# A Positive Theory of Morally-Motivated Management
# and Corporate Social Performance

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## I. Introduction

This paper develops a positive theory to explain a particular perspective on corporate social responsibility (CSR). That perspective distinguishes between CSR and corporate social performance (CSP), where the latter refers to actions of firms that provide benefits to society and the former refers to actions motivated by moral obligation. CSR is thus the result of moral management, which in the theory is manifested by a voluntary response to an unaddressed externality associated with the operations of a firm. Moral management thus refers to the voluntary fulfillment of an identified duty. In contrast, a strategically-motivated firm responds to the externality only because of profit incentives or social pressure on it. Social pressure could be directed by citizens through public politics and government to firms, but it can also be directed to firms by citizens through private politics initiated by an activist. Citizens can reward firms for their CSP, but they also may distinguish between firms based on whether they are morally-managed or simply responsive to pressure or profit incentives. This distinction matters because a morally-managed firm can be expected to respond to new issues in the absence of social pressure, whereas a firm that acts only when pressured will not act in the absence of that pressure.[1]

CSR should also be distinguished from actions that represent normal business activities are required by law. Actions taken by a strategically-managed firm to maximize its profits or market value represent normal business and will be referred to as shareholder responsibility. These actions could also be welfare maximizing, but they would be taken by a strategic, self-interested firm.[2] Such decisions will not be referred to as socially responsible, even though some citizens may give the firm credit for them. Similarly, actions required by law or regulation may be welfare maximizing but do not represent CSR. Normal business actions and compliance with the law may be viewed as

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[1] This perspective is presented in Baron (2006) and in earlier editions of the book.
[2] If the actions made business sense, every firm would take the socially-efficient response, and there would be nothing to explain.

CSP by some citizens, but it need not be morally motivated nor represent CSR. The theory does not include government but instead focuses on voluntary actions by firms and citizens and private politics initiated by an activist organization.

The impact of moral management and corporate social performance depends on the preferences of citizens who can reward firms for their policies and actions. Citizens are assumed to receive a warm glow from moral management and CSR and may also receive a warm glow from CSP.[3] Citizens also may distinguish between CSP that is morally motivated and CSP that is motivated by social pressure.

In contrast to Baron (2005) this paper introduces competition in which firms differentiate their products through CSR and adds social pressure in the form of activism funded by citizens' contributions. Moral management and CSR that go beyond normal business, or beyond what makes business sense, must be costly, but the cost could be offset to some extent in a number of ways. A firm could benefit in the marketplace if additional customers are attracted or their willingness to pay is greater. Moral management and CSR could also benefit a firm if it directs social pressure away from the firm, or if when the firm is targeted by the activist, the harm the activist attempts to deliver could be mitigated. For example, a boycott could be less effective or reputational damage mitigated because the morally-managed firm has a good reputation with citizens. A firm could also benefit if citizens obtain a warm glow from investing in a morally-managed firm. Unfortunately, little is conclusively known about the costs or benefits of moral management.

The model provides prices or a valuation for moral management and CSP based on both the product and capital markets. The prices of moral management and CSP depend not only on the actions of the firms but also on citizens' actions taking into account the firms' activities. Moral management has a stock market value, but there is a discount. The impact of moral management on society is offset, however, because citizens do less personal giving to social causes. The effect of activism is also mitigated because it crowds out personal actions. This crowding out must be taken into account in any social accounting.

How does product market competition affect the CSP of firms? The answer depends on the market structure, but when CSP provides vertical product differentiation, incentives can be asymmetric. Competition between firms producing identical products where CSR provides product differentiation can strengthen the incentives for CSP for some firms and strengthen the disincentives

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[3] Becker (1974) and Andreoni (1989, 1990) discuss social satisfaction and warm glow preferences.

for other firms. This results when firms have market incentives to maximally differentiate their products. CSP thus may not make business sense for many firms.

## II. The Model

### A. Morally-Motivated Management

The normative framework in the model is utilitarianism, and the normative issue is an externality associated with the production of firms. The externality is not optimally regulated by the government, so there is a government failure leaving a social improvement that can be made. The externality might be global climate change, hazardous waste, or a safety risk associated with a product. A normative framework requires not only identifying a social welfare improvement but also identifying which party has the duty or responsibility to respond to it.

Coase (1960) noted that externalities are reciprocal, so there is more than one way to address an externality. If bargaining is costless, the assignment of duty or responsibility is a distributive issue rather than an efficiency issue. The situation considered here is where there are substantial transactions costs associated with any bargaining over the externality, as in the case of global warming. In that situation, from a utilitarian perspective the duty should be assigned to the party that can most efficiently mitigate it. Calabresi and Melamed (1972) provide a test to determine which party should be assigned the duty, and here that test is assumed to assign the duty to firms. For example, firms may be best-placed to mitigate the externality, and hence the duty should be assigned to them. The morally-managed firm voluntarily accepts the duty, whereas the strategically-motivated firm does so only in response to social pressure. The morally-managed firm is assumed to commit ex ante to moral management by making a public statement about its policy.

The maintained hypothesis is that moral management is not coincident with profit maximization because of the unaddressed externality. That is, the externality is not efficiently regulated by government nor do citizen-consumers reward the firm sufficiently in the market place to offset the cost of addressing the externality. Responding to the externality does not make business sense. Consequently, the socially-efficient response to the externality is assumed to be greater than the profit-maximizing response, which may be zero. If the activist demands more than $x^e$, profit is reduced further.

### B. Players

The players are citizens, firms, and an activist. Citizens make investment and consumption decisions and also may personally give to social causes and contribute to the activist and social

pressure. Citizens differ in their preferences for giving to social causes and the responses to the externality.

The model includes two firms, one of which is morally motivated and the other is strategically motivated. The morally motivated firm responds to the externality ex ante in a socially efficient manner and may also make a voluntary contribution from its profits to social causes. Once the morally-managed firm has met its moral responsibility, it is morally free to maximize its profits. The strategically-motivated firm may also respond ex ante to the externality if doing so increases its market value. If a firm is targeted by the activist, it may respond to the externality ex post as a result of the pressure from the campaign. The firms can build a reputation among citizens by responding to the externality, and that reputation may be stronger if the motivation is moral rather than to reduce the pressure from private politics.

The case of interest is that in which moral management is not cheap, since otherwise firms would effortlessly act morally. That is, the externality is costly to address and the firm is not fully compensated for addressing it. Responding to the externality thus does not make business sense, so a strategic firm would not voluntarily address the externality. A firm, however, may receive both direct and indirect compensation for addressing the externality. The direct compensation can take two forms. First, citizen-consumers may reward the firm in the marketplace. Second, the activist may prefer to target the strategic firm rather than the morally-motivated firm. The indirect compensation is provided by citizen-investors who receive a warm glow from moral management and are willing to pay more for the firm's shares.

The activist campaigns against a target firm to pressure it to respond to the externality. The activist has preferences for the extent to which the externality is addressed, and those preferences are assumed to be extreme in the sense that the activist has distributive preferences that favor citizens over firms. The activist thus prefers a response to the externality stronger than the socially-efficient response. The activist requires funding for its campaign, and the funding available to it comes from voluntary contributions by citizens.

### C. Timing

In stage 1 firms decide whether to respond to the externality. In stage 2 citizens allocate their endowment between savings, shares of the firms, personal giving to social causes, and a contribution to the activist. In stage 3 the activist chooses a target firm and launches a campaign against the target, and the target decides whether to fight the activist's campaign or to bargain with the activist to end the campaign. In stage 4 the firms choose the prices for their products, and

in stage 5 consumers allocate their financial returns to consumption and purchases from the firm. The notation in the model is introduced as each stage of the game is introduced and analyzed. Information is complete and perfect, and a subgame perfect Nash equilibrium is sought.

### III. The Product Market

Initially, consider a single firm that may engage in CSR activities, which can take two forms in the model. First, a morally-managed firm can give a portion $h$ of its operating profit $\pi$ to social causes, and second, it can make a response $x$ to the externality. Citizens' preferences for the firm's product then may depend on the CSR activities, such as the conditions under which the product is made, its responses to global warming, and its redistribution.

To simplify the exposition, citizens as consumers are assumed to view the two aspects of CSR as perfect substitutes, preferences are assumed to be independent of their shareholdings, and each consumer is assumed to have a demand for one unit of the product. Consumers' preferences for CSR are manifested in a higher valuation of the product, so let preferences be indexed by $\psi \in [0, \bar{\psi}]$ and represented by a consumer surplus function $u(\psi)$ of the form

$$u(\psi) = u^o + \psi B - p, \tag{1}$$

where $u^o$ denotes the utility from the product, $B$ is the value consumers receive from the CSR, and $p$ is price. The value $B = B(h\pi + x)$ is due to the altruistic redistribution by the firm plus the response to the externality. A consumer will purchase the product if $u(\psi)$ is nonnegative.

Even though the firm has a policy of giving a portion $h$ of its profits to social causes, the firm still has an incentive to maximize its profits when it goes to the product market. The operating profit of the firm is given by

$$\pi = \int_{\psi^*}^{\bar{\psi}} (p - c) dH(\psi),$$

where $\psi^*$ denotes the consumer who is indifferent between purchasing and not purchasing the product, $c$ is a constant marginal cost of production, and $H(\psi)$ is the distribution function of consumer preferences for CSR and the total number of consumers is normalized to 1. The firm may also incur a fixed cost from responding to the externality as introduced in Section IV, so the profit of the firm is the operating profit less the fixed cost. Given a price $p$, $\psi^*$ is given by

$$\psi^* = \frac{p - u^o}{B}.$$

To facilitate the comparisons, let the distribution function $H$ be uniform, in which case the operating profit of the firm is[4]

$$\pi = \frac{\bar{\psi} - \psi^*}{\bar{\psi}}(p - c).$$

The optimal price $p^*$ is

$$p^* = \frac{1}{2}(u^o + c + \bar{\psi}B),$$

provided that $p^* \geq c$, which requires $u^o \geq c - \bar{\psi}B$.[5] The price is at least as high as $u^o$, which implies that

$$\psi^* = \frac{-u^o + c + \bar{\psi}B}{2B} > 0.$$

The operating profit $\pi^*$ is

$$\pi^* = \frac{(u^o - c + \bar{\psi}B)^2}{4\bar{\psi}B}. \tag{2}$$

An increase in the CSP $B$ results in a higher price, more customers, and higher operating profits.

If the firm did not engage in CSR, it would set its price at $u^o$, and all consumers purchase the product with no consumer surplus. CSR results in a higher price, and some consumers who have a low valuation of CSR are priced out of the market. Those consumers with $\psi \geq \psi^*$ obtain a surplus, and the profit $\pi^o$ would be $\pi^o = u^o - c^o$, where $c^o$ is the constant marginal cost of producing the product when the firm does not engage in CSR. CSR increases operating profits only if

$$c < u^o + \bar{\psi}B - 2(\bar{\psi}B(u^o - c^o)^{\frac{1}{2}}).$$

Responding to the externality increases operating profits only if the increase in the marginal cost is less than the gain from the manifested CSR preferences of the consumers. In addition, the firm can incur fixed costs of moral management. For example, Wal-Mart has pledged to preserve forest land equivalent to the land occupied by each of its stores. Thus, Wal-Mart incurs a fixed cost for each store it opens.

Next, consider competition between a morally-managed firm and a strategic firm that engages in CSP only if doing so increases its market value. The appropriate model of competition in the product markets depends on the products and the market structure. One particular case is considered here. Both firms produce identical products, but their products can be vertically differentiated by their CSR activities. A citizen's utility function $u(\psi, I)$ from (1) then is

$$u(\psi, I) = u^o + I(\psi B_n - p_n) + (1 - I)(\psi B_m - p_m),$$

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[4] Note that the assumption that the distribution function is uniform means that all consumers value the CSR activities of the firm. This assumption may be distant from reality.

[5] This condition also ensures that all citizens with $\psi \geq \psi^*$ purchase the product.

$p_i$ denotes the price of the product of firm $i, i = m, n$, $I \in \{0, 1\}$ is an indicator variable that identifies the choice of the consumer, and $B_i$ is the aggregate glow the consumer receives from buying the product of firm $i$ where $i = m$ denotes the morally-managed firm and $i = n$ denotes the strategic firm. To simplify the analysis, let the parameters be such that $u^o \geq \frac{1}{3}(2c_n + c_m + \bar{\psi}(B_m - B_n))$. This ensures that in equilibrium all consumers purchase from one of the firms.

Since moral management does not make business sense, the strategic firm engages in less CSR, so $B_m > B_n$ and $p_m > p_n$. The consumer indifferent between the two products is denoted by $\psi^*$, which is given by

$$\psi^* = \frac{p_m - p_n}{B_m - B_n}.$$

Consumers with $\psi > (<) \psi^*$ purchase from firm $m$ $(n)$; i.e., the optimal choice $I^*$ is $I^* = 0$ if $\psi \geq \bar{\psi}$ and $I^* = 1$ if $\psi < \bar{\psi}$. Consumers with a high valuation prefer the product of the firm with the greater CSR, and those with a low valuation prefer the product of the other firm.

The profits $\pi_i, i = n, m$, of the two firms are given by

$$\pi_n = \int_0^{\psi^*} (p_n - c_n) dH(\psi)$$

and

$$\pi_m = \int_{\psi^*}^{\bar{\psi}} (p_m - c_m) dH(\psi),$$

where $c_i, i = n, m$, is the marginal cost of the product.

The firms maximize their profits with respect to the price of their product, and to obtain a closed-form characterization of the equilibrium, let $H(\psi)$ be uniform. The equilibrium prices $p_i^*, i = n, m$, are

$$p_n^* = \frac{1}{3}\left[2c_n + c_m + \bar{\psi}(B_m - B_n)\right] \tag{5}$$

$$p_m^* = \frac{1}{3}\left[c_n + 2c_m + 2\bar{\psi}(B_m - B_n)\right], \tag{6}$$

so

$$\psi^* = \frac{1}{3}\left[\bar{\psi} + \frac{c_m - c_n}{B_m - B_n}\right],$$

which is assumed to be positive. Both prices are increasing in $B_m$ and decreasing in $B_n$. The equilibrium number $Q_n^*$ and $Q_m^*$ of customers of the two firms then are

$$Q_n^* = \frac{1}{3}\left(1 + \frac{c_m - c_n}{\bar{\psi}(B_m - B_n)}\right) \tag{7}$$

and

$$Q_m^* = \frac{1}{3}\left(2 - \frac{c_m - c_n}{\bar{\psi}(B_m - B_n)}\right) \tag{8}$$

The profits $\pi_i^*, i = n, m$, of the firms are

$$\pi_n^* = \frac{(c_m - c_n + \bar{\psi}(B_m - B_n))^2}{9\bar{\psi}(B_m - B_n)} \tag{9}$$

and

$$\pi_m^* = \frac{(c_n - c_m + 2\bar{\psi}(B_m - B_n))^2}{9\bar{\psi}(B_m - B_n)}. \tag{10}$$

The difference in the profits is

$$\pi_m^* - \pi_n^* = \frac{1}{3}(2(c_n - c_m) + \bar{\psi}(B_m - B_n)).$$

The profit of the morally-managed firm the smaller if and only if

$$c_m > c_n + \frac{1}{2}\bar{\psi}(B_m - B_n). \tag{11}$$

If the costs are equal, the morally-managed firm has higher operating profits (not taking into account the response to the externality). If $c_m > c_n$, firm $m$ can have lower profits. When the condition in (11) is satisfied, the market share of the morally-managed to firm is less than that of the strategic firm; i.e., $Q_n^* > \frac{1}{2} > Q_m^*$.[6]

The profits in (9) and (10) are convex in their own CSR, and $\pi_m^*$ is strictly increasing in its own CSR and $\pi_n^*$ is strictly decreasing in its own CSR provided that $c_m - c_n$ is not large.[7] Provided that the marginal cost of CSR for the morally-managed firm is not too great, the two firms have incentives to maximally separate on their CSR. That is, $B_n = 0$, and $B_m$ remains at the level to which the morally-motivated firm committed. The difference in the prices then is

$$p_m^* - p_n^* = \frac{1}{3}\left[c_m - c_n + \bar{\psi}B_m\right]$$
$$= p_n^* - c_n \geq 0,$$

so the strategic firm sets a lower price. That is, the CSR firm charges the higher price even if it has lower marginal cost. Consumers thus pay for the CSR.

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[6] To show this, substitute (11) into (7) and (8) and compare the expressions.

[7] The derivative is

$$\frac{d\pi_n^*}{dB_n} = \frac{(c_m - c_n + \bar{\psi}(B_m - B_n))}{9\bar{\psi}(B_m - B_n)^2}\left[c_m - c_n - \bar{\psi}(B_m - B_n)\right],$$

which is negative for $c_m < c_n + \bar{\psi}(B_m - B_n)$.

Consumers, however, given their preferences, are better off from the CSR firm. The consumer surplus $u(\psi) = u(\psi, I^*)$ of a citizen is

$$u(\psi) = \begin{cases} u^o + \psi B_n - \dfrac{1}{3}\Big[2c_n + c_m + \bar{\psi}(B_m - B_n)\Big] & \text{if } \psi < \psi^* \\ u^o + \psi B_m - \dfrac{1}{3}\Big[c_n + 2c_m + 2\bar{\psi}(B_m - B_n)\Big] & \text{if } \psi \geq \psi^*. \end{cases} \tag{12}$$

If there is maximal differentiation so that $B_n = 0$, the surplus of consumers who purchase from the strategic firm is constant in $\psi$, whereas the utility of consumers who purchase from the CSR firm is linear and increasing in $\psi$. The surplus $u(\psi)$ is thus an increasing and continuous function of $\psi$, so consumers with a high preference for CSR have the larger surplus. The surplus of all consumers will be assumed to be negative so that both firms are in the market.

The above characterization has been for two firms that differentiate their CSR activities.[8] If both firms had identical CSR activities, they would compete in price down to the higher of the two marginal costs. For example, if $c_m \geq c_n$, the equilibrium prices are $p_i^* = c_m, i = n, m$. CSR allows the firms to differentiate their products, and the morally-managed firm obtains a price premium for its product. The strategic firm then can raise its price. CSR thus enables both firms to increase their profits.

## IV. Activism and Private Politics

### A. The Activist

The social pressure on the firm is assumed to come not from government but from citizens, and their instrument for applying pressure is an activist organization. The activist confronts a firm with the threat of harm and demands that it respond to the externality. This confrontation represents private politics (Baron 2001, 2003), which is a situation in which private parties compete to affect the behavior of the other.

The activist is assumed to have preferences for mitigating the externality, and those preferences may be extreme in the sense of preferring to mitigate the externality beyond the utilitarian optimum. Extreme preferences may correspond to a desire to punish the firm or to redistribute from the firm's owners to citizens; e.g., to compensate citizens for the firm's failure to respond to the externality in the past. The activist is rational, however, and takes what it can get, which depends on the strength of its threat.

The activist's preferences for the response to the externality are specified as $U_A = x$, where $U_A$ is the utility of the activist and $x$ is the response to the externality. In stage 3 the activist first

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[8] An extension to three firms is presented in Appendix A.

chooses a target and a campaign. A campaign is composed of a target firm, a demand $x^d$ and a threat of harm $\xi(A)$, where $A$ denotes the funds available to the activist to execute the campaign. The harm is assumed to be increasing in $A$ and may be interpreted as a loss due to reputation damage or a loss of profits as a result of the tactics implemented by the activist. The harm, for example, could come from a boycott organized by the activist. The harm is related to the profits derived in the previous section, and will be considered in detail later in this section. The demand is to be interpreted as an additional response to the externality to be taken by the target, so if a firm took ex ante measures $\hat{x}$ and it concedes to the activist's demand, the response to the externality is $\hat{x} + x^d$.

Given the announced campaign, the target can fight, concede, or bargain with the activist. If the target chooses to fight, the campaign proceeds and with probability $q$ it succeeds. Fighting is assumed to cost the firm a fixed amount $y$ and yield a probability $1-q>0$ of defeating the campaign.[9] If the campaign is defeated, the target loses no profits; i.e., the harm does not materialize. If the campaign succeeds, the firm incurs the harm. A successful campaign imposes harm $\mu\xi(A)$ on the target, where $\mu \in [0,1]$ is the impact of the campaign on the target. The parameter $\mu$ could depend on the reputation of the target for CSR or CSP. A lower $\mu$ represents a stronger reputation; i.e., a reputation that is more difficult for the activist to harm. More specifically, $\mu = \mu(\hat{x})$, where $\hat{x}$ is the target's ex ante response to the externality. The function $\mu(\cdot)$ is assumed to be strictly decreasing in $\hat{x}$ with $\mu(0) = 1$. That is, a target with no reputation for CSR or CSP who does not respond ex ante to the externality bears the full brunt of the campaign, whereas a target that addresses the externality ex ante ($\hat{x}>0$) bears less of the brunt, since citizen-consumers have a more favorable view of that target. If the campaign succeeds, the target can either concede to the activist's demand $x^d$ or bear the loss $\mu\xi(A)$ in profits.

Instead of fighting, the target can bargain with the activist over a response to the externality. There is no institution to structure the bargaining, so the process is unspecified. The bargaining outcome thus will be represented by the Nash bargaining solution. That solution maximizes the product of the differences between the utility of the outcome less the autarky utility, which results if there is no bargain for the two bargainers.

When does the activist expend the funds $A$? The assumption here is that $A$ is expended at the time the activist announces the campaign and makes the demand on the firm. The activist

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[9] Baron and Diermeier (2005) present a model in which the probability of winning is endogenous to the expenditure of the activist on the campaign and the target's expenditure to counter the campaign.

must hire personnel to manage the campaign, take out advertisements to announce the campaign, coordinate the delivery of pressure, create an Internet site, and so on. It is the expenditure of $A$ that makes the campaign credible. This means that $A$ is sunk when the firm makes its response to the demand of the activist.[10]

## B. A Single Firm

In this section, only one firm is available as a target. To characterize the equilibrium of the game of activism, consider the target's decision where it has fought the campaign and the campaign was successful; that is, the target fought and the campaign succeeded. The target will agree to the activist's demand if and only if

$$-\tau x^d - \tau \hat{x} - y > -\mu \xi(A) - \tau \hat{x} - y,$$

where $\tau$ is the marginal cost of addressing the externality and $y$ is the cost of fighting. Both the cost of the ex ante response $\hat{x}$ and the cost $y$ of fighting are sunk. The activist prefers that the target concede, since otherwise the externality is not addressed. Hence, the maximum demand $x^d$ the activist can make is given by

$$x^d = \frac{\mu}{\tau} \xi(A). \tag{13}$$

The activist's demand $x^d$ is thus credible.

The target will fight rather than concede to $x^d$ if the expected gain from doing so is greater than the cost of fighting or

$$-q(\tau x^d + \tau \hat{x} + y) - (1 - q)(\tau \hat{x} + y) \geq -\tau x^d - \tau \hat{x}.$$

The cost of fighting thus must satisfy

$$y \leq (1 - q)\tau x^d \tag{14}$$

for the target to be willing to fight.

The activist will launch the campaign if it is willing to have the target fight rather than quit or

$$q(x^d + \hat{x} - A) + (1 - q)(\hat{x} - A) \geq \hat{x},$$

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[10] The alternative assumption is that $A$ is expended only if the target decides to fight the campaign. This leaves the issue of what the activist does with the funds if the firm concedes to the activist's demand or bargains to avoid a campaign.

or

$$A \le qx^d = \frac{\mu\psi(A)}{\tau}.$$ 

(15)

The parameters $q$ and $y$ and the funds $A$ are assumed to satisfy (13), (14), and (15).

Rather than fight or concede, the target could bargain with the activist. The Nash product $\mathcal{N}$ is

$$\mathcal{N} = (-\tau z + q\tau x^d + y)(z - qx^d),$$

where $z$ is the bargain and $A$ and $\hat{x}$ do not appear because they are sunk. The bargain $z^*$ is

$$\begin{aligned} z^* &= qx^d + \frac{1}{2\tau}y \\ &= \frac{q}{\tau}\mu\xi(A) + \frac{1}{2\tau}y. \end{aligned}$$

(16)

The bargain $z^*$ thus equals the expected harm plus half the amount the target saves by bargaining. The bargain depends on the ex ante action of the target only through its reputational effect $\mu$ on the realized harm. The bargain $z^*$ is the outcome of the game of activism.

The target will bargain rather than concede, since given (14)

$$-\tau x^* - \tau z \ge -\tau x^* - q\tau x^d - y$$

is satisfied for all $y$. The activist conducts a campaign if $z \ge A$, which requires

$$\frac{q\mu\xi(A)}{\tau} + \frac{1}{2\tau}y \ge A.$$

For a given $A$, this condition and (14) require

$$(1-q)\mu\xi(A) \ge y \ge 2(\tau A - q\mu\xi(A)).$$

These inequalities are satisfied for some $y$ if

$$\mu\xi(A)(1+q) \ge 2\tau A.$$

The utility $U_A$ of the activist is

$$U_A = z^* - A = \frac{q}{\tau}\mu\xi(A) + \frac{1}{2\tau}y - A.$$

(17)

The scale $A$ of the activist's campaign must be funded by citizens' contributions, so $A$ is determined by the contributions citizens' made when they allocate their initial wealth between shares in the

two firms, personal giving to social causes, and a contribution to the activist. This is considered in Section V.

The effect of the campaign on the target, including the ex ante measure $\hat{x}$, is given by its ex post profit $\hat{\pi}$ given by

$$\hat{\pi}_i = \pi^* - \tau z^* - \tau \hat{x}$$
$$= \pi^* - q\mu\xi(A) - \frac{1}{2}y - \tau\hat{x}, \tag{19}$$

where $\pi^*$ is the operating profit in (2). The morally-motivated target chooses $\hat{x} = x^e$, efficient for society, so $\mu = \mu(x^e)$. The choice by morally-motivated firm is ex ante and a component of its public reputation.

The target has an opportunity for an ex post response $\hat{x}$ to the externality in stage 2 occurs after it has been selected as the target but before a campaign has been launched. In addition the firm could make an ex ante, or proactive, response in stage 1 to maximize the firm's market value, as considered in Section V. If the response is due to being targeted, its public reputation may not be enhanced. For example, the Rainforest Action Network (RAN) first announces its selection of a target by sending a letter to the target firm.[11] The firm then has an opportunity to act before the campaign is executed. The firm may concede, fight, or negotiate. When targeted by RAN, Wells Fargo Bank announced a new set of environmental policies and programs. RAN declared that the bank had not gone nearly far enough and launched its campaign. Wells Fargo refused to concede and fought RAN's campaign.

The strategic firm chooses its reactive response $\hat{x}$ to maximize $\hat{\pi}_i$ in (18) and satisfies the first-order condition

$$\frac{d\pi^*}{d\hat{x}}\left(1 + \frac{dz^*}{d\hat{x}}\right) - q\mu'(\hat{x})\xi(A) - \tau \leq 0, \tag{20}$$

If there is no reputational credit for a reactive response, then $\mu(x) = 1$ for all $x$ in which case the target chooses $\hat{x} = 0$, since $\frac{d\pi^*}{dB} < 0$ from (2).

As indicated in the analysis of (3) for $B(x) = \beta x$, any reactive response $\hat{x}$ must be less than $\bar{x}$ and satisfy

$$\frac{d\pi^*}{d\hat{x}} - \tau = \beta\left(\frac{(u^o - c)^2}{4\bar{\psi}\beta^2 x^2} - \frac{\bar{\psi}}{4}\right) - \tau = 0.$$

Let the reactive response by a strategic firm be denoted by $\hat{x}_n$ and let the proactive response be $x_n^*$, so $B(\hat{x}_n + x^*) = \beta(\hat{x}_n + x_n^*)$ and

$$\hat{x}_n = \frac{u^o - c}{(\beta\bar{\psi}(\bar{\psi}\beta + \tau))^{\frac{1}{2}}} - x_n^*.$$

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[11] See the case "Strategic Activism: The Rainforest Action Network," in Baron (2006).

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For a morally-managed firm that takes proactive measure $x_m^*$, the reactive response is

$$\hat{x}_m = \hat{x}_n - (x_m^* - x_n^*) < \hat{x}_n, \tag{20}$$

where the inequality results because a proactive response of $x_m^*$ does not make business sense; i.e., $x_m^* > x_n^*$. A strategic firm is a more attractive target than a morally-managed firm. If there is a reputational credit for a reactive response, both reactive responses are greater, and if $\mu(x)$ is concave, the result in (20) continues to hold. The product of reputation thus is to mitigate private politics, which provides an incentive for a reactive response to the externality.

### C. Target Selection with Firms in Different Industries

Suppose the activist only has the capacity to conduct a campaign against one firm. The activist thus will target a firm that yields it the greatest reactive response to the externality. Suppose that the two firms above are in different industries so that there is no interaction in the product markets. If there is no reputational credit for a reactive measure, the activist targets the strategic firm because it has a greater reactive response to the campaign. If there is a reputational credit form both proactive and reactive responses to the campaign, the activist still prefers to target the strategic firm rather than the morally-managed firm. If the strategic firm recognizes that a stronger reactive response to the campaign would lead the activist to target the morally-managed firm, the strategic firm could increase its reactive response. A race to the top could then ensue. The strategic interactions among potential targets is considered in the next section in the context of firms in the same industry.

### D. Target Selection with Firms in the Same Industry

If the two firms are in the same industry, their social responsibility policies and actions can differentiate their products as in Section III. The profits of the two firms then depend on not only their own CSR actions but also on the CSR actions of the other firm. The activist's selection of a target thus affects both firms.

Let $x_i^d$ denote the demand that would be made by the activist if it targeted firm $i, i = n, m$. Those demands satisfy conditions analogous to (13). The maximum demands are given by

$$\pi_n(0) - (\pi_n(x_n^d) - \tau x_n^d) \equiv \mu_n \xi(A)$$

and

$$\pi_m(x^*) - \tau x^* - (\pi_m(x^* + x_m^d) - \tau(x^* + x_m^d)) \equiv \mu \xi(A),$$

where the profit functions are given in (9) and (10), the proactive measures of the two firms are $x = 0$ and $x = x^*$, respectively, and $\mu_n$ and $\mu_m$ are the reputation effects, respectively.

As an example, consider the case in which the marginal costs $c_m = c_n$ are equal and $B_i(x) = \beta x$. Then,

$$\pi_n(0) - (\pi_n(x_n^d) - \tau x_n^d) = \frac{\bar{\psi}\beta}{9}x_n^d + \tau x_n^d \tag{21}$$

and

$$\pi_m(x^*) - \tau x^* - (\pi_m(x^* + x_m^d) - \tau(x^* + x_m^d)) = -\frac{4\bar{\psi}}{9}x_m^d + \tau x_m^d. \tag{22}$$

The demands then are

$$x_n^d = \frac{\mu_n \xi(A)}{\tau + \frac{\bar{\psi}}{9}\beta}$$

and

$$x_m^d = \frac{\mu_m \xi(A)}{\tau - \frac{4\bar{\psi}}{9}\beta}.$$

Reflecting the incentives $\bar{\psi}\beta$ for maximal differentiation, the demand on the strategic firm is strictly decreasing in the market incentives for differentiation. Both demands are strictly decreasing in the marginal cost $\tau$ of responding to the externality and strictly increasing in the harm the activist can cause. The demands $x_i^d$ is strictly increasing in $\mu_i$, so a stronger reputation from moral management results in a lower demand.

The activist launches a campaign if a condition analogous to (15) is satisfied. The condition for a campaign against the strategic firm is

$$\frac{q\mu_n\xi(A)}{\tau + \frac{\bar{\psi}\beta}{9}} \geq A,$$

and for the morally-managed firm is

$$\frac{q\mu_m\xi(A)}{\tau - \frac{4\bar{\psi}\beta}{9}} \geq A.$$

These conditions are assumed to be satisfied.

The strategic firm will fight rather than concede immediately if

$$y \leq (1-q)(\pi_n(0) - \pi_n(x_n^d))$$

and for the morally-managed firm if

$$y \leq (1-q)(\pi_m(x^*) - \pi_m(x^* + x_m^d)).$$

These conditions are assumed to be satisfied.

The difference in the demands is

$$x_m^d - x_n^d = \left( \frac{\mu_m(\tau + \frac{\bar{\psi}\beta}{9}) - \mu_n(\tau - \frac{4\bar{\psi}\beta}{9})}{(\tau + \frac{\bar{\psi}\beta}{9})(\tau - \frac{4\bar{\psi}\beta}{9})} \right) \xi(A).$$

The morally-managed firm is not a soft target, since it is willing to fight the activist as is the strategic firm, but the morally-managed firm may be a more attractive target because it has more to lose. If it has a stronger reputation ($\mu_m$ low) among citizen-consumers, however, it may be the less attractive target. The demand made on the morally-managed firm is greater than the demand made on firm 1 if

$$\mu_m \geq \bar{\mu}_m \equiv \frac{\mu_n(\tau - \frac{4\bar{\psi}\beta}{9})}{\tau + \frac{\bar{\psi}\beta}{9}},$$

where the right side is less than 1. The right side is increasing in $\tau$ and has a limit of 1, so the greater the cost of responding to the externality the more attractive a target the strategic firm becomes.

The activist and its target have incentives to bargain rather than fight, so consider first the case in which the activist targets the strategic firm. The Nash product $\mathcal{N}_n$ is

$$\mathcal{N}_n = \left( \pi_n(z_n) - \tau z_n - q(\pi_n(x_n^d) - \tau x_n^d) - (1-q)\pi_n(0) + y \right)\left( z_n - q x_n^d \right),$$

where $z_n$ is the bargain. The necessary condition for the bargaining solution $z_n^*$ is

$$-2\tau z_n^* + y + 2\tau q x_n^d + \pi_n'(z_n^*)(z_n^* - q x_n^d) + q(\pi_n(z_n^*) - \pi_n(x_n(x_n^d))) + (1-q)(\pi_n(z_n^*) - \pi_n(0)) = 0.$$

For the example with equal marginal costs and linear CSR differentiation the Nash bargain is

$$z_n^* = q x_n^d + \frac{y}{2(\tau + \frac{\bar{\psi}\beta}{9})}.$$

Substituting for $x_n^d$ yields

$$z_n^* = \frac{\mu_n q \xi(A)}{\tau + \frac{\bar{\psi}}{9}\beta} + \frac{y}{2(\tau + \frac{\bar{\psi}\beta}{9})}. \tag{23}$$

The bargain is increasing in the harm and the cost $y$ of fighting and strictly decreasing in the strength $\bar{\psi}$ of the market, the consumers' valuation $\beta$ of CSR, and the marginal cost of fighting the activist campaign.

In a similar manner, the Nash bargain $z_m^*$ when the activist targets the morally-managed firm is

$$z_m^* = q x_m^d + \frac{y}{2(\tau - \frac{4\bar{\psi}\beta}{9})}$$

$$= \frac{q \mu_m \xi(A)}{\tau - \frac{4\bar{\psi}}{9}\beta} + \frac{y}{2(\tau - \frac{4\bar{\psi}\beta}{9})}. \tag{24}$$

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For a given budget $A$ the activist prefers to target the firm that will agree to the most favorable bargain. The difference in the Nash bargaining outcomes is

$$z_m^* - z_n^* = \frac{q\xi(A)((\mu_m - \mu_n)\tau + \frac{\bar{\psi}}{9}\beta(\mu_m + 4\mu_n)) + \frac{5}{18}\bar{\psi}\beta y}{(\tau + \frac{\bar{\psi}}{9}\beta)(\tau - \frac{4\bar{\psi}}{9}\beta)}.$$

The activist targets the morally-managed firm rather than the strategic firm if and only if

$$\mu_m \geq \hat{\mu}_m \equiv \frac{\mu_n(\tau - \frac{4\bar{\psi}}{9}\beta)}{\tau + \frac{\bar{\psi}}{9}\beta} - \frac{\frac{5}{18}\bar{\psi}\beta y}{q\xi(A)(\tau + \frac{\bar{\psi}}{9}\beta)}.$$

The cutpoint $\hat{\mu}_m$ is strictly increasing in $\mu_n$, $\tau$ and $\beta$ and strictly decreasing in $q$ and $\xi(A)$. If the reputation advantage of a policy of moral management is small so that $\mu_m$ is high, the activist prefers to target the morally-managed firm. If the reputation effect is large, the activist prefers to target the strategic firm. The morally-managed firm is thus selected as the target unless citizens accord it a strong reputation that mitigates an activist campaign.

When the reputation accorded to the morally-managed firm by citizen-consumers is weak, that firm is an attractive target because it has more to lose and will bear a large portion of the harm if it does not bargain to a resolution of the campaign. A strong reputation shifts the activist toward the strategic firm.

Next consider reactive responses by the firms after each have been selected as the target. The analysis is similar to that for a single firm, with the exception that the profit effects of a reactive response are different. From (9) the profit of the strategic firm is decreasing in $B_n$, since product differentiation is reduced. A reactive response by the strategic firm decreases profits, so the only incentive for a reactive response is the reduction in the harm from the reputation effect. If a reactive response has no reputational effect, the strategic firm does not make a reactive response. To illustrate this, consider the example in which the firms have the same marginal costs and the market effect of CSP is linear. The strategic firm maximizes $\pi_n^* - \tau(\hat{x}^n + z_n^*)$, and the first-order condition is

$$\left(-\frac{\bar{\psi}}{9} - \tau\right)\left(1 + \frac{dz_n^*}{d\hat{x}_n}\right) \leq 0. \tag{25}$$

The left side is negative unless increasing $\hat{x}_n$ decreases the sum $\hat{x}_n + z_n^*$, which seems unlikely. If consumers do not reward the firm in the marketplace for a reactive measure or for a bargain struck with the activist, the operating profit in (9) is unaffected. The first-order condition yields the same conclusion. If the morally-managed firm is targeted, its profits increase from greater product differentiation. This profit effect can provide an incentive for a reactive response. The first-order

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condition corresponding to (25) is

$$\left(\frac{4\bar{\psi}}{9} - \tau\right)\left(1 + \frac{dz_m^*}{d\hat{x}_m}\right) \le 0.$$

Depending on the parameters, the left side could be positive, implying an unbounded response if $1 + \frac{dz_n^*}{dx_n} > 0$. The marginal cost of the firm would likely increase limiting the reactive response. Again, if consumers do not reward the firm for a reactive response or for the bargain with the activist, the morally managed firm does not make a reactive response unless the reputation effect is large. But if consumers do not reward the firm in the marketplace, they may give the firm no reputational credit.

The targeting choice by the activist affects not only the target but the other firm as well if consumers reward the firm in the marketplace for reactive responses. In that case targeting the morally-managed firm increases the profit of the strategic firm because product differentiation increases. Targeting the strategic firm decreases the profit of the morally-managed firm because product differentiation decreases.

Responding to the externality may affect the marginal cost $c_i$ of production. Suppose that the marginal costs $c_i(x_i)$ are increasing functions of the response $x_i$, where $c_i(0) = c, i = n, m$. The loss in profits from the activist's campaign against the morally-managed firm is

$$\pi_m(x^*) - \tau x^* - (\pi_m(x^* + z_m^*) - \tau(x^* + z_m^*)) = \frac{\beta(x^* + z_m^*)(c - c_m(x^*))^2 - \beta x^*(c - c_m(x^* + z_m^*))^2}{9\bar{\psi}\beta^2 x^*(x^* + x_d)}$$
$$+ \frac{4}{9}(c_m(x^* + z_m^*) - c_m(x^*)) - \frac{4\bar{\psi}\beta z_m^*}{9} + \tau z_m.$$

Note that for $c_m(x) = c$ for all $x \ge 0$, this reduces to (22). For $c_m(x) > c$ the bargain $z_m$ is greater than in (24), making the morally-managed firm a more attractive target for the activist. If that firm is targeted, its profits suffer more than when it does not have a cost disadvantage. Note that this is true even if the additional response $z_m$ does not affect marginal costs.

## V. Citizens' Allocation

In the final stage a citizen receives her financial return $r$ and allocates it between a composite numeraire good $\kappa$, one unit of the product produced by one of the two firms which has a price $p_i^*$. Consumption $\kappa$ of the composite good then is

$$\kappa = r - p_i^*. \tag{26}$$

All consumers purchase the product, and the utility from the purchase is given in (12).[12]

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[12] Note that the price $p_i^*$ can be viewed as citizens having different initial wealths. This does not affect the results below.

In the first stage a citizen allocates her wealth $w$ between savings which has a return of 1, a share $\eta_m$ of the morally managed firm, a share $\eta_n$ of the strategic firm, personal giving $g$, and a contribution $a$ to the activist. The citizen's budget constraint is

$$\eta_n \rho_n + \eta_m \rho_m + g + a \leq w,$$

where $\rho_m$ is the share price of the morally-managed firm, $\rho_n$ is the share of the strategic firm, and savings is the difference between $w$ and the expenditures on the shares. The financial return is

$$r = \eta_n \pi_n + \eta_m \pi_m (1 - h) - g - a + w - \eta_n \rho_n - \eta_m \rho_m.$$

Citizens are assumed to have a warm glow from personal giving to social causes, from holding a share in the morally-managed firm, and from contributing to the activist. The morally-managed firm takes $x^*$ in response to its moral obligation. Initially, citizens will be assumed not to have a warm glow from the actions of the strategic firm, since its actions are motivated solely by the pressure from the activist. Citizens differ in their valuation of the warm glow, let $\theta \in [0, 1]$ be the warm glow the citizen receives from its shareholdings in the morally-managed firm and from contributing to the activist relative to the warm glow from personal giving. The glow from contributing $a$ to the activist is $\frac{a}{A^*} \beta z$, where $z$ is the settlement with the activist's target. The warm glow or social satisfaction $S$ is

$$S = g + \theta \left[ \eta_m (h \pi_m + x^*) + \frac{a}{A^*} \beta z \right].$$

Note that in this specification the citizen is assumed to view corporate social responsibility and the accomplishments of the activist as imperfect substitutes for personal giving. To simplify the analysis, an individual citizen is assumed to be small with respect to the profit of the firm.

The preferences of a citizen are represented by a quasi-linear utility function

$$u = \kappa + u(I^*) + \gamma S^{\alpha},$$

where $u(I^*)$ is the utility from the product, $\alpha \in (0, 1)$, and $\gamma > 0$. Substituting $\kappa$ and $r$ yields

$$u = \eta_n (\pi_n - \rho_n) + \eta_m (\pi_m (1 - h) - \rho_m) + w - p_i^* - g - a + u(I^*) + \gamma S^{\alpha}. \tag{27}$$

A citizen chooses $(a, g, \eta_n, \eta_m)$ to maximize $u$ in (27). The equilibrium is characterized by cutpoints and a dominance condition.

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The necessary conditions for an equilibrium $(a^*, g^*, \eta_n^*, \eta_m^*)$ are

$$\frac{\partial u}{\partial a} = -1 + \gamma \alpha S^{\alpha-1} \frac{\beta z}{A^*} \theta \leq 0; \qquad \frac{\partial u}{\partial a} a^* = 0. \tag{28}$$

$$\frac{\partial u}{\partial g} = -1 + \gamma \alpha S^{\alpha-1}; \qquad \frac{\partial u}{\partial g} g^* = 0. \tag{29}$$

$$\frac{\partial u}{\partial \eta_m} = \pi_s(1-h) - \tau x^* - \rho_m^* + \gamma \alpha S^{\alpha-1}(h\pi_m + x^*)\theta \leq 0; \qquad \frac{\partial u}{\partial \eta_m} \eta_m^* = 0. \tag{30}$$

$$\frac{\partial u}{\partial \eta_n} = \pi_n - \rho_n^* \leq 0; \qquad \frac{\partial u}{\partial \eta_n} \eta_n^* = 0, \tag{31}$$

where $\rho_m^*$ and $\rho_n^*$ are the equilibrium market values of the firms.

Investing in the strategic firm is equivalent to savings, so the equilibrium price $\rho_n^* = \pi_n$. To further characterize the equilibrium, suppose the equilibrium has a citizen $\theta^*$ who is indifferent between personal giving and holding shares in the morally-managed firm. Then, for $\theta^*$ (29) and (30) hold as equalities, so substituting (29) into (30) provides an expression for the market value $\rho_m^*$, which is

$$\rho_m^* = \pi_m(1-h) - \tau x^* + \theta^*(\pi_m h + x^*). \tag{32}$$

The market value equals the financial return $\pi_m(1-h) - \tau x^*$ plus the market's valuation of the CSR of the firm. As indicated below, the warm glow from corporate giving is a substitute for the warm glow from personal giving, and as such it is priced in the capital markets. The cost of giving $h\pi$ to social causes is offset by the value $\theta^* h\pi$ ascribed by citizens to the their social satisfaction from corporate giving. The cost of corporate giving thus is $(1 - \theta^*)h\pi$.

As indicated above, responding to the externality is morally required and is assumed to be costly in the sense that[13] [14]

$$\frac{d\rho_m^*}{dx_m} \Big|_{x^*=x^e} = \left[ \frac{d\pi_m}{dx^*}(1 - h(1-\theta^*)) - \tau + \theta^* \right] \Big|_{x^*=x^e} < 0.$$

Since $\frac{d\pi_m}{dx^*} > 0$ from (10), a necessary condition for moral management not to make business sense is $\tau > \theta^*$. This condition is satisfied for $\tau$ satisfying

$$\tau > \left[ \frac{d\pi_m}{dx^*}(1 - h(1-\theta^*)) + \theta^* \right] \Big|_{x^*=x^e}. \tag{33}$$

The condition in (23) means that the morally managed firm does not respond more to the externality than is morally required.

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[13] If the derivative in (33) is negative at $x^* = 0$, the firm would not respond to the externality if it were not morally required.

[14] The firm is assumed to be small relative to the economy, so $\theta^*$ is constant in $x^*$.

If citizens all have preference parameters $\theta = 1$, then $\theta^* = 1$ and corporate giving $h\pi_m$ is costless; i.e., it has no effect on the market value of the firm. This result is due to Graff Zivin and Small (2005), who refer to it as a Modigliani-Miller result in the sense that any increase in corporate giving is exactly offset by a reduction in aggregate personal giving by citizens. Corporate giving thus crowds out personal giving. When $\theta^* < 1$, moral management is not neutral with respect to the market value.

To show that there is an interval $[0, \hat{\theta})$ such that $g^*(\theta) > 0$ and $a^*(\theta) = 0$, suppose that $a^*(\theta) > 0$ on $[0, \hat{\theta})$. From (29), $1 \leq \gamma\alpha S^{\alpha-1}$, so (28) is

$$\frac{\partial u}{\partial a} = -1 + \gamma\alpha S^{\alpha-1}\frac{\beta z}{A^*}\theta$$
$$\leq -1 + \frac{\beta z}{A^*}\theta.$$

Consequently, for $\theta \leq \hat{\theta} \equiv \frac{A^*}{\beta z}$, $a^*(\theta)$ must be zero, contradicting the hypothesis.

Furthermore, it is not possible that $g^*(\theta) > 0$ and $a^*(\theta) > 0$ on any nonempty interval. To show this, assume that it is true. Then, (29) implies that $S$ is a constant, and substituting (29) into (28) yields

$$\frac{\partial u}{\partial a} = -1 + \frac{\beta z}{A^*}\theta = 0,$$

which cannot be satisfied on any nonempty interval. Thus, $g^*(\theta) > 0$ for low $\theta$, where $g^*(\theta)$ satisfies

$$-1 + \gamma\alpha S^{\alpha-1} = 0.$$

This implies that $S$ must be constant, which from (30) implies that $\eta_m^*(\theta) = 0$. Thus, there exists an interval $[0, \theta^*)$ on which the citizen gives personally, does not contribute to the activist, and holds no shares in the morally-managed firm. The equilibrium personal giving $g^*$ is

$$g^* = (\gamma\alpha)^{\frac{1}{1-\alpha}}. \tag{33a}$$

First, is it possible that a citizen $\theta > \theta^*$ both gives personally and holds shares in the morally-managed firm? Substituting from (29) into (30) yields an expression that is linear in $\theta$, so the first-order condition cannot hold on any nonempty interval, so $g^*(\theta)\eta_m^*(\theta) = 0$. Second, is it possible that a citizen $\theta > \theta^*$ both contributes to the activist and holds shares of the morally-managed firm? As the following analysis shows, a citizen with $\theta > \theta^*$ will not hold both shares in the morally-managed firm and contribute to the activist only in a non-generic environment.

A citizen of type $\theta > \theta^*$ who invests \$1 in the morally-managed firm obtains a financial return $\frac{\pi_m(1-h)-\tau x^*}{\rho_m^*}$ and a social return $\frac{(\pi_m h + x^*)\theta}{\rho_s^*}$. The citizen can obtain the same social return by contributing $\phi_A = \frac{\frac{(\pi_m h + x^*)\theta}{\rho_m^*}}{\frac{\beta z \theta}{A^*}}$ to the activist and the same financial return by investing $\phi_n = \frac{\frac{\pi_m(1-h)-\tau x^*}{\rho_m^*}}{1}$ in the strategic firm, which yields a return of \$1. The elimination of arbitrage opportunities implies that

$$
\begin{aligned}
1 &= \phi_A + \phi_N \\
&= \frac{\frac{(\pi_m h + x^*)\theta}{\rho_m^*}}{\frac{\beta z \theta}{A^*}} + \frac{\frac{\pi_m(1-h)-\tau x^*}{\rho_m^*}}{1}.
\end{aligned}
$$

This condition is satisfied if and only if

$$
1 = \frac{\beta z \theta^*}{A^*},
$$

but this condition is non-generic even though $A^*$ is endogenous. Consequently, no citizen with $\theta > \theta^*$ both holds shares in the morally-managed firm and contributes to the activist.

There remain four possibilities for an equilibrium. In one no citizen contributes to the activist, and all citizens with $\theta > \theta^*$ hold shares in the morally-managed firm. In another no citizen holds shares in the morally-managed firm, and all citizens with $\theta > \theta^o$ contribute to the activist. The focus here is on equilibria in which both the morally-managed firm, and the activist are supported in an equilibrium. A third possibility has citizens with $\theta \in [\theta^*, \hat{\theta})$ holding shares in the morally-managed firm and not contributing to the activist and citizens with $\theta \in [\hat{\theta}, 1]$ contributing to the activist and not holding shares in the morally-managed firm. The fourth possibility has citizens with $\theta \in [\theta^o, \hat{\theta}]$ contributing to the activist and not holding shares in the morally-managed firm and citizens with $\theta \in [\hat{\theta}, 1)$ holding shares in the morally-managed firm and not contributing to the activist.

To characterize the latter two possibilities, closed form characterizations will first be specified. A citizen who supports the activist has (28) as an equality with $\eta_m^* = 0$, which yields the contribution $a^*(\theta)$ given by

$$
a^*(\theta) = (\gamma \alpha)^{\frac{1}{1-\alpha}} \left( \frac{\beta z}{A^*} \right)^{\frac{\alpha}{1-\alpha}} \theta^{\frac{\alpha}{1-\alpha}}. \tag{34}
$$

Similarly, a citizen who holds shares $\eta_m^*(\theta)$ in the morally-managed firm and does not contribute to the activist satisfies (30) as an equality which yields

$$
\eta_m^*(\theta) = \left( \frac{\alpha \gamma}{\theta^+} \right)^{\frac{1}{1-\alpha}} (h \pi_m + x^*)^{-1} \theta^{\frac{\alpha}{1-\alpha}}, \tag{35}
$$

where $\theta^+$ is a cutpoint specified below.

Consider first a candidate for an equilibrium with $\eta_m^*(\theta) > 0, \theta \in [\theta^*, \hat{\theta})$, where $\hat{\theta} > \theta^*$ denotes the citizen who is indifferent between holding shares in the morally-managed firm and the contributing to the activist. The conditions in (28) and (30) both hold as equalities at $\hat{\theta}$, which yields

$$\hat{\theta} = \frac{A^*}{\beta x}. \tag{36}$$

The characterization of the equilibrium is then completed by the market clearing conditions

$$\int_{\theta^*}^{\hat{\theta}} \eta_m^*(\theta) dF(\theta) = 1 \tag{37}$$

and

$$\int_{\hat{\theta}}^{1} a^*(\theta) dF(\theta) = A^*. \tag{38}$$

The conditions in (36), (37), and (38) determine $(\theta^*, \hat{\theta}, A^*)$. The expression in (37) is

$$\left(\frac{\alpha \gamma}{\theta^+}\right)^{\frac{1}{1-\alpha}} (h\pi_m + x^*)^{-1} \int_{\theta^*}^{\hat{\theta}} \theta^{\frac{\alpha}{1-\alpha}} dF(\theta) = 1.$$

The condition in (38) is

$$(\gamma \alpha)^{\frac{1}{1-\alpha}} \left(\frac{\beta z}{A^*}\right)^{\frac{\alpha}{1-\alpha}} \int_{\hat{\theta}}^{1} \theta^{\frac{\alpha}{1-\alpha}} dF(\theta) = A^*.$$

Next, consider a candidate for an equilibrium in which citizens with $\theta \in [\theta^+, \theta^o)$ contribute to the activist and citizens with $\theta \in [\theta^o, 1]$ hold shares in the morally-managed firm. The citizen indifferent between personal giving and contributing to the activist has (28) and (29) holding as equalities, which implies

$$\theta^+ = \frac{A^*}{\beta z}. \tag{39}$$

Then, the citizen $\theta^o$ who is indifferent between holding shares in the morally-managed firm and contributing to the activist is given by (28) and (30) as equalities, which yields an expression for the market value $\rho_m^*$ given by

$$\rho_m^* = \pi_m (1-h) - \tau x^* + \theta^o (h\pi_m + x^*) = 0. \tag{40}$$

The market clearing conditions are

$$\int_{\theta^o}^{1} \eta_m^*(\theta) dF(\theta) = 1 \tag{41}$$

and

$$\int_{\theta^+}^{\theta^o} a^*(\theta) dF(\theta) = A^*. \tag{42}$$

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The conditions in (39), (40), and (41) yield $(\theta^o, \theta^+, A^*)$.

Which is the equilibrium depends on the parameters of the model. If the return $\beta z$ to activism is low, the equilibrium should be that citizens with $\theta \in [\theta^*, \hat{\theta})$ hold shares in the morally-managed firm, and citizens with $\theta \in [\hat{\theta}, 1]$ contributing to the activist. If the return $\beta z$ is high, the equilibrium is likely to be citizens $\theta \in [\theta^o, 1)$ hold shares in the morally-managed firm and citizens with $\theta \in [\theta^+, \theta^o)$ contribute to the activist. Activism and moral management thus both can be present in an equilibrium. This also implies that the amounts of activism and investment in the morally-managed firm are interdependent.

## B. Credit for Proactive Activist-Induced CSP

The strategic firm that anticipates a campaign by the activist may have an incentive to make a proactive ex ante response to the externality. This could have an effect in the marketplace and in the capital markets, and it could contribute to a favorable reputation that mitigates the harm the activist delivers in the campaign. Citizens, however, may distinguish between an activist-induced response to the externality and a morally-motivated response, so it will be assumed that in the marketplace the morally-motivated firm receives more credit and attracts consumers with high $\psi$.

Consider an equilibrium in which citizens with $\theta \in [\theta^*, \hat{\theta})$ hold shares in the morally-managed firm and citizens with $\theta \in [\hat{\theta}, 1]$ contribute to the activist.[15] Suppose that citizens receive a warm glow from some portion $\zeta \in [0, 1]$ of the activist-induced response $x_n^+$ to the externality, where $x_n^+$ denotes the firm's total response to the activist including being the target. If citizens do not distinguish between CSP and CSR, $\zeta = 1$, and if citizens reward on CSP, $\zeta = 0$. The social satisfaction is

$$S = g + (\eta_m (h\pi_m^* + x^*) + \eta_n \zeta x_n^+ + \frac{a}{A^*} \beta z)\theta + g.$$

The first-order condition corresponding to (31) for a citizen who holds shares of the strategic firm is

$$\frac{\partial u}{\partial \eta_n} = \pi_n^* - \tau x_n^+ - \rho_n^* + \gamma \alpha S^{\alpha-1} \theta \zeta x_n \leq 0. \tag{43}$$

The shares of the strategic and morally-motivated firm are not perfect substitutes, so consider a portfolio of savings and shares in the strategic firm. Investing $\phi^o$ in the strategic firm yields the same social return as investing \$1 in the morally-managed firm if

$$\phi^o = \frac{\frac{\theta(\pi_m^* h + x^*)}{\rho_m^*}}{\frac{\theta \zeta x_n^+}{\rho_n^*}}.$$

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[15] An analogous analysis can be presented for an equilibrium in which citizens with $\theta \in [\theta^o, 1]$ hold shares in the firms.

The financial return from $\phi^o$ is

$$\phi^o \frac{\pi_n^* - \tau x_n^*}{\phi_n^*} = \frac{\pi_n^* - \tau x_n^+}{\phi_m^*} \frac{\pi_m^* h + x^*}{\zeta x_n^+}. \tag{44}$$

Let $\Delta$ be the difference in financial returns between the morally-managed firm and that in (44), so

$$\Delta = \frac{\pi_m^*(1-h) - \tau x^*}{\phi_m^*} - \frac{\pi_n^* - \tau x_n}{\phi_m^*} \frac{\pi_m h + x^*}{\zeta x_n^+}. \tag{45}$$

The absence of arbitrage opportunities implies that $\Delta + \phi^o = 1$, which implies that

$$\rho_n^* = \pi_n - (\tau - \theta^* \zeta) x_n^+.$$

As in the case of the morally-motivate firm, the responses to the externality do not make business sense, since $\tau > \theta^* \zeta$ from (33).

Because of this arbitrage condition the share demands of the two firms cannot be separately identified. The share demands, however, can be shown to satisfy

$$\eta_n^*(\theta)(\pi_n^* - \tau x^*) + \eta_m^*(\theta)(\pi_m^*(1-h) - \tau x^*) = \left(\frac{\gamma \alpha}{\theta^*}\right)^{\frac{1}{1-\alpha}} \theta^{\frac{\alpha}{1-\alpha}}.$$

The market clearing condition is

$$\int_{\theta^*}^{\hat{\theta}} \left(\eta_n^*(\theta)(\pi_n^* - \tau x^*) + \eta_m^*(\theta)(\pi_m^*(1-h) - \tau x^*)\right) dF(\theta) = \left(\frac{\gamma \alpha}{\theta^*}\right)^{\frac{1}{1-\alpha}} \int_{\theta+}^{\hat{\theta}} \theta^{\frac{\alpha}{1-\alpha}} dF(\theta),$$

which is

$$\eta_n^*(\theta)(\pi_n^* - \tau x^*) + \eta_m^*(\theta)(\pi_m^*(1-h) - \tau x^*) = \left(\frac{\gamma \alpha}{\theta^*}\right)^{\frac{1}{1-\alpha}} \int_{\theta+}^{\hat{\theta}} \theta^{\frac{\alpha}{1-\alpha}} dF(\theta).$$

### C. Proactive Measures by the Strategic Firm

The market value of the strategic firm is a function of its ex ante or proactive response $x_n$ to the externality. The market value of the strategic firm when it is the target, i.e., $x_n^+ = x_n + z_n^*$ is

$$\rho_n^* = \pi_n^* - \tau(x_n + z_n*) + \theta^* \zeta(x_n + z_n^*),$$

where $\pi_n^*$ and $z_n^*$ depend on $x_n$. The strategic firm chooses $x_n$ to maximize its market value. The necessary condition is

$$\frac{d\rho_n^*}{dx_n} = \frac{d\pi_n^*}{dx_n} - (\tau - \zeta \theta^*)\left(1 + \frac{dz_n^*}{dx_n}\right) \leq 0, \tag{46}$$

25

where the firm is assumed to be small relative to the market in which case $\theta^*$ is independent of $x_n$. For the case in which $x_n$ does not affect the marginal cost $c_n$ of production, the first term is from (9)

$$
\begin{aligned}
\frac{d\pi_n^*}{dx_n} &= \frac{B_n'(x_n)(c_m - c_n + \bar{\psi}B_n(x_n))}{9\bar{\psi}(B_m - B_n(x_n))^2}[-\bar{\psi}(B_m - B_n(x_n)) + c_m - c_n] \\
&= B_n'(x_n)\Big(\frac{(c_m - c_n)^2}{9\bar{\psi}(B_m - B_n(x_n))^2} - \frac{\bar{\psi}}{9}\Big).
\end{aligned}
\tag{47}
$$

As considered in Section III, the term in (47) is probably negative, and if $c_n$ is increasing in $x_n$, it is more likely to be negative. A proactive response thus decreases the operating profit of the firm. This results because the proactive response decreases product differentiation. The condition in (47) will be assumed to be negative.

The second term on the right side in (46) depends on the reputational credit earned by a proactive measure when that measure is undertaken by the strategic firm in anticipation of targeting by the activist.[16] If there is no reputational credit, then $\frac{dz_n^*}{dx_n} = 0$. Since $\tau > \zeta\theta^*$ from (33), the market value is a decreasing function of $x_n$, so the strategic firm takes no proactive measure. In this model, a reputational credit is a necessary condition for the strategic firm to take a proactive measure.

If there is a reputational credit, that credit can be represented by $\mu_n(x_n)\xi(A^*)$, where $\mu_n(x_n)$ is a strictly decreasing, differentiable function. The effect of the proactive measure on the bargain $z_n$ with the activist is from (23)

$$
\frac{dz_n}{dx_n} = \frac{\xi(A^*)\mu_n'(x_n)}{\tau - \frac{4\bar{\psi}\beta}{9}},
$$

which is negative reflecting the reduction in the harm the activist can impose on the firm. The reputational credit for a proactive measure is thus decreased because the bargain with the activist involves a smaller response to the externality.

The reputational credit can justify an ex ante response to the externality only if

$$
\frac{dz_n}{dx_n} < -1.
$$

This condition means that the bargain struck with the activist must decrease by more than the increase in the proactive measure. This is unlikely.

If for some reason the effect on the bargain satisfies $\frac{dz_n}{dx_n} < -1$, a proactive measure by the strategic firm increases its market value. Then, if $\rho_n^*$ is strictly concave and if a proactive response

---

[16] Recall that the only effect of a proactive measure is through the effect on the harm that the activist can impose on the firm.

will be taken by the strategic firm, that measure is decreasing in $\zeta$. Greater social credit from citizens means the strategic firm can get by with less.

The effect $\frac{d\pi_n}{dx_n}$ on the operating profit of the firm has been taken to be negative in accord with the duopoly model in Section III. If, however, the industry has three firms, one of which is morally managed, one of the other two firms could have an incentive to respond proactively to differentiate its product from the product of the other firm. In this case, $\frac{d\pi_n}{dx_n}$ could be positive, making a proactive response more attractive to the strategic firm. In that case, (46) can be satisfied as an equality with $\frac{dz_n}{dx_n} > -1$, in which case the proactive measure is an increasing function of the reputational credit $\zeta$ given by citizens for the proactive measures of a firm.

## VI. Social Accounting

Few firms account for their CSP activities, with most treating CSR like advertising. Private accounting of CSR would take into account the full cost borne by the firm in addition to the benefits associated with those activities. A full private accounting, however, is not sufficient. The benefits from CSP presumably accrue to citizens, and those benefits affect their equilibrium behavior. In the theory of public goods, government provided public services can crowd out private actions (Andreoni (1988)). Similarly, the warm glow citizens have from moral management and CSP can crowd out the personal giving to social causes. This crowding out effect should be taken into account in any social evaluation of CSR and moral management

To illustrate this crowding out, consider the aggregate personal giving. Each individual $\theta \in [0, \theta^*)$ contributes the same $g^*$ given in (33a), so aggregate personal giving $G^*$ is $G^* = \theta^* g^*$. Consider the effect of corporate giving on aggregate personal giving. Individual personal giving $g^*$ is independent of $h$, and the effect on $\theta^*$ is given by totally differentiating (35) to obtain

$$\frac{d\theta^*}{dh} = -\frac{\int_{\theta^*}^{\hat{\theta}} \frac{\partial \eta_m^*(\theta)}{\partial h} d\theta}{-\eta_m^*(\theta^*) + \int_{\theta^*}^{\hat{\theta}} \frac{\partial \eta_m^*}{\partial \theta^*} d\theta} < 0,$$

since $\eta_m^*(\theta)$ is decreasing in $h$ and $\theta^*$ and the firm is small so that $\hat{\theta}$ is constant in $h$ and $\theta^*$. Moral management also crowds out personal giving, since $\eta_m^*(\theta)$ is decreasing in $x^*$. Corporate social performance and moral management thus also decrease aggregate personal giving.

Corporate social performance crowds out personal giving. This, however, does not necessarily mean that aggregate utility in the economy decreases.

## VII. Conclusions

## Appendix A

An alternative assumption is that there are three firms, one of which exercises social responsibility and the other two do not. The latter two will drive the price of their products to marginal cost, which will be assumed to be $c_n$. The morally-motivated firm then sets a price such that consumers with $\psi \geq \psi^*$ will not switch to the other products. The optimal price $p_m^*$ is

$$p_m^* = \frac{1}{2}\left[c_m + c_n + \bar{\psi}B_m\right],$$

and

$$\psi^* = \frac{c_m - c_n + \bar{\psi}B_m}{2B_m},$$

The profit $\pi_m^*$ is

$$\pi_m^* = \frac{(\bar{\psi}B_m + c_n - c_m)^2}{4\bar{\psi}B_m},$$

which is strictly convex in $B_m$. The optimal response to the externality satisfies

$$B_m'(b_m)[\bar{\psi}B_m - c_n + c_m(b_m)] - 2c_m'(b_m)B_m(b_m) = 0.$$

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