypocrisy' where socially indifferent shareholders who do not inherently care about negative externalities behave as if they do; and a 'bear hug' where socially indifferent shareholders explicitly sponsor the activist. We also discuss how CSR may arise by way of transfer of corporate control.

4.1 Implementing the activist's preferred project

The most straightforward interpretation of CSR is the actual implementation of the activist's preferred project i_A by the shareholder. Note that if Assumption 2 were violated, it could be optimal for the manager or the shareholder to implement project i_A from the beginning (i.e. at $t = 2$ or $t = 3$, respectively). Although this could indeed occur in reality, it is not very appealing from a modeling perspective, and therefore we ignore this possibility in our analysis. However, we do allow for the possibility that the shareholder concedes to the activist's pressure at $t = 6$ and implements project i_A thereafter. Thus, using this interpretation, the above analysis indicates that for some parameter values it may be optimal for the firm to engage in CSR.

4.2 Socially responsible shareholder

We can also think of CSR as some kind of action or effort that increases the probability with which a project with weaker negative externalities will be implemented. This includes the case where the shareholder himself feels socially responsible, in the sense that he also suffers some disutility from the negative externalities imposed on the activist. In our model this is interpreted as the shareholder having $\gamma_S > 0$.

In this subsection we therefore discuss and compare our results for two cases: first, the case of a socially responsible shareholder with $\gamma_S > 0$, and second, the case of a socially indifferent shareholder, who does not care at all about the negative externalities, i.e. $\gamma_S = 0$. It is quite cumbersome to derive complete comparative statics results of the optimal effort levels in all of the scenarios or to compare effort levels across scenarios. The signs are often ambiguous. Instead, we believe that it is more fruitful to study the manager's and the shareholder's effort levels and their interactions for the two cases $\gamma_S > 0$ versus $\gamma_S = 0$. Doing so will allow us to evaluate the possible impact of shareholder social responsibility on the agency problem, i.e. on the interaction between the shareholder and the manager.

In Scenario I, the best response functions of the manager and the shareholder can be derived as

$$
\begin{aligned}
e_M^* &= e_S^* (1-p) \left(B^S - B^M \right) + (1-p) B^M + p \left(B^A - C_M \right), \\
e_S^* &= e_M^* (1-p) \left(\left(\Pi^S - \Pi^M \right) - \gamma_S \left(\Omega^S - \Omega^M \right) \right).
\end{aligned}
$$

By definition $B^S < B^M$, hence it is obvious that e_M decreases with e_S. This is the adverse effect of shareholder monitoring on managerial effort. However, the impact of an increase in e_M on e_S is ambiguous. It depends on the sign and size of $\gamma_S \left(\Omega^S - \Omega^M \right)$. When the shareholder is socially indifferent ($\gamma_S = 0$), its impact is unambiguously positive. This is because

the shareholder can only be informed if the manager is informed. If the manager increases his effort, his chance of being informed will increase, and this will benefit the shareholder and induce him to exert higher effort. An increase in the probability of the activist's pressure, p, will not only influence e_M (or e_S) directly, but also indirectly through a change in e_S (or e_M). Therefore, the impact of a change in p on e_M and e_S is ambiguous. Similar arguments apply to Scenarios II-IV.

Note that when γ_S increases we may move from one scenario to another. Recall that A's preferred project will be implemented in equilibrium if and only if $a_1^j = \left(\Pi^A - C_S\right) / \left(\Pi^j - \gamma_S \Omega^j\right) > a_2^j$, for $j = M, S$. Suppose that we are initially in Scenario IV in which both projects are not replaced by the activist's project. When the shareholder becomes more socially responsible (γ_S increases), the left-hand side (LHS) of the expression increases. For some parameter values, we may end up in Scenario II in which $a_1^M > a_2^M$ and $a_1^S < a_2^S$, and thus only the manager's preferred project will be replaced. We may also end up in Scenario I or III.

When we compare effort levels for both cases within a given scenario, it can easily be verified that having a socially responsible shareholder may either increase or decrease the manager's effort level. This depends on the relative magnitude of the externalities imposed on the activist or stakeholder by the shareholder's preferred project and the manager's preferred project, Ω^S and Ω^M. Note that the shareholder's own effort level differs among the two cases as well. We have the following result:

Result 1 *In our model, comparing a socially responsible shareholder to a socially indifferent shareholder, we find that (i) the effort level of a socially responsible shareholder is lower than that of a socially indifferent shareholder and (ii) the effort level of the manager is higher in the presence of a socially*

responsible shareholder than with an socially indifferent shareholder if

$$\begin{cases} \Omega^S > \Omega^M & \text{in Scenarios I and IV,} \\ \Omega^S > (1-p)\,\Omega^M & \text{in Scenario II,} \\ (1-p)\,\Omega^S > \Omega^M & \text{in Scenario III;} \end{cases}$$

we find the opposite result otherwise.

Proof. See Appendix B. ■

The intuition behind this result is the following. When the condition stated in the result is satisfied, project i_S is relatively less attractive as compared to project i_M to a socially responsible shareholder than it is to a socially indifferent shareholder. Thus, in this situation the socially responsible shareholder has weaker incentives to monitor and overrule the manager, which gives the manager stronger incentives to exert effort. If the condition is *not* satisfied, project i_S is relatively more attractive to the socially responsible shareholder, which increases his incentives to monitor and thereby lowers the effort of the manager.

Summarizing, a socially responsible shareholder will adjust his effort level in favor of a project with weaker externalities, thereby making it more likely that this project is implemented. Note that this result is also valid in the absence of an activist, where Scenario IV applies.[12]

4.3 Corporate hypocrisy

In the previous subsection we have seen that being socially responsible may give weaker incentives to monitor for the shareholder, and thus may strengthen the manager's incentive to exert effort and increase the shareholder's monetary payoff. The next step is to evaluate whether a shareholder can benefit

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[12]In this scenario, even though the activist will never exert pressure, there *are* negative externalities. The behavior of the socially responsible shareholder and the socially indifferent shareholder will therefore be different.

from somehow committing to such CSR. That is, will a socially indifferent shareholder have an incentive to 'mimic' a socially responsible shareholder, and behave as if he inherently cares about the negative externalities imposed on the activist? We demonstrate below that this may indeed be the case. We believe that in reality, a shareholder may behave as if he is socially responsible even though in fact he does not inherently care about stakeholders. This can be done for example by making an explicit assertion in the firm's mission statement that the shareholder is concerned with the negative externalities and acts accordingly.[13] Such a statement acts as a commitment device for the shareholder, in the sense that the shareholder cannot deviate from it without being severely punished by the activist or the public. The shareholder does this simply because he foresees some benefits from doing so. Indeed, this is how cynics have often described firms that engage in CSR.

In this setting the negative externalities do *not* show up in the shareholder's *true* payoff function, but the shareholder now commits to behaving according to a different objective function which *does* include the externalities. In a nutshell, we consider the case in which γ_S is a strategic variable to be chosen endogenously by the shareholder at $t = 0$.[14] We refer to this as 'corporate hypocrisy' (as opposed to corporate social responsibility) because the shareholder is in fact socially indifferent ($\gamma_S = 0$) but claims to be socially responsible, i.e. pretends to have $\gamma_S > 0$, in order to raise his payoffs.

This implies that the payoff of the manager and the 'true' payoff of the

---

[13]It is easy to find examples of firms who mention CSR in their mission statement. Of course it is hard to verify whether this is evidence of corporate hypocrisy. We acknowledge that some of them have been referring and committing to CSR long before it became fashionable, or because their ownership is in the hands of people who inherently care (see also Section 4.5), but it seems that others do so merely for strategic reasons.

[14]Of course, one could think of corporate hypocrisy with endogenous γ_M (rather than or next to endogenous γ_S), so where the shareholder – or even the manager himself – could somehow let te manager commit to act as if he cares for the activist's payoff. We abstract from this possibility.

socially indifferent shareholder will still have the same form as derived in Section 3, except that now $\gamma_S = 0$. Let us denote this true payoff by U_S. Instead of choosing the effort level that will maximize this true payoff (e_S^* with $\gamma_S = 0$), the socially indifferent shareholder deliberately commits to choose an optimal effort level that will maximize the payoff of a socially responsible shareholder by acting as if his payoff is given by $\Pi - \gamma_S \Omega$ (rather than Π). With a slight abuse of notation, we denote this payoff by $\widetilde{U}_S$ and the optimal effort levels that maximize this payoff by $\widetilde{e}_S$ and $\widetilde{e}_M$.[15]

We evaluate whether or not the shareholder indeed has an incentive to set $\gamma_S > 0$ at $t = 0$. Our conjecture is that by pretending to care for negative social or environmental externalities of the projects for some parameter values, the shareholder can commit to exerting lower effort. This occurs if the activist's payoff is high for the status quo but low for the project preferred by the shareholder, i_S. Precisely because of this commitment effect the manager may be induced to increase his effort, and this will benefit the shareholder.[16] This explains why the shareholder would endogenously choose to engage in CSR.

Note that deriving the precise value of γ_S which maximizes the shareholder's expected payoff is analytically difficult because of the possibility of shifting from one scenario to another when γ_S changes, and due to possible corner solutions. Instead of solving for this optimal value, we therefore focus on verifying whether the socially indifferent shareholder has an incentive to deviate from $\gamma_S = 0$. If this is indeed the case, it implies that the shareholder finds it optimal to set some strictly positive value for γ_S.

To verify the incentive of the shareholder to set $\gamma_S > 0$, we consider the magnitude of the shareholder's true payoff (U_S) evaluated at the effort level $\widetilde{e}_S$

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[15]Note that $\widetilde{U}_S$, $\widetilde{e}_S$ and $\widetilde{e}_M$ are equivalent to our previously derived U_S, e_S^* and e_M^* in Section 3 with $\gamma_S > 0$.

[16]See also Result 1.

that maximizes a socially responsible shareholder's expected payoff $\widetilde{U}_S$ (for a given value of $\gamma_S > 0$). We compare this to the magnitude of the shareholder's true payoff evaluated at the effort level e_S^* that maximizes this true payoff function U_S. Thus, we evaluate the sign of the following expression

$$\Delta U_S = U_S\left(\widetilde{e}_S, \widetilde{e}_M\right) - U_S\left(e_S^*, e_M^*\right),$$

and analyze whether it is possible to have $\Delta U_S \geq 0$.

We have the following result.

Result 2 *In our model, for either of the four scenarios, it can be shown that the socially indifferent shareholder may find it optimal to set a strictly positive γ_S at $t = 0$, i.e. to commit to socially responsible behavior. The incentive for the shareholder to commit to socially responsible behavior is present even when there is no threat of pressure by the activist (i.e. in Scenario IV).*

Proof. See Appendix B. ∎

The intuition for this result is as follows, focusing on Scenario I which is 'symmetric' in the sense that no matter which project was implemented (i_M or i_S), A will exert successful pressure whenever he is present. Suppose $\Omega^S > \Omega^M$, i.e. the negative externalities from project i_S are larger in absolute value than those from project i_M. Whenever the shareholder is informed, given our assumptions, he will replace the project announced by the manager by project i_S at $t = 3$. In that case, replacing project i_M with project i_S increases the negative externalities. For a shareholder who (behaves as if he) suffers some disutility from the negative externalities imposed on the activist, such overruling is less attractive. This induces him to exert lower monitoring effort for any given e_M (see also Result 1). As in the standard Burkart et al. (1998) framework, lower monitoring effort by the shareholder reduces the probability that the manager is overruled and therefore implies higher effort

by the manager, which is beneficial to the shareholder. Thus, the shareholder uses socially responsible behavior to commit to lower monitoring effort in order to induce the manager to increase his effort. Consequently CSR arises endogenously for agency reasons. Note that the same reasoning applies in Scenario IV when there is no threat of pressure by the activist ($p = 0$).

Summarizing, we have shown that a company may choose to engage in CSR not only in the presence of pressure groups, but also in the absence of pressure groups. These results are in line with Baron (1995, 2001) on different forms of CSR as mentioned in the introduction. In the former case, the company engages in CSR either by conceding to the activist's pressure or by avoiding such pressure. In the latter case, the company engages in CSR either because the shareholder is socially responsible or because he commits ex ante to behave as if he is (setting $\gamma_S > 0$ endogenously). Note that the case of corporate hypocrisy is observationally equivalent to the case where the shareholder is socially responsible. Empirically, it will be very difficult to distinguish between these two situations.

4.4   Bear hug

In this subsection we take the discussion one step further. If we know that the threat of pressure by the activist affects the manager's and shareholder's behavior and thereby their payoffs, and that the shareholder may benefit from committing to socially responsible behavior, could it also be the case that the shareholder actually benefits from the presence of the activist? If so, then in a situation without any threat of pressure ($p = 0$), the shareholder may find it optimal to sponsor a stakeholder at $t = 0$ in order to allow the stakeholder to become an activist and possibly exert pressure on the firm ($p > 0$). In this way the shareholder introduces another agent who monitors the manager as well as the shareholder himself. Clearly, sponsoring the

activist can be interpreted as CSR. In the real world, a firm sponsoring an activist may be distrusted and accused of bribing. We show that the firm's owner may sincerely hope that the activist will use the funds to put pressure on the firm – albeit for profit maximizing reasons.

In order to develop some intuition, let us focus on Scenario III. Here, the activist - if present – will only exert successful pressure against project i_S in equilibrium, not against i_M. By sponsoring the activist, the shareholder can reduce his own monitoring effort. This induces the manager to exert more effort, which is beneficial to the shareholder. In Appendix C we present a numerical example which confirms this intuition. In this example we assume for simplicity that $\gamma_S = 0$, abstracting from altruism and corporate hypocrisy. We show that indeed the shareholder can increase his expected payoff by sponsoring a stakeholder at $t = 0$ to become an activist who exerts successful pressure (with probability p) – even if this pressure is against the shareholder's own preferred project i_S. The shareholder is willing to provide all the funds required by the activist to exert pressure on the firm. Of course, one can also imagine a situation where the activist already has some funds available, but those initial funds are not sufficient to cover the costs of successful pressure. In that case, the shareholder may only need to give a very limited amount of funds to the stakeholder/activist in order to induce it to exert successful pressure.

This discussion raises yet another question. If the activist has sufficient funds available, then why would he exert pressure only with some probability $p < 1$? As we argued before, in some situations it seems plausible to argue that the activist may also exert pressure on other firms or agents, and if he has decided to do so before our firm turns out to announce a project with negative externalities, the activist may simply have spent his money otherwise. Thus, if there are other issues which the activist may protest against, and if these issues are more severe or arise earlier, then the activist

may not exert pressure even though he has sufficient funds available initially. Finally, as we mentioned above we require conditions on Ω^M and Ω^S for Scenario III to arise. More precisely, in our numerical example we require $\Omega^S > \frac{9}{200}$ for the activist to indeed be willing to exert pressure against project i_S, and we could argue that Ω^S follows some probability distribution with median $\frac{9}{200}$. In that case, the condition $\Omega^S > \frac{9}{200}$ will be satisfied only with probability $\frac{1}{2}$ and the activist will exert pressure only with $p = \frac{1}{2}$, as we assume in the example.

4.5 Socially responsible shareholders taking over

Here, we will briefly discuss how altruism-based CSR may arise in our framework by way of transfer of corporate control. If there are two types of shareholders, one of which is socially responsible and thus inherently cares about the activist, and the other who does not inherently care, then the socially responsible type may value the shares of the firm more than the other type does, and therefore may end up taking over the firm.

Suppose that the firm's shares are freely traded, and that all agents who initially own or may buy the shares are identical, except for one characteristic, namely their value of γ_S. Suppose that there are two types of agents: a socially responsible type with $\gamma_S = \bar{\gamma}_S > 0$, and a socially indifferent type with $\gamma_S = 0$.[17] The analysis in Section 4.3 illustrates that for some values of the parameters, the expected *monetary* payoff from being a shareholder of this firm is higher for the socially responsible type than for the socially indifferent type.[18] This suggests that the socially responsible type may be

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[17]Clearly, the discussion extends to the case where both types of agents are altruistic, but one is more altruistic than the other.

[18]Note that we refer to the *monetary payoff* here, which may be higher for the altruistic type than for the non-altruistic type, even though the overall expected payoff or *utility* of the altruistic type may well be lower than that of the non-altruistic type because it includes a term $-\bar{\gamma}_S\Omega$. In the discussion here, on takeovers, we need to focus on monetary

willing to buy shares from the socially indifferent type, who is willing to sell. Of course, this depends on the question whether the socially responsible type always cares about the negative externalities, or only cares if he himself owns the firm. In the latter case, the socially responsible type will be willing and able to buy the shares only if the difference between his and the socially indifferent type's monetary profits is sufficiently large to outweigh the change in his overall payoff or utility resulting from owning the firm in the presence of externalities. As before, this argument holds with or without the presence of an activist.

Although we do not present a detailed formal analysis here, this discussion indicates that for some parameter values, there may be a transfer of control from the socially indifferent type to the socially responsible type because the latter has an incentive to buy the shares that the former type has an incentive to sell. This provides an alternative explanation of how CSR may arise in our framework without resorting to corporate hypocrisy or sponsoring, but simply by allowing heterogeneous agents some of whom are more socially responsible than others. Here, the agents who end up being the owners of the firm could be those who inherently care about the negative externalities exerted on stakeholders.

5 Conclusion

In this paper, we have modelled CSR in the context of a corporate governance framework originally developed by Burkart et al. (1998). We have described how shareholder social responsibility and the threat of pressure by an activist affect effort levels of manager and shareholder. Since CSR may allow the shareholder to commit to lower monitoring effort, it may induce the manager

---

payoffs since those determine the willingness to pay for a firm's shares.

to exert higher effort, thereby raising profits. Thus, CSR may help solving the agency problem.

We have analyzed different interpretations and forms of CSR and discussed how they may arise in the context of a principal-agent structure. First, interpreting CSR as a straightforward implementation of the activist's preferred project, we show that it may be payoff-maximizing for the manager or the shareholder to implement this project either from the beginning or as a response to activist's pressure. Second, a socially responsible or altruistic shareholder taking into account negative externalities may adjust his effort level in order to decrease the expected externalities. Third, a shareholder may find it optimal to commit to act *as if* he is socially responsible and cares about negative externalities. We referred to this as 'corporate hypocrisy.' For some parameter values, this reduces the shareholder's incentive to exert effort, increases the manager's effort and raised profits. Fourth, we show that the shareholder may benefit from the threat of pressure by the activist and may therefore find it optimal to engage in a 'bear hug' and sponsor an activist to give it the means to exert pressure. Fifth, we illustrated that if there are two types of shareholders, one socially responsible and the other one socially indifferent, the socially responsible type may be able to extract greater monetary payoffs from the firm and therefore may end up owning the firm. CSR due to altruism (whether or not via a takeover) or corporate hypocrisy may even arise in the absence of an activist. Nevertheless, the shareholder has an incentive to respond to the possible presence of an activist and moreover may have an incentive to introduce an activist by financing it.

Our framework allows for numerous extensions. For example, we could add a government at the beginning of the game who may tax the profits of projects with negative externalities or subsidize the activist's preferred project i_A. Clearly, this would affect the incentive to exert effort of both the manager

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and the shareholder. Other possible extensions include letting the manager own an equity stake in the firm so that incentives of manager and shareholder become more aligned, and letting the manager (rather than the shareholder) be socially responsible or commit to CSR.

In our analysis, we have used many simplifying assumptions and therefore focus on specific situations. Our framework shows that CSR may be explained by agency reasons. However, either a more general framework or models tailored to particular situations or markets are needed to assess when exactly and to what extent firms engage in CSR. This is left for future research.

Appendix A: Derivation of equilibrium effort levels for Scenarios II-IV

Scenario II: Only project i_M is replaced Suppose that $a_2^M < a_1^M$ but $a_2^S \geq a_1^S$, then if the activist is present and project i_M was implemented at $t = 4$, in equilibrium the activist will exert pressure and the shareholder S will concede, so that in the end project i_A will be implemented. However, if project i_S was implemented at $t = 4$, in equilibrium i_A will not be implemented at $t = 6$ because it is too expensive for the activist to force the shareholder to concede. Expected payoffs of the manager and shareholder are constructed in the same fashion as in Scenario 1, and are now given by

$$
\begin{aligned}
U_M^{II} &= e_M e_S \left(B^S \right) + \\
&\quad e_M \left(1 - e_S \right) \left[\left(1 - p \right) B^M + p \left(B^A - C_M \right) \right] - e_M^2/2, \\
U_S^{II} &= e_M e_S \left(\Pi^S - \gamma_S \Omega^S \right) + \\
&\quad e_M \left(1 - e_S \right) \left[\left(1 - p \right) \left(\Pi^M - \gamma_S \Omega^M \right) + p \left(\Pi^A - C_S \right) \right] - e_S^2/2.
\end{aligned}
$$

The equilibrium effort levels can be derived as

$$e_M^{II*} = \frac{\left[(1-p)B^M + p\left(B^A - C_M\right)\right]}{1 - \left[(B^S) - (1-p)B^M - p\left(B^A - C_M\right)\right]Y},$$

$$e_S^{II*} = \frac{\left[(1-p)B^M + p\left(B^A - C_M\right)\right]Y}{1 - \left[(B^S) - (1-p)B^M - p\left(B^A - C_M\right)\right]Y},$$

with

$$Y = \Pi^S - \gamma_S \Omega^S - \left[(1-p)\left(\Pi^M - \gamma_S \Omega^M\right) + p\left(\Pi^A - C_S\right)\right].$$

Scenario III: Only project i_S is replaced   Suppose that $a_2^S < a_1^S$ but $a_2^M \geq a_1^M$, then if the activist is present and project i_S was implemented at $t = 4$, in equilibrium the activist will exert pressure and the shareholder S will concede, so that in the end project i_A will be implemented. However, if project i_M was implemented at $t = 4$, in equilibrium i_A will not be implemented at $t = 6$, because it is too expensive for the activist to induce the shareholder to concede. Expected payoffs of the manager and shareholder are now given by

$$
\begin{aligned}
U_M^{III} &= e_M e_S \left[(1-p)\left(B^S\right) + p\left(B^A - C_M\right)\right] + \\
&\quad e_M \left(1 - e_S\right) B^M - e_M^2/2, \\
U_S^{III} &= e_M e_S \left[(1-p)\left(\Pi^S - \gamma_S \Omega^S\right) + p\left(\Pi^A - C_S\right)\right] + \\
&\quad e_M \left(1 - e_S\right)\left(\Pi^M - \gamma_S \Omega^M\right) - e_S^2/2.
\end{aligned}
$$

The equilibrium effort levels can be derived as

$$e_M^{III*} = \frac{B^M}{1 - \left[(1-p)\left(B^S\right) + p\left(B^A - C_M\right) - B^M\right]Z},$$

$$e_S^{III*} = \frac{B^M Z}{1 - \left[(1-p)\left(B^S\right) + p\left(B^A - C_M\right) - B^M\right]Z},$$

with

$$Z = (1-p)\left(\Pi^S - \gamma_S \Omega^S\right) + p\left(\Pi^A - C_S\right) - \left(\Pi^M - \gamma_S \Omega^M\right).$$

Scenario IV**: No pressure by the activist** Suppose that $a_2^j \geq a_1^j$, $j = M, S$. Then, in equilibrium the activist never finds it optimal to exert pressure, no matter which project was implemented originally. This implies that in Scenario IV we are back to the original Burkart et al. (1998) setting. Expected payoffs of the manager and shareholder are now given by

$$
\begin{aligned}
U_M^{IV} &= e_M e_S \left(B^S \right) + e_M \left(1 - e_S \right) B^M - e_M^2/2, \\
U_S^{IV} &= e_M e_S \left(\Pi^S - \gamma_S \Omega^S \right) + e_M \left(1 - e_S \right) \left(\Pi^M - \gamma_S \Omega^M \right) - e_S^2/2.
\end{aligned}
$$

The equilibrium effort levels can be derived as

$$
\begin{aligned}
e_M^{IV*} &= \frac{B^M}{1 - \left(B^S - B^M \right) \left(\Pi^S - \gamma_S \Omega^S - \left(\Pi^M - \gamma_S \Omega^M \right) \right)}, \\
e_S^{IV*} &= \frac{B^M \left(\Pi^S - \gamma_S \Omega^S - \left(\Pi^M - \gamma_S \Omega^M \right) \right)}{1 - \left(B^S - B^M \right) \left(\Pi^S - \gamma_S \Omega^S - \left(\Pi^M - \gamma_S \Omega^M \right) \right)}.
\end{aligned}
$$

Appendix B: Proofs of Results 1 and 2

Proof of Result 1 It can be verified that for Scenarios I and IV we have

$$
\mathrm{sign}(\frac{de_M^{I*}}{d\gamma_S}) = -\mathrm{sign}(\frac{de_S^{I*}}{d\gamma_S}) = \mathrm{sign}\left(\Omega^S - \Omega^M \right),
$$

whereas for Scenario II we have

$$
\mathrm{sign}(\frac{de_M^{II*}}{d\gamma_S}) = -\mathrm{sign}(\frac{de_S^{II*}}{d\gamma_S}) = \mathrm{sign}\left(\Omega^S - \left(1 - p \right) \Omega^M \right)
$$

and for Scenario III

$$
\mathrm{sign}(\frac{de_M^{II*}}{d\gamma_S}) = -\mathrm{sign}(\frac{de_S^{II*}}{d\gamma_S}) = \mathrm{sign}\left(\left(1 - p \right) \Omega^S - \Omega^M \right).
$$

The result then follows using the fact that the socially responsible shareholder has $\gamma_S > 0$ whereas the irresponsible shareholder has $\gamma_S = 0$. ∎

Proof of Result 2   To verify that there is a $\gamma_S > 0$ for which $\Delta U_S \geq 0$ it is sufficient to show that $dU_S \left(\widetilde{e}_S, \widetilde{e}_M \right) / d\gamma_S > 0$ for γ_S near zero. Note that

$$\frac{dU_S}{d\gamma_S} = \frac{\partial U_S}{\partial \widetilde{e}_S} \frac{d\widetilde{e}_S}{d\gamma_S} + \frac{\partial U_S}{\partial \widetilde{e}_M} \frac{d\widetilde{e}_M}{d\gamma_S}. \tag{1}$$

Consider Scenario I. We have

$$
\begin{aligned}
\frac{\partial U_S^I}{\partial \widetilde{e}_S^I} &= \widetilde{e}_M^I \left(\left[(1-p)\, \Pi^S + p \left(\Pi^A - C_S \right) \right] - \left[(1-p)\, \Pi^M + p \left(\Pi^A - C_S \right) \right] \right) - \widetilde{e}_S^I \\
&= \widetilde{e}_M^I \gamma_S \left(1 - p \right) \left(\Omega^S - \Omega^M \right),
\end{aligned}
$$

so the sign of this derivative equals the sign of $\Omega^S - \Omega^M$. Thus, using Result 1 the first term in (1) is negative. However, evaluated in the point $\gamma_S = 0$ this term equals zero. Next, we have

$$\frac{\partial U_S^I}{\partial \widetilde{e}_M^I} = \widetilde{e}_S^I \left(1 - p \right) \left(\Pi^S - \Pi^M \right) + (1-p)\, \Pi^M + p \left(\Pi^A - C_S \right) > 0,$$

and again using Result 1 the sign of the second term in (1) equals the sign of $\Omega^S - \Omega^M$. That is, the second term is strictly positive (even for $\gamma_S = 0$) whenever $\Omega^S > \Omega^M$. So, if parameters are such that we end up in Scenario I and furthermore $\Omega^S > \Omega^M$ we have $dU_S^I / d\gamma_S > 0$ at least for γ_S near zero, that is, the shareholder will find it optimal to set some $\gamma_S > 0$.

The proof for the other scenarios goes along the same lines, and it can be verified that if parameters are such that if we are in Scenario $x \in \{I, II, III, IV\}$ and furthermore

$$
\begin{cases}
\Omega^S > \Omega^M & \text{for Scenarios } x \in \{I, IV\}, \\
\Omega^S > (1-p)\, \Omega^M & \text{for Scenario } x = II, \\
(1-p)\, \Omega^S > \Omega^M & \text{for Scenario } x = III;
\end{cases}
$$

we have $dU_S^I / d\gamma_S > 0$ at least for γ_S near 0, that is, the shareholder will find it optimal to set some $\gamma_S > 0$.   ∎

Appendix C: Numerical example of bear hug

In this appendix we present a numerical example of the bear hug discussed in Section 4.4. We assume that $\gamma_S = 0$ for simplicity – that is, we abstract from altruism and corporate hypocrisy here – and we compare the shareholder's equilibrium payoff to his equilibrium payoff without the activist (i.e., substituting $p = 0$, which is equivalent to using the expressions as derived in Appendix A for Scenario IV). In this example the shareholder indeed finds it optimal to fund an activist who will overrule the project i_S which the shareholder himself selects whenever he is informed.

Suppose that we have the following:

$$
\begin{aligned}
\Pi^M &= 8, \ \Pi^S = 10, \ \Pi^A = 7, \\
B^M &= \frac{1}{2}, \ B^S = B^A = \frac{1}{4}, \\
C_S &= C_M = 0, \ p = \frac{1}{2},
\end{aligned}
$$

the activist's cost of exerting pressure is $c_A = \lambda^2/2$, and Ω^M, Ω^S are such that the conditions for Scenario III are satisfied.[19] Then we have $e_M^{III*} = \frac{4}{9}$ and $e_S^{III*} = \frac{2}{9}$, and expected payoff for the shareholder is $U_S^{III*} = \frac{290}{81} \simeq$ 3.580. Without the activist, effort levels would be $e_M^{III*}|_{p=0} = e_M^{IV*} = \frac{1}{3}$ and $e_S^{III*}|_{p=0} = e_S^{IV*} = \frac{2}{3}$, and the shareholder's expected payoff is given by $U_S^{III}|_{p=0} = U_S^{IV} = \frac{26}{9} \simeq$ 2.889. So indeed, for these parameter values the shareholder can increase his expected payoff by introducing an activist who exerts successful pressure (with probability $p = \frac{1}{2}$) – even though this pressure is against the shareholder's own preferred project i_S.

The expected payoff to the shareholder increases by approximately 3.580 − 2.889 = 0.691. Since we set $\gamma_S = 0$, this can be interpreted as the change

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[19]The conditions on parameters for scenario III are $a_2^S < a_1^S$ and $a_2^M \geq a_1^M$, which for this numerical example can be rewritten as $\Omega^S > \frac{9}{200}$ and $\Omega^M \leq \frac{1}{128}$.

in the shareholder's expected *monetary* payoff. The cost to the activist of exerting successful pressure is given by $\frac{1}{2}\left(1-\left(\Pi^A-C_S\right)/\Pi^S\right)^2 = \frac{9}{200} \simeq$ 0.045, thus in this example the shareholder is indeed willing to provide all the funds required by the activist to exert pressure on the firm.

References

AGHION, P., AND J. TIROLE (1997): "Formal and Real Authority in Organizations," *Journal of Political Economy*, 105(1), 1–29.

BAGNOLI, M., AND S. G. WATTS (2003): "Selling to Socially Responsible Consumers: Competition and the Private Provision of Public Goods," *Journal of Economics and Management Strategy*, 12(3), 419–445.

BARON, D. P. (1995): *Business and its Environment*. Prentice Hall, New Jersey.

———— (2001): "Private Politics, Corporate Social Responsibility, and Integrated Strategy," *Journal of Economics and Management Strategy*, 10(1), 7–45.

BURKART, M., D. GROMB, AND F. PANUNZI (1998): "Large Shareholders, Monitoring, and the Value of the Firm," *Quarterly Journal of Economics*, 112(3), 693–729.

CESPA, G., AND G. CESTONE (2007): "Corporate Social Responsibility and Managerial Entrenchment," *Journal of Economics and Management Strategy*, forthcoming.

FRIEDMAN, M. (1970): "The Social Responsibility of Business is to Increase Profits," *New York Times Magazine*, 32-33, 122–126, September 13.

HEAL, G. (2005): "Corporate Social Responsibility: An Economic and Financial Framework," *Geneva Papers*, 30(3), 387–409.

HEINKEL, R., A. KRAUS, AND J. ZECHNER (2001): "The Effect of Green Investment on Corporate Behavior," *Journal of Financial and Quantitative Analysis*, 36(4), 431–449.

ORLITZKY, M., F. L. SCHMIDT, AND S. L. RYNES (2003): "Corporate Social and Financial Performance: A Meta-Analysis," *Organization Studies*, 24(3), 403–441.

PAGANO, M., AND P. VOLPIN (2005): "Managers, Workers, and Corporate Control," *Journal of Finance*, 60(2), 841–868.

SHLEIFER, A., AND R. W. VISHNY (1997): "A Survey of Corporate Governance," *Journal of Finance*, 52(2), 737–783.

TIROLE, J. (2001): "Corporate Governance," *Econometrica*, 69(1), 1–35.