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Corporate Social Responsibility and Imperfect Regulatory Oversight: Theory and Evidence from Greenhouse Gas Emissions Disclosures

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ABSTRACT

This paper develops and tests a model in which 1) purpose-driven firms emerge as an optimal organizational form even for profit-maximizing entrepreneurs; and 2) CSR arises endogenously as a response to imperfect regulatory oversight. Purpose-driven organizations allow entrepreneurs to create rents for socially responsible (e.g. environmentally concerned) workers by allowing them to reduce the negative externalities (e.g. pollution) that would be generated without them, and to extract these rents through lower wages. Through this rent extraction entrepreneurs internalize the pro-social preferences of their responsible workers, and in turn engage in CSR through self-regulation, provided that regulatory oversight is poor enough - and hence regulation is loose enough- to make self-regulation worthwhile. The key prediction of the model is a negative impact of regulatory oversight on CSR activity. To test this, we exploit the UK's 2012 decision to mandate greenhouse gas emissions disclosure in all public firms. Consistent with our theory, we find that firms in the UK receive lower CSR ratings after increased regulatory oversight compared to firms from the other 15 European countries which did not experience mandatory disclosure requirements. We also perform a number of robustness checks and explore the interaction between oversight, wages and CSR. These empirical findings provide further support for the model.

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1 Introduction

September 2020 marked the 50th anniversary of Milton Friedman's (1970) famous *New York Times Magazine* article, which summarized and expanded on his earlier argument that "there is one and only one social responsibility of business - to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game"(Friedman 1963, p.133); a controversial argument that is still the subject of much debate today.[1] In his view, it is the regulator's job to ensure the appropriate behavior of profit-maximizing firms by setting proper rules and regulations, rather than firms' responsibility to determine and implement their notion of socially responsible behavior. Implicit in this argument is the assumption that the government or regulatory body is able to ensure appropriate behavior by firms. But what happens if the regulator is unable to monitor firm behavior effectively? Would a self-interested, profit-maximizing entrepreneur ever find it optimal to engage in corporate social responsibility (CSR) when oversight were imperfect? More generally, how is the quality of oversight connected to the presence of CSR? These questions are the central focus of this paper.

To study these questions, we develop and test a simple model in which a self-interested entrepreneur, a socially responsible worker and a regulator interact. The entrepreneur operates a technology that unavoidably imposes negative externalities—for example, pollution—on the rest of society, but can select an action that affects the degree of pollution that occurs. The regulator may choose to monitor the firm and set a regulatory ceiling that balances the firm's profits against the social costs of these negative externalities; or may forfeit oversight altogether if the benefits from regulation are more than offset by the monitoring costs.

The entrepreneur has two main decisions to make. First, she decides whether to ignore the environmental consequences of her actions and manage her firm herself as a *pure profit-maximizing organization* or instead to hire the responsible worker to manage her firm as a *purpose-driven organization.*[2] The second decision is what action to take, whether she implements the action herself or elicits it from the responsible worker, depending on the organizational form she chooses. This action choice may involve complying with the regulation and selecting an action at or below the regulatory ceiling; or it may involve "cheating" by selecting an action above the ceiling, anticipating that non-compliance will only be caught with some probability that reflects the quality of regulatory oversight.

Two key results emerge from our model. First, hiring the responsible worker to manage the firm as a purpose-driven organization is always strictly optimal for the entrepreneur. The key is that in

[1] Most recently, for example, Hart and Zingales (2017) argued that firms should maximize shareholder *welfare* rather than profits.

[2] For expositional convenience, we refer to the entrepreneur and the regulator as "she", and to the worker as "he".

equilibrium the entrepreneur can invariably commit to select a high(er) action if she manages the firm herself. Anticipating this, it becomes optimal to hire the responsible worker and to let him enjoy extra utility by selecting an action that produces fewer externalities than the action that would be selected in a pure profit-maximizing organization; capturing the worker's rents thus created through lower wages.

Of course, in our model workers are simply a convenient embodiment of the social preferences toward environmental action that affect the entrepreneur's optimal action. The same basic message would apply if the entrepreneur were interacting with other stakeholders (e.g. investors, suppliers), taking into consideration social preferences for the negative externalities associated with production. The key insight is that the profit motive combined with the bargaining power to extract rents causes the self-interested, agnostic entrepreneur to internalize pro-social preferences, effectively *becoming* pro-social herself, creating the purpose-driven organization in the process. In a way, the entrepreneur "grows the pie" (Edmans, 2020) by hiring workers who derive "extra" private benefits from responsible behavior; in doing so the entrepreneur maximizes profits by creating a purpose-driven organization.

The second key result concerns the relation between regulatory oversight and CSR. When the regulator possesses the ability to monitor firm compliance with sufficient effectiveness, she can ensure that the firm complies with regulatory standards that approach the socially optimal level. In an environment with strict and enforceable standards, the optimal choice for the purpose-driven organization is to exactly comply with the regulatory ceiling. Thus in this case the firm precisely follows Friedman's dictum: it acts within the law but at the limit of what the law allows - it does not engage in CSR.

In contrast, when the regulator's monitoring technology is insufficiently effective, she must adopt - in order to ensure firm compliance - a regulatory threshold that is so lax that the benefits from oversight are outweighed by the costs of monitoring. In these instances the *effective* regulatory ceiling vanishes, and the entrepreneur has the option to elicit the pure profit-maximizing action from the worker in the purpose-driven organization. Instead the entrepreneur elicits an action strictly lower than the pure profit maximizing action, in order to extract rents from the responsible worker through lower wages, as discussed above. Indeed in those cases the purpose-driven organization does engage in CSR through *self-regulation*, producing strictly fewer externalities than pure profit-maximization would require. Thus, CSR emerges when the firm's profit motive causes it to have a comparative advantage over the regulator in reducing negative externalities.

Several empirical implications emerge from our model. The key prediction is that all else equal, the effectiveness of oversight should be negatively related to the level of CSR that firms adopt. Testing this prediction is challenging, however, because the correlation between the degree of oversight and

CSR is also presumably affected by other factors that might make them appear to be complementary, even if on the margin they are substitutes as our model predicts. Indeed, recent work by Liang and Renneboog (2016) finds that the average level of CSR in a country is highly correlated with its legal origin: civil-law countries, where state intervention is more common, outscore common-law countries, where a markets-based approach is more common. This is consistent with the view that, at least cross-sectionally, demand for environmental stewardship simultaneously drives higher levels of regulation *and* higher levels of CSR. But our model makes predictions about *ceteris paribus* effects: clearly, exogenous shocks to regulatory oversight are required to test our model's empirical implications.

To that end, we develop two sets of empirical tests based on plausibly exogenous variation in regulatory oversight. Our first set of tests follows Krüger (2015) and exploits a shock in UK reporting standards surrounding greenhouse gas (GHG) emissions. In 2012, the UK government imposed a mandatory GHG emissions disclosure policy on all public firms operating in the UK. This corresponds to an increase in oversight in our environment. Using a difference-in-difference strategy in which we compare UK with similar non-UK firms before and after the policy ruling, we find that after the mandatory disclosure policy, UK firms on average had lower corporate social responsibility ratings compared to firms from the other 15 European countries, which did not have a mandatory disclosure policy in place. The negative and significant effect of mandatory disclosure on CSR is consistent with the main prediction of our model, and robust to a large number of robustness checks.

Our second set of tests uses US data and relies on the fact that changes in the degree of outsourcing across industries have differentially changed regulators' monitoring ability. The central argument is that it may be more difficult for a regulator to monitor firms that offshore a large fraction of their activities; and that because these firms face less oversight they may choose higher levels of CSR. Here again we find evidence consistent with the model: our results show a positive relationship between industry-level foreign outsourcing and firms' CSR activities.

Finally, we also explore empirically how - i.e. through which channels - regulatory oversight may affect CSR. Consistent with the predictions of our model, we present evidence (from prior work and of our own) of a positive association between CSR and employee perception/retention, of a negative relationship between CSR and wages, and of a positive interaction between oversight and wages.

Our model is related to the literature exploring motivations for firms to engage in CSR. In the labor market, CSR may serve as a signalling (Greening and Turban, 2000) or screening (Brekke and Nyborg, 2004) mechanism to attract desirable employees; as entrenchment by inefficient managers protecting their jobs (Cespa and Cestone, 2007); as an employee governance device (Flammer and Luo, 2017); or as a strategy to extract rents from socially responsible worker (Bettignies and Robinson, 2018). The

related work of Henderson and Van den Steen (2015) suggests that "purpose" in an organization may help foster employees' pro-social identity and reputation. Alternatively, CSR may emerge through a product market channel as a result of optimal managerial incentive design (Baron, 2008), of competition in these markets (Arora and Gangopadhay, 1995; Bagnoli and Watts, 2003; Besley and Ghatak, 2007; Galasso and Tombak, 2014; Flammer, 2015a, 2018), or of reputation insurance (Minor 2015; Minor and Morgan 2013). Finally, CSR may stem from political motivations, as a hedging response to a threat posed by the "politician" who could be an activist or a nongovernmental organization (NGO) (Baron, 2001; Baron, 2009; Baron and Diermeier, 2007; Lyon and Maxwell, 2011; Bonardi *et al.*, 2020) or a lobbyist influencing government policy (Maxwell *et al.*, 2000; Lyon and Maxwell, 2004).[3]

Our empirical analysis is related to the recent literature on the disclosure of information on environmental, social, and/or governance (ESG) activities, and its effects on the performance of firms and the reactions of markets. For example, Doshi *et al.* (2013) examine the impact of mandatory disclosure of toxic chemical emissions on firms' environmental performance, and the organizational factors moderating this relationship. Christensen *et al.* (2017) document that mandatory disclosure of mine-safety records in financial reports leads to decreases in mining-related citations and injuries. Grewal (2017) considers the impact of mandatory GHG emissions disclosure regulation (using the 2012 UK policy described above) on the performance of firms that were already disclosing their GHG voluntarily prior to regulatory change; and highlights a negative effect on these firms' emissions levels. Chen *et al.* (2018) find that mandatory CSR activities disclosure leads to lower profits, but to a reduction in wastewater pollution and sulfur dioxide (SO_2) emissions levels in cities most affected by the mandate. And Grewal *et al.* (2019) show evidence of a negative equity market reaction to the mandatory disclosure of information on ESG performance.

Perhaps, most closely related to our paper are the works of Bettignies and Robinson (2018) and Krüger (2015). Our CSR model of rent-extraction from socially responsible workers through lower wages under inefficient regulatory ceilings builds on Bettignies and Robinson's (2018) model;[4] but examines a very different type of regulatory inefficiency. While in Bettignies and Robinson (2018) the inefficient ceilings emerge from *ex ante* lobbying to a government caring not only about social welfare but also about influence payments, here in contrast the inefficiently high ceilings result from imperfect oversight. Our empirical analysis builds on Krüger (2015) in its use of the UK's mandatory disclosure policy as a quasi-natural experiment; but remains distinct from his work in two main ways. Most

[3] Interactions between firms and "politicians" need not always be adversarial. Recent work by Chatain and Plaksenkova (2019), for example, models collaborations between firms and NGOs which mitigate market failures by enabling the inclusion of new suppliers in the supply chain.

[4] Also related is Henderson and Van den Steen's (2015) cooperative hiring game in which socially-minded worker are sorted into purpose-driven firms where they enjoy extra utility from a purposeful identity and reputation, and thus receive lower wages in equilibrium.

notably, he examines how mandatory GHG emissions disclosure affects firm value, while our interest is in how it affects CSR. In addition, while Krüger (2015) interprets the mandatory disclosure policy as an indirect reduction in GHG emissions, we focus on its more direct role as a change in oversight.

Overall, our work contributes to the literature by bringing together 1) a novel theory of purpose-driven organizations and of the effects of inefficient oversight on CSR; and 2) an empirical analysis providing support for the main predictions of our model, using a variety of datasets and methods.

The paper is organized as follows. Section 2 presents the basic elements of the model. Section 3 derives the regulator's monitoring and ceiling decisions, the optimal organizational form for the entrepreneur, and compliance and action choices, in equilibrium. Section 4 examines the endogenous emergence of CSR in the firm, and the role of regulatory oversight. Section 5 presents the main empirical analysis and explores the impact of oversight on CSR, while Section 6 focuses on the channels through which oversight may affect CSR, and in particular on the role of wages in these channels. Section 7 concludes.

2 Model Setup

The basic elements of the model can described as follows.

Entrepreneur and Firm. A risk-neutral and self-interested entrepreneur owns a firm that requires a managerial action $a \in \mathbb{R}_+$ to be selected to generate expected profits $\pi(a)$. The main characteristic of action a is that it imposes a negative externality on citizens. The amount of pollution that a firm emits, for example, is a natural interpretation of a.

The entrepreneur can select action a and manage the firm herself as a *pure profit-maximizing organization*. Or she can hire a responsible worker (described below) to choose a and manage the firm as a *purpose-driven organization*. Action a involves no personal cost to either the entrepreneur or the responsible worker.

The firm's expected profits $\pi(a)$ are positive, continuously differentiable over $\mathbb{R}_+$ and strictly concave in a, with $\frac{d\pi}{da}(0) > 0$ and $\frac{d\pi}{da}(x) < 0$ for some $x \in \mathbb{R}_{++}$. Hence there exists a unique action level $a_\pi = \arg\max \pi(a) > 0$ that maximizes expected profits. These expected profits are gross of possible compensation for the responsible worker.

Citizens. As mentioned above, action a creates a negative externality, in that it negatively affects the citizenry's utility $V(a)$: $dV/da < 0$ for all $a \in \mathbb{R}_+$. Clearly, then, the level of a that maximizes $V(a)$ is $a_c = 0$. Citizens do not take actions in this model, but their preferences are important for understanding social welfare.

Responsible Worker. A risk-neutral, wealth-unconstrained responsible worker, "*worker r*", is available for hire in the labor market. We assume that the entrepreneur can verify the action a selected by the hired worker; and makes a take-it-or-leave-it, action-contingent contractual offer $W(a)$ to the worker if it wishes to hire him.[5] The worker has reservation wage W^0, which we normalize to zero. We are agnostic about whether the entrepreneur is hiring one or many workers, and use the term *worker* to refer to the firm's labor force generally.

Unlike the entrepreneur who cares only about her payoff, the responsible worker cares not only about his compensation, but also about what Bettignies and Robinson (2018) call the *core social surplus* associated with action a, $S(a)$, defined as the sum of 1) the citizenry's utility, 2) the firm's profits net of compensation cost, 3) the hired worker's compensation: $S(a) = V(a) + [\pi(a) - W(a)] + W(a)$, or simply

$$S(a) = V(a) + \pi(a). \tag{1}$$

We use this notion of core surplus for expositional convenience, but shall become clear below, total social surplus (social welfare) is in fact a simple function of the core surplus in this model. We assume that $V(.)$ and $\pi(.)$ are such that $S(.)$ is "well-behaved," i.e. positive, continuously differentiable over $\mathbb{R}_+$ and strictly concave in a, with $\frac{dS}{da}(0) > 0$ and $\frac{dS}{da}(x) < 0$ for some $x \in \mathbb{R}_{++}$.

If he is hired with compensation $W_r(a)$ and chooses action a, worker r's utility is $U_r(a) = W_r(a) + \rho S(a)$, with $\rho \in (0,1)$, where $\rho S(a)$ is the "responsible" component of his preferences. If he turns down the entrepreneur's contractual offer, worker r's reservation utility is (the sum of his zero reservation wage and) a function of the core social surplus associated with action a^0 selected in that case (e.g. by the entrepreneur): $U_r^0 = W^0 + \rho S\left(a^0\right) = \rho S\left(a^0\right)$. Thus, the responsible worker experiences utility that is increasing in the core social surplus regardless of whether or not he is engaged in the alleviation of negative externalities.

Of course, because the worker's action is costless and there are no agency or information frictions associated with their behavior, the worker in our model can be viewed as simply a representation of a more general input to production that could either adhere or not adhere to standards of socially responsibility. All the intuition and results of our model would translate exactly under this broader, more general formulation, provided that the entrepreneur had the ability to extract a portion of the rents that accrue to others through their socially responsible choice.

[5] As in Bettignies and Robinson (2018), we assume risk-neutral, wealth-unconstrained workers and verifiable action. This simplification has the significant advantage of allowing us to abstract away from issues related to hidden information or hidden action between firm and worker, and to focus instead on the agency problems plaguing the firm/monitor relationship, as shall become clear below. For recent work on agency problems when agents have special preferences such as intrinsic motivation or prosocial preferences, see for example Benabou and Tirole (2003, 2006), Besley and Ghatak (2005, 2007), Prendergast (2007, 2008), Ellingsen and Johanesson (2008), or Delfgaauw and Dur (2008).

Social Responsibility. The parameter $\rho \in (0,1)$ captures worker r's degree of social responsibility. If $\rho = 0$, $U_r = W_r$, and worker r is purely self-interested. As ρ increases, however, he applies more weight on the core social surplus relative to his personal compensation.

Regulator. The regulator can monitor the firm and set a policy to regulate action a, with the aim of maximizing social welfare. We assume (in our opinion not unrealistically) that the regulator is too far removed from the activities of the worker to be able to observe the exact value of a; but that she can (imperfectly) verify whether or not the action implemented in the firm is above or below a certain threshold, and can therefore impose a *regulatory ceiling* $\overline{a}$ on the firm.

The entrepreneur then chooses whether to comply or to cheat. She can comply either by selecting action $a \leq \overline{a}$ herself, or by eliciting this action from the responsible manager, depending on the organizational form she has chosen. Likewise, she can choose to "cheat" and select action $a > \overline{a}$, again either herself or through worker r's contractual incentives.

The regulator makes two decisions: a monitoring decision $m \in \{0,1\}$ and a regulatory ceiling decision $\overline{a} \in [0, +\infty)$. Monitoring the firm ($m = 1$) imposes cost K on the regulator, but allows her to observe the firm's compliance (or lack thereof) with probability $\theta \in (0,1)$, where θ represents both the degree of monitoring efficiency, and more generally the amount of oversight of the firm by the regulator: a more efficient regulator observes compliance with higher probability, leading to more oversight in general. Non-compliance, if caught, is sanctioned with a penalty or fine T. For simplicity, we assume that T is a pure transfer from the firm to the citizenry, and hence has no direct impact on social welfare.

Alternatively, the regulator may decide to save cost K and not to monitor the firm ($m = 0$). In that case the regulator may still arbitrarily impose an "official" ceiling $\overline{a}_f \in [0, +\infty)$, but without monitoring this ceiling is irrelevant, and the effective ceiling in fact is $\overline{a} = \overline{a}_{max} \to \infty$.

Timing of the Game. At date 0, the regulator sets regulatory ceiling $\bar{a}_g$. At date 1, the entrepreneur decides whether to manage the firm herself as a pure profit-maximizing organization, or to hire the responsible worker to manage the firm as a purpose-driven organization. At date 2, the entrepreneur selects action $a \leq \overline{a}$ or $a > \overline{a}$ - either directly herself or by incentivizing worker r (depending on the organizational form chosen at date 1) - and decides whether or not to comply with regulation. At date 3, profits and utilities are realized and contracts are honored.

Social Welfare and the First Best. Social welfare is the grand total surplus generated, which includes 1) the citizenry's utility; 2) the firm's profits net of possible worker compensation cost; 3) worker r's compensation, if hired; 4) the responsible component of worker r's preferences ($\rho S(a)$); and

5) the regulator's monitoring cost, if oversight does take place: $TS(a) = V(a) + [\pi(a) - W(a)] + W(a) + \rho S(a) - K\mathbb{1}_{m=1}(m)$, where $\mathbb{1}_{m=1}(m)$ is an indicator function equal to 1 when $m = 1$ (i.e. monitoring occurs) and to 0 otherwise. More simply:

$$TS(a) = (1+\rho) S(a) - K\mathbb{1}_{m=1}(m). \tag{2}$$

In the first-best benchmark - i.e. when there are no agency conflicts and social welfare is maximized - clearly the regulator does not need to monitor the firm and hence $\mathbb{1}_{m=1}(m) = 0$. Furthermore, the strict concavity of $S(.)$, together with $\frac{dS}{da}(0) > 0$ and $\frac{dS}{da}(x) < 0$ for some $x \in \mathbb{R}_{++}$, ensure the existence and uniqueness of a first-best action a^* which maximizes both core surplus $S(a)$ and social welfare $TS(a)$ and generates first-best social welfare $TS^*(a^*) = (1+\rho) S(a^*)$. Note that a^* depends neither on whether worker r is hired nor on social responsibility parameter ρ; and that $a^* \in (0, a_\pi)$. This latter result follows directly from a) $\frac{dS}{da}(0) > 0$; b) $\frac{dS}{da}(a_\pi) = \frac{dV}{da}(a_\pi) < 0$; and c) the strict concavity of $S(a)$.

3 Oversight, Organization, and Action Choices in Equilibrium

In this section, we derive the subgame-perfect Nash equilibrium of the game. We proceed by backward induction to determine what happens from date 2 onward - action and compliance decisions - if the entrepreneur previously decided to manage the firm herself as a pure profit-maximizing organization; and if she decided to hire responsible worker r to manage the firm as a purpose-driven organization. We then move further backward to analyze the entrepreneur's optimal organizational strategy, i.e. her hiring decision at date 1. Finally, we examine the regulator's optimal regulatory ceiling selection at date 0.

3.1 Actions and Compliance Decisions

We begin by considering - in turn - equilibrium actions and associated compliance decisions in pure profit-maximizing organizations and purpose-driven organizations.

Pure Profit-Maximizing Organization. Suppose that at date 1 the entrepreneur has decided to manage the firm herself as a pure profit-maximizing organization. Then at date 2 she selects her preferred action. Clearly the action that maximizes the entrepreneur's *unconstrained* program $\pi(a)$ is the profit-maximizing action $a_\pi > a^*$. The difference between a_π and the first-best action a^* captures the externality at play here: The entrepreneur fails to internalize the negative impact of a on citizens,

and accordingly hence chooses an action that is too high from a welfare point of view. Here, however, the equilibrium action may be constrained by the regulatory ceiling $\bar{a}$ determined at date 0.

First, consider $\bar{a} \in [a_\pi, +\infty)$. Evidently, the entrepreneur complies, since selecting her unconstrained-optimal action a_π is consistent with compliance; and her expected payoff in this case is $\pi(a_\pi)$.

Now consider $\bar{a} \in [0, a_\pi)$. If the entrepreneur decides to comply, then the optimal strategy is to select action $\overline{a}$, i.e. exactly equal to the ceiling, yielding payoff $\pi(\overline{a})$. This optimal strategy comes from the strict concavity of $\pi(.)$, which implies $\frac{d\pi}{da}(a) > 0$ for all $a < a_\pi$. If the entrepreneur decides not to comply, then the optimal strategy is to select unconstrained profit-maximizing action a_π, generating expected payoff $\pi(a_\pi) - \theta T$. Hence, if $\bar{a} \in [0, a_\pi)$, the entrepreneur complies if and only if $\pi(\overline{a}) \geq \pi(a_\pi) - \theta T$, or more intuitively if and only if the marginal expected benefit from non-compliance is more than offset by its marginal expected cost:

$$\pi(a_\pi) - \pi(\overline{a}) \leq \theta T. \tag{3}$$

Since (as mentioned above) $\frac{d\pi}{da}(a) > 0$ for all $a < a_\pi$, there must exist, for all $\theta \in (0,1)$, a unique threshold value $\overline{a}_s(\theta) \in [0, a_\pi)$ of regulatory ceiling $\overline{a}$, such that condition (3) holds and the entrepreneur chooses to comply if and only if $\overline{a} \geq \overline{a}_s(\theta)$. Intuitively, if regulation is loose enough (i.e. $\overline{a}$ is close enough to a_π), the entrepreneur has little to gain from not complying and runs the risk of having to pay penalty T, and thus prefers to comply. However, as $\overline{a}$ decreases and regulation becomes stricter, the gain from "cheating" increases, and becomes greater than the expected penalty cost as $\overline{a}$ drops below $\overline{a}_s(\theta)$, prompting the entrepreneur to stop complying.

One can readily verify, using the Implicit Function Theorem, that threshold ceiling $\overline{a}_s(\theta)$ is strictly decreasing in θ: $\frac{d\overline{a}_s}{d\theta}(\theta) < 0$ for all $\theta \in (0,1)$. Indeed, the greater the amount of oversight, the greater the probability of getting caught and fined in the event of non-compliance. This increases the entrepreneur's incentive to comply with a given regulatory ceiling, and in turn lowers the minimum level of regulatory ceiling $\overline{a}_s(\theta)$ that remains compliance-compatible. *Vice versa*, a decrease in θ increases $\overline{a}_s(\theta)$, and indeed it is clear from (3) that $\lim_{\theta \to 0} \overline{a}_s(\theta) = a_\pi$. Thus, the entrepreneur's equilibrium action $a_s(\overline{a})$ in a pure profit-maximizing organization can be expressed as:

$$a_s(\overline{a}) = \left\{ \begin{array}{lll} a_\pi & \text{if} & \overline{a} \in [0, \overline{a}_s(\theta)) \\ \overline{a} & \text{if} & \overline{a} \in [\overline{a}_s(\theta), a_\pi) \\ a_\pi & \text{if} & \overline{a} \in [a_\pi, +\infty) \end{array} \right\}. \tag{4}$$

This results in the following equilibrium expected payoff $P_s(\overline{a})$ for the entrepreneur:

$$P_s(\overline{a}) = \left\{ \begin{array}{lll} \pi(a_\pi) - \theta T & \text{if} & \overline{a} \in [0, \overline{a}_s(\theta)) \\ \pi(\overline{a}) & \text{if} & \overline{a} \in [\overline{a}_s(\theta), a_\pi) \\ \pi(a_\pi) & \text{if} & \overline{a} \in [a_\pi, +\infty) \end{array} \right\}. \tag{5}$$

Purpose-Driven Organization. Now suppose that at date 1 the entrepreneur decided to hire responsible worker to manage the firm as a purposed-driven organization. Then at date 2 she makes contractual offer $W_r(a)$ to worker r. As discussed above, if he accepts the offer and chooses action a, his utility is $U_r(a) = W_r(a) + \rho S(a)$. If he is not hired, worker r's reservation utility depends on the action a^0 chosen in that case: $U_r^0 = \rho S\left(a^0\right)$. For simplicity we assume that if worker r turns down the offer, the manages the firm herself as discuss above and selects action $a^0 = a_s$, generating utility $U_r^0 = \rho S(a_s)$ for worker r.[6]

Consider first the *unconstrained* scenario in which no regulatory ceiling is constraining the action requested by the entrepreneur from worker r. Suppose the entrepreneur wishes to elicit an action $\widehat{a}$. In this case, the optimal contract $W_r(a)$ offered to worker r includes 1) a base salary w_r; and 2) an action-contingent bonus $b_r(a)$ such that $b_r(a) = b_r$ if $a = \widehat{a}$ and $b_r(a) = 0$ if $a \neq \widehat{a}$.

The action $\widehat{a}$, the base salary w_r, and the bonus b_r are chosen to maximize the entrepreneur's program $\pi(\widehat{a}) - (w_r + b_r)$, subject to the incentive compatibility (IC) constraint,[7]

$$b_r + \rho S(\widehat{a}) \geq \rho S(a^*), \tag{6}$$

and to the individual rationality (IR) constraint,

$$w_r + b_r + \rho S(\widehat{a}) \geq \rho S(a_s). \tag{7}$$

In equilibrium b_r and w_r are chosen as solutions to binding IC and IR constraints, respectively; and accordingly the equilibrium *unconstrained action* a_r^u maximizes the following simplified program:

$$\max_{\widehat{a}} \quad \pi(\widehat{a}) + \rho\left[S(\widehat{a}) - S(a_s)\right]. \tag{8}$$

The intuition is simple and well-known: the entrepreneur chooses the action a_r^u that maximizes the joint entrepreneur-worker surplus; ensures that worker r has an incentive to select this action through

[6] The results of the model would continue to hold under a much weaker assumption, as long as, should worker r turn down the entrepreneur's offer, she would manage the firm herself with non-zero probability.

[7] Conditional on not choosing $\widehat{a}$, the worker anticipates he will receive a payoff of $w_r + \rho S(a)$. And the action that maximizes this payoff is a^*.

the appropriate choice of b_r satisfying (6); and extracts all rents from him by choosing the base salary w_r such that (7) is binding.

The entrepreneur's payoff, for a given requested action a_r^u, thus includes two components: gross profit $\pi(a_r^u)$, and the *social responsibility wedge* $\rho[S(a_r^u) - S(a_s)]$ extracted from the responsible worker (Bettignies and Robinson, 2018). This wedge is the difference between the responsible components of worker r's utility a) if he is hired to take action a_r^u and b) if instead the entrepreneur manages the firm herself and takes action a_s. In other words, by allowing worker r to "save the world" by choosing relatively low action a_r^u, the entrepreneur artificially creates rents for the worker (the social responsibility wedge), which she can then extract from him through lower wages.

Given the strict concavity of $\pi(.)$ and $S(.)$ and hence of $\pi(.) + \rho S(.)$,[8] the unique unconstrained action a_r^u maximizing program (8) can be expressed as the solution to:

$$\frac{d\pi}{d\widehat{a}}(a_r^u) + \rho \frac{dS}{d\widehat{a}}(a_r^u) = 0. \tag{9}$$

One can easily verify that $a_r^u \in (a^*, a_\pi)$. Intuitively, on the one hand, because the entrepreneur extracts all of the rents from worker r, as mentioned above she is maximizing the joint entrepreneur-worker surplus, and is therefore internalizing the social responsibility component of worker r's preference, leading her to select a lower action than she would choose in a pure profit-maximizing firm: $a_r^u < a_\pi$. On the other hand, even after internalizing worker r's preferences, the entrepreneur does not care *only* about social welfare and retains expected profits as a separate component of her preferences, hence choosing a higher action than she would if she only cared about welfare maximization: $a_r^u > a^*$.[9]

As in the case of the pure profit-maximizing firm, here again the equilibrium action may be constrained by the regulatory ceiling $\bar{a}$ determined at date 0. First, consider $\bar{a} \in [a_r^u, +\infty)$. Unsurprisingly, the entrepreneur complies, since selecting her unconstrained-optimal action a_r^u is consistent with compliance. The entrepreneur's expected payoff in this case is $\pi(a_r^u) + \rho[S(a_r^u) - S(a_s)]$.

Now consider $\bar{a} \in [0, a_r^u)$. If the entrepreneur decides to comply, then the optimal strategy is to select action $\overline{a}$, i.e. exactly equal to the ceiling, yielding payoff $\pi(\overline{a}) + \rho[S(\overline{a}) - S(a_s)]$. This optimal strategy comes from the strict concavity of $\pi(.) + \rho S(.)$ discussed above, which implies $\frac{d(\pi+\rho S)}{da}(a) > 0$ for all $a < a_r^u$. If the entrepreneur decides not to comply, then the optimal strategy is to select unconstrained optimal action a_r^u, generating expected payoff $\pi(a_r^u) + \rho[S(a_r^u) - S(a_s)] - \theta T$.

[8] To be precise, our assumptions that $\frac{d\pi}{da}(0) > 0$ and $\frac{dS}{da}(0) > 0$, and that $\frac{d\pi}{da}(x) < 0$ and $\frac{dS}{da}(x) < 0$ for some values of $x \in \mathbb{R}_{++}$, together with the strict concavity of $\pi(.) + \rho S(.)$, ensure that a unique a_r^u maximizing program (8) exists.

[9] More formally, unconstrained action a_r^u maximizes a linear combination of two strictly concave functions, $S(.)$ and $\pi(.)$, thus the solution to this linear combination should be between their solutions, a^* and a_π. Indeed, this follows directly from the strict concavity of $\pi(.) + \rho S(.)$, along with the fact that $\frac{dS}{da}(a^*) = 0$ and $\frac{d\pi}{da}(a^*) > 0$, $\frac{d\pi}{da}(a_\pi) = 0$ and $\frac{dS}{da}(a_\pi) < 0$, and $a^* < a_\pi$ as shown previously.

Thus, if $\bar{a} \in [0, a_r^u)$, the entrepreneur complies if and only if $\pi(\overline{a}) + \rho[S(\overline{a}) - S(a_s)] \geq \pi(a_r^u) + \rho[S(a_r^u) - S(a_s)] - \theta T$, or more intuitively if and only if the marginal expected benefit from non-compliance is more than offset by its marginal expected cost:

$$[\pi(a_r^u) + \rho S(a_r^u)] - [\pi(\overline{a}) + \rho S(\overline{a})] \leq \theta T. \tag{10}$$

Since (as mentioned above) $\frac{d(\pi+\rho S)}{da}(a) > 0$ for all $a < a_r^u$., there must exist, for all $\theta \in (0,1)$, a unique threshold value $\overline{a}_r(\theta) \in [0, a_r^u)$ of regulatory ceiling $\overline{a}$, such that condition (10) holds and the entrepreneur chooses to comply if and only if $\overline{a} \geq \overline{a}_r(\theta)$. The intuition is the same as in the pure profit-maximizing organization, albeit with different payoffs: if regulation is loose enough (i.e. $\overline{a}$ is close enough to a_r^u), the entrepreneur has little to gain from not complying and runs the risk of having to pay penalty T, and thus prefers to comply. However, as $\overline{a}$ decreases and regulation becomes stricter, the gain from "cheating" increases, and becomes greater than the expected penalty cost as $\overline{a}$ drops below $\overline{a}_r(\theta)$, prompting the entrepreneur to stop complying.

Two points are worth highlighting about threshold ceiling $\overline{a}_r(\theta)$. First, using the Implicit Function Theorem, one can verify that, just like $\overline{a}_s(\theta)$, threshold ceiling $\overline{a}_r(\theta)$ is strictly decreasing in θ: $\frac{d\overline{a}_r}{d\theta}(\theta) < 0$ for all $\theta \in (0,1)$. More oversight increases the marginal expected cost of non-compliance and the entrepreneur's incentive to comply, and hence decreases the minimum level of regulatory ceiling $\overline{a}_r(\theta)$ that remains compliance-compatible. Conversely, a decrease in θ increases $\overline{a}_r(\theta)$, and indeed it is clear from (10) that $\lim_{\theta \to 0} \overline{a}_r(\theta) = a_r^u$.

Second, note from expressions (3) and (10) that while the expected cost of non-compliance, θT, is the same in the pure profit-maximizing firm and in the purpose-driven firm, the gain from non-compliance is always greater in the former than in the latter:

$$\pi(a_\pi) - \pi(\overline{a}) > [\pi(a_r^u) + \rho S(a_r^u)] - [\pi(\overline{a}) + \rho S(\overline{a})], \tag{11}$$

for all $\bar{a} \in [0, a_r^u)$.[10] It must be the case, then, that $\overline{a}_r(\theta) < \overline{a}_s(\theta)$. Intuitively, in the purpose-driven organization the entrepreneur internalizes worker r's pro-social preferences, and as a result her objective function becomes more "aligned" with social welfare. This reduces her incentives to select a high action a and her gains from non-compliance; and in turn leads to a lower threshold ceiling $\overline{a}_r(\theta)$.

From the foregoing analysis we conclude that, in a purpose-driven organization, the entrepreneur elicits the following equilibrium action from responsible worker r:

[10] Simplifying expression (11) yields $\pi(a_\pi) + \rho S(\overline{a}) > \pi(a_r^u) + \rho S(a_r^u)$, which is always the case since $\pi(a_\pi) > \pi(a_r^u)$ and $\rho S(\overline{a}) > \rho S(a_r^u)$ for all $\bar{a} \in [0, a_r^u)$.

$$a_r(\overline{a}) = \left\{ \begin{array}{lll} a_r^u & \text{if} & \overline{a} \in [0, \overline{a}_r(\theta)) \\ \overline{a} & \text{if} & \overline{a} \in [\overline{a}_r(\theta), a_r^u) \\ a_r^u & \text{if} & \overline{a} \in [a_r^u, +\infty) \end{array} \right\}. \tag{12}$$

This results in the following equilibrium expected payoff $P_r(\overline{a})$ for the entrepreneur:

$$P_r(\overline{a}) = \left\{ \begin{array}{lll} \pi(a_r^u) + \rho[S(a_r^u) - S(a_s)] - \theta T & \text{if} & \overline{a} \in [0, \overline{a}_r(\theta)) \\ \pi(\overline{a}) + \rho[S(\overline{a}) - S(a_s)] & \text{if} & \overline{a} \in [\overline{a}_r(\theta), a_r^u) \\ \pi(a_r^u) + \rho[S(a_r^u) - S(a_s)] & \text{if} & \overline{a} \in [a_r^u, +\infty) \end{array} \right\}. \tag{13}$$

3.2 Organizational Choice

At date 1, the entrepreneur decides whether to manage the firm herself as a pure-profit-maximizing organization, or to hire responsible worker r to manage the firm as a purpose-driven organization. To make this decision, she compares her expected payoffs $P_s(\overline{a})$ and $P_r(\overline{a})$ using expressions (5) and (13), respectively, taking regulatory ceiling $\overline{a}$ as given. We consider 3 parametric regions in turn.

First, consider $\overline{a} \in [0, \overline{a}_r(\theta))$. Note that since, as discussed previously, $\overline{a}_r(\theta) < \overline{a}_s(\theta)$, the entrepreneur would choose not to comply regardless of the organizational form selected. Thus in this region she prefers the purpose-driven organization if and only if $\pi(a_r^u) + \rho[S(a_r^u) - S(a_\pi)] - \theta T \geq \pi(a_\pi) - \theta T$, which simplifies to $\pi(a_r^u) + \rho S(a_r^u) \geq \pi(a_\pi) + \rho S(a_\pi)$. This always holds with strict inequality, since as shown above $\pi(.) + \rho S(.)$ is strictly concave and maximized at $a = a_r^u$. Hence, in this region the entrepreneur strictly prefers to hire responsible worker r to manage the firm as a purpose-driven organization.

Next, consider $\overline{a} \in [\overline{a}_r(\theta), a_r^u)$. There are two sub-cases to examine in this region. If $\overline{a} < \overline{a}_s(\theta)$, compliance would take place in a purpose-driven organization, but not in a pure profit-maximizing firm, and hence the entrepreneur prefers the purpose-driven organization if and only if $\pi(\overline{a}) + \rho[S(\overline{a}) - S(a_\pi)] \geq \pi(a_\pi) - \theta T$. In the previous paragraph we already established that $\pi(a_r^u) + \rho[S(a_r^u) - S(a_\pi)] - \theta T > \pi(a_\pi) - \theta T$, and the compliance condition in a purpose-driven organization implies $\pi(\overline{a}) + \rho[S(\overline{a}) - S(a_\pi)] \geq \pi(a_r^u) + \rho[S(a_r^u) - S(a_\pi)] - \theta T$. By transitivity, then, we must have $\pi(\overline{a}) + \rho[S(\overline{a}) - S(a_\pi)] > \pi(a_\pi) - \theta T$: The entrepreneur strictly prefers the purpose-driven organization in this sub-region. In contrast, If $\overline{a} \geq \overline{a}_s(\theta)$, compliance would take place under both organizational forms, generating the same equilibrium action $\overline{a}$ and the same expected payoff $\pi(\overline{a})$; and making the entrepreneur indifferent between the pure profit-maximizing firm and the purpose-driven firm in that sub-region.

Finally, consider $\overline{a} \in [a_r^u, +\infty)$. In this region, the entrepreneur prefers the purpose-driven organization if and only if $\pi(a_r^u) + \rho[S(a_r^u) - S(a_s)] \geq \pi(a_s) - \theta T \mathbb{1}_{a_s > \overline{a}}(a_s)$, where $a_s \in \{\overline{a}, a_\pi\}$ and $\mathbb{1}_{a_s > \overline{a}}(a_s)$ is an indicator function equal to 1 if the pure profit-maximizing firm fails to comply with the regulatory ceiling and to 0 otherwise. Thus expression can be re-written as $\pi(a_r^u) + \rho S(a_r^u) \geq \pi(a_s) + \rho S(a_s) - \theta T \mathbb{1}_{a_s > \overline{a}}(a_s)$ with $a_s > a_r^u$, which always holds with strict inequality, since as discussed above $\pi(.) + \rho S(.)$ is strictly concave and maximized at $a = a_r^u$. Hence, in this region the entrepreneur strictly prefers to hire responsible worker r to manage the firm as a purpose-driven organization.

We depict these results graphically in Figures 1 and 2, which capture equilibrium actions and payoffs, respectively, as functions of regulatory ceiling $\overline{a}$, in pure profit-maximizing firms and purpose-driven firms.

[Insert Figures 1 and 2 here.]

Strikingly, these figures illustrate the result that the entrepreneur strictly prefers the purpose-driven organization over the pure profit-maximizing organization for all regulatory ceiling levels $\overline{a} \in [0, +\infty)$; except when $\overline{a}_s(\theta) \leq a_u^r$ and $\overline{a} \in [\overline{a}_s(\theta), a_u^r]$, in which case she is indifferent between the two organizational choices. The intuition follows naturally from the above analysis. When monitoring efficiency θ is such that $\overline{a}_s(\theta) \leq a_u^r$, if $\overline{a} \in [\overline{a}_s(\theta), a_u^r]$, it is optimal for the entrepreneur to comply *exactly* with regulation under both organizational forms: $a_s = a_r = \overline{a}$. Hence worker r derives no additional utility from working at the firm and selecting a more responsible action, the social responsibility wedge $\rho[S(a_r) - S(a_s)]$ collapses to zero, and there are no additional rents to be extracted by the entrepreneur in the purpose-driven organization. In all other scenarios, the entrepreneur can effectively *commit* to selecting action $a_s > a_r$ if worker r turns down the offer. This creates a strictly positive social responsibility wedge that can be extracted by the entrepreneur, making the purpose-driven organization her strictly preferred organizational choice.

3.3 Monitoring and Regulatory Ceiling Decisions

At date 0, the regulator sets the regulatory ceiling $\overline{a}$ anticipating the entrepreneur's preference for a purpose-driven organization at date 1, and her compliance and action choices at date 2.[11] More formally, the regulator chooses $\overline{a}$ to maximize social welfare:

$$\max_{\overline{a},t} \quad (1+\rho) S(a_r) - K \mathbb{1}_{m=1}(m). \tag{14}$$

[11] The regulator anticipates that the entrepreneur will either strictly prefer the purpose-driven organization; or will be indifferent between the two organizational choices, in which case the equilibrium action chosen will be identical regardless.

subject to the entrepreneur's equilibrium action choice a_r in the purpose-driven organization, as summarized in (12).

Without Monitoring. The regulator may choose not to monitor the firm ($m = 0$). As discussed in the model setup, in that case the regulator may still arbitrarily impose an "official" ceiling $\overline{a}_f \in [0, +\infty)$, but without monitoring this ceiling is irrelevant, and the effective ceiling in fact is $\overline{a} = \overline{a}_{max} \to \infty$. Thus, this would save the regulator the monitoring cost K, and we know from (12) that this would yield firm compliance and an equilibrium action $a_r = a_r^u < \overline{a}_{max}$; generating social welfare $(1 + \rho) S(a_r^u)$.

With Monitoring. Alternatively, the regulator may choose to monitor the firm ($m = 1$) and set a non-trivial regulatory ceiling $\overline{a}$. The regulator's objective function described in (14) with $\mathbb{1}_{m=1}(m) = 1$ is maximized at $a_r = a^*$, and hence that is the action that she would *ideally* like to see implemented.

However the regulator is constrained by the fact that - if the regulatory ceiling is "too low" - the entrepreneur may "cheat" and elicit high action a_π from worker r, generating low welfare $(1 + \rho) S(a_\pi) - K$. Hence, for any given level of monitoring efficiency θ, the lowest compliance-compatible regulatory threshold that the regulator can set is $\overline{a}_r(\theta)$ where, as shown above in Section 3.1, $\frac{d\overline{a}_r}{d\theta}(\theta) < 0$ for all $\theta \in (0, 1)$. For simplicity, we impose the following regularity condition on T,

$$[\pi(a_r^u) + \rho S(a_r^u)] - [\pi(a^*) + \rho S(a^*)] > T, \tag{15}$$

which ensures - from compliance condition (10) - that $\lim_{\theta \to 1} \overline{a}_r(\theta) > a^*$. Note that since, as discussed above, $\overline{a}_r(\theta) < \overline{a}_s(\theta)$, we must also have $\lim_{\theta \to 1} \overline{a}_s(\theta) > a^*$. This condition simplifies the analysis by eliminating trivial cases where, when θ is sufficiently close to 1, first-best action a^* can be implemented.

Since the regulator cannot induce compliance at a level as low as the first-best level a^*, her optimal strategy in that case is to select the lowest possible compliance-compatible regulatory ceiling, $\overline{a}(\theta) = \overline{a}_r(\theta)$; generating social welfare $(1 + \rho) S(\overline{a}_r(\theta)) - K$. As monitoring efficiency decreases, the regulator is forced to increase the regulatory ceiling $\overline{a}(\theta) = \overline{a}_r(\theta)$ to maintain compliance-compatibility and, as discussed in Section 3.1, $\lim_{\theta \to 0} \overline{a}_r(\theta) = a_r^u$.

Optimal Monitoring and Ceiling Choices, and Equilibrium of the Game.

It follows immediately from the foregoing analysis that at date 0 the regulator chooses to monitor the firm and imposes regulatory ceiling $\overline{a}_r(\theta)$ if and only if:

$$(1 + \rho) S(\overline{a}_r(\theta)) - K \geq (1 + \rho) S(a_r^u), \tag{16}$$

where $\overline{a}_r(\theta) \in (a^*, a_r^u)$ and $\frac{d\overline{a}_r}{d\theta}(\theta) < 0$ for all $\theta \in (0,1)$.

To avoid trivial solutions, we impose the following regularity condition on K,

$$K \leq \lim_{\theta \to 1} (1+\rho)\left[S\left(\overline{a}_r(\theta)\right) - S\left(a_r^u\right)\right], \tag{17}$$

which ensures that for some high levels of monitoring efficiency θ, at least, condition (16) holds, and monitoring the firm is optimal for the regulator.[12]

At the other end of the spectrum, when monitoring efficiency is extremely low and $\theta \to 0$, the optimal regulatory ceiling under monitoring is $\overline{a}_r(\theta) \to a_r^u$, and in that case monitoring is clearly inferior to no monitoring, since it leads to effectively the same action a_r^u being implemented in the organization in equilibrium, but imposes the additional monitoring cost K.

Importantly, the regulator's expected payoff from monitoring is a continuous and strictly increasing function of θ over $(0,1)$. Intuitively, as monitoring efficiency rises, compliance incentives increase, and the regulator responds by reducing the compliance-compatible regulatory ceiling $\overline{a}_r(\theta)$, leading to a lower action being implemented in equilibrium, to greater social welfare.

Since the regulator's payoff from no monitoring is independent of θ, the foregoing discussion implies that there must exist a threshold level of monitoring efficiency $\theta_g \in (0,1]$, such that the regulator chooses to monitor the firm and impose equilibrium ceiling $\overline{a}_g(\theta) = \overline{a}_r(\theta)$ if $\theta \in [\theta_g, 1)$; and chooses not to monitor the firm and sets arbitrary equilibrium ceiling $\overline{a}_g(\theta) = \overline{a}_{max}$ if $\theta \in (0, \theta_g)$.[13] In words, when monitoring efficiency is sufficiently low, monitoring does not allow the regulator to have a significant effect on the action implemented in equilibrium, and prefers to "cut her losses" by foregoing monitoring altogether. Combining these results with the results of Sections 3.1 and 3.2, we can express the equilibrium as follows:

Proposition 1 *For a given degree of monitoring efficiency, or oversight $\theta \in (0,1)$, we can express the equilibrium regulatory ceiling, organizational choice, worker action, and payoffs, as follows:*

- *High monitoring efficiency: $\theta \in [\theta_g, 1)$. At date 0 the regulator decides to monitor the firm ($m = 1$) and sets regulatory ceiling $\overline{a}_g(\theta) = \overline{a}_r(\theta) < \overline{a}_s(\theta)$. At date 1, the entrepreneur strictly prefers to hire responsible worker r to manage the firm as a purpose-driven organization. At date 2, the entrepreneur complies with regulation and elicits action $a_r = \overline{a}_r(\theta) < a_r^u$ from worker r,*

[12] If regulatory condition (17) does not hold, the regulator never monitors, regardless of $\theta \in (0,1)$.

[13] This follows directly from the facts that 1) $\lim_{\theta \to 0} (1+\rho) S\left(\overline{a}_r(\theta)\right) - K = (1+\rho) S\left(a_r^u\right) - K < (1+\rho) S\left(a_r^u\right)$; 2) $\lim_{\theta \to 1} (1+\rho) S\left(\overline{a}_r(\theta)\right) - K > (1+\rho) S\left(a_r^u\right)$; 3) $S(.)$ is strictly decreasing in a for all $a > a^*$; and 4) $\overline{a}_r(\theta)$ is strictly decreasing in θ.

who understands that the alternative action is $a_s = a_\pi$. At date 3, worker r receives compensation $W(\overline{a}_r(\theta))$; and the firm obtains payoff $P_r(\overline{a}_r(\theta)) = \pi(\overline{a}_r(\theta)) + \rho[S(\overline{a}_r(\theta)) - S(a_\pi)]$.

- *Low monitoring efficiency: $\theta \in (0, \theta_g)$. At date 0 the regulator decides not to monitor the firm ($m = 0$) and the effective regulatory ceiling is $\overline{a}_g(\theta) = \overline{a}_{max}$. At date 1, the entrepreneur strictly prefers to hire responsible worker r to manage the firm as a purpose-driven organization. At date 2, the entrepreneur elicits action $a_r = a_r^u$ from worker r, who understands that the alternative action is $a_s = a_\pi$. At date 3, worker r receives compensation $W(a_r^u)$; and the firm obtains payoff $P_r(\overline{a}_{max}(\theta)) = \pi(a_r^u) + \rho[S(a_r^u) - S(a_\pi)]$.*

An important implication of Proposition 1 concerns the optimality of the purpose-driven organization. In Section 3.2 we showed that the entrepreneur may be indifferent between pure profit-maximizing firms and purpose-driven organizations, or strictly prefer the latter, depending on the level of the regulatory ceiling. However, *in equilibrium* we can "pin down" more accurately the effective regulatory ceiling imposed by the regulator, and in turn make a more precise prediction about the optimal organizational form in our model:

Proposition 2 *In equilibrium the purpose-driven organization always strictly dominates the pure profit-maximizing organization from the entrepreneur's viewpoint.*

This is because in equilibrium it is optimal for the regulator to either set the regulatory ceiling at $\overline{a}_g(\theta) = \overline{a}_r(\theta) < \overline{a}_s(\theta)$, which implies equilibrium actions $a_r = \overline{a}_r(\theta)$ and $a_s = a_\pi > a_r$; or not to monitor the firm at all, in which case the effective regulatory ceiling is $\overline{a}_g(\theta) = \overline{a}_{max}$, leading to equilibrium actions $a_r = a_r^u$ and $a_s = a_\pi > a_r$. In either case this allows the entrepreneur to credibly commit to selecting to selecting action $a_s > a_r$ if worker r turns down the employment offer. As mentioned above, this creates a strictly positive social responsibility wedge that can be extracted by the entrepreneur through lower wages for the worker, making the purpose-driven organization her strictly preferred organizational choice.

One way to interpret Proposition 2 is in terms of shareholder value: the purpose-driven organization in our model delivers more shareholder value than the pure profit-maximizing organization. This is consistent with the recent evidence, which suggests that purpose - measured by employee satisfaction (Edmans, 2011) and employees' beliefs about the meaning of their work (Gartenberg *et al.*, 2019) - has a positive impact on firms' accounting and financial performance. Interestingly, Gartenberg *et al.* (2019) find that this effect is strongest 1) for mid-level employees and 2) in firms where the leadership makes expectations clear to employees. This is particularly in line with our model where a) worker r

represents the "average" employee across all levels of the organization, and b) frictionless contracting between the entrepreneur and worker r means that the entrepreneur is able to clearly specify the action that she expects from the worker.[14]

4 CSR in the Purpose-Driven Organization

Proposition 1 also highlights key implications of our model regarding CSR, which we discuss in more detail in this section. There are many ways to define CSR,[15] but perhaps most commonly associated with this concept is the notion of "over-compliance". The idea is that firms engage in CSR when they voluntarily take socially beneficial actions, over and above what they are required to do *by law* (McWilliams and Siegel, 2001; Calveras *et al.*, 2007).

As our model suggests, however, the law is only useful as a benchmark if there is enough regulatory oversight to discipline firms into at the very least complying with the law. In contrast, absent regulatory oversight, firms are no longer bound by the law - they can simply flout it with impunity. The legal limit itself then becomes arbitrary and irrelevant in these environments, and can no longer serve as a benchmark against which to measure CSR activities. When unconstrained by law, firms always have the option of behaving as pure profit-maximizers, and indeed we argue that - in these unconstrained environments - they engage in CSR when they "self-regulate" by voluntarily taking socially beneficial actions, over and above what they would do *as pure profit-maximizers*.

Correspondingly, within the context of our model, a firm engages in CSR when either 1) there is regulatory oversight and the action a_r chosen by worker r in equilibrium is lower than regulatory ceiling $\overline{a}_g(\theta)$; or 2) there is no oversight and the action a_r chosen by worker r in equilibrium is lower than the action a_π that would be selected in a pure profit-maximizing firm. More formally, we can write $CSR = \min\{\overline{a}_g(\theta), a_\pi\} - a_r$. The key result of our model then follows from Proposition 1:

Proposition 3 *Even in purpose-driven organizations, there is no CSR at high levels of monitoring efficiency, i.e. for all $\theta \in [\theta_g, 1)$. At low levels of monitoring efficiency, i.e. for all $\theta \in (0, \theta_g)$, CSR endogenously emerges in the purpose-driven organization, which deliberately self-regulates by taking actions strictly lower than the actions that would be chosen under pure profit-maximization.*

Figure 3, which depicts the regulatory ceiling, the equilibrium action, and the level of CSR, as functions of θ, illustrates these points:

[14] Also related is the work of Eccles *et al.* (2014), where "high sustainability" companies are shown to outperform "low sustainability" companies in both accounting and stock market performance; and that of Flammer (2015b), which shows that close-call adoptions of CSR initiatives are associated with superior accounting performance.

[15] See, e.g. Baron (2001), Baron (2013, Ch. 20), and Kitzmueller and Shimshack (2012) for discussions of the CSR concept.

[Insert Figure 3 here.]

When monitoring efficiency is high ($\theta \in (\theta_g), 1$), the purpose-driven organization does select a low action $a_r < a_r^u$, but does not technically engage in CSR, because the high monitoring efficiency and associated oversight imply a strict (i.e. low) regulatory ceiling, and it is optimal for the firm to *just comply* with regulation and select action $a_r = \overline{a}_r(\theta)$. In other words, because the regulation is already strict, the firm does what they are told to do, but does not go above and beyond.

In contrast, when monitoring efficiency is low ($\theta \in (0, \theta_g)$), the purpose-driven organization selects a higher action $a_r = a_r^u$, but does engage in CSR. This is because low monitoring efficiency means no regulatory oversight in equilibrium. Hence the firm *could* choose the pure profit-maximizing action a_π, but instead engages in CSR by self-regulating and selecting action $a_r = a_r^u < a_\pi$, in order to extract rents from responsible workers through lower wages, as discussed above.

Overall, Figure 3 also illustrates a key implication of Proposition 3, and the main empirical prediction of our model, which we express in the following Proposition:

Proposition 4 *Regulatory oversight has a negative impact on CSR.*

We end the theoretical part of this paper with three final points on our modeling of CSR. First, one argument sometimes made in the literature is that for pro-social corporate activities like over-compliance to receive the CSR label, these activities must be the result of a "responsible" or "moral" motivation; otherwise they merely capture the firm's corporate social performance (CSP) rather than CSR (Baron, 2001; Baron, 2013, Ch. 20). Since in our model the entrepreneur is a purely self-interested profit-maximizer, it may seem at first blush that when choosing self-regulation in a purpose-driven organization, she is in fact engaging in CSP. However, because she extracts all rents from responsible worker r, the self-interested entrepreneur internalizes the pro-social preferences of worker r and effectively "becomes" socially responsible herself. Indeed, in our model profit-maximization is precisely what leads the entrepreneur to behave *as if* she were motivated by "responsible" preferences, blurring the distinction between CSR and CSP.

The second point concerns the stark nature of the relationship between regulatory oversight and CSR: If there is oversight then there is no CSR, and *vice versa* if there is no oversight then CSR does arise in equilibrium. This result comes from our implicit assumption that responsible worker r is always available. The regulator anticipates that the entrepreneur will hire worker r to manage the firm as a purpose-driven organization, and (if monitoring is worthwhile) that she will be able to impose a fairly stringent ceiling on the firm, too stringent for the firm to be willing to over-comply and for CSR to occur. But consider a more realistic scenario perhaps, in which the probability of being able to hire

a responsible worker is actually quite small. In that case the regulator anticipates a high probability of facing a pure profit-maximizing organization, and accordingly that she may have to set a very high regulatory ceiling to ensure compliance. This high ceiling, in turn, would allow the purpose-driven organization - when worker r is available - to over-comply with regulation and engage in CSR in some cases, even when some monitoring does occur. We feel that the extra tediousness and expositional complications that such a generalization would require dominate the minor additional insights that it would bring, hence our decision to opt for the more stylized version of the model.

Last but not least, our model suggests that while regulation has an important role to play in constraining corporate behavior and nudging firms toward socially superior actions, it is in fact highly endogenous and meaningful only to the extent that the regulator possesses the resources and/or ability to monitor the regulated firms. Indeed as shown above, whatever the *official* ceiling level observed in practice, without regulatory oversight the *effective* regulatory level may in fact be much higher and tend to infinity, with no actual constraining power on firms. Our model thus suggests that it may be judicious to focus our empirical work on the effects of oversight rather than on the impact of regulation, and indeed this is the path we choose to follow in our empirical analysis below.

In the remainder of this paper, we take our model's main results to the data. Specifically, in Section 5 we examine Proposition 4 empirically and test whether regulatory oversight does reduce CSR; and in Section 6 we investigate empirically the channels through which regulatory oversight might affect CSR and in particular, following the predictions of our model, the interactions between regulatory oversight, wages, and CSR.

5 Testing the Model: Does Regulatory Oversight Reduce CSR?

In this section, we explore a series of empirical tests of Proposition 4. We begin with two difference-in-difference strategies built around the introduction of the UK's so-called *Companies Act (2013)*. The strategies differ in terms of how we identify the control group: in the first one, we use the fact that non-UK firms were not affected by the Act; while in the second one we use the fact that some firms already engaged in voluntary compliance prior to the act—presumably these firms were less affected than those who chose not to report before the Act was passed. Then we discuss a third test based on variation in the degree of outsourcing among US firms.

5.1 The UK Companies Act of 2013

In July 2013, the UK government passed *The Companies Act 2006 (Strategic Report and Director's Report) Regulation 2013* (the *The Companies Act (2013)*), which required all listed UK firms to

report their GHG emissions in their annual reports. The bill was made publicly available on July 25, 2012, was approved by the UK House of Commons on July 16, 2013, and came into effect on October 1, 2013 (Krüger, 2015).

The bill (Part 7, pp. 5-6) specifies that, for all quoted companies, the director's report for a financial year must state "the annual quantity of emissions in tonnes of carbon dioxide equivalent from activities for which the company is responsible including (a) the combustion of fuel; and (b) the operation of any facility." Moreover, the report must also state "the annual quantity of emissions in tonnes of carbon dioxide equivalent resulting from the purchase of electricity, heat, steam or cooling by the company for its own use." The law further stipulated that the report must also state "the methodologies used to calculate the information disclosed"; and "at least one ratio which expresses the quoted company's annual emissions in relation to a quantifiable factor associated with the company's activities."

In the context of our model, the introduction of this bill can be viewed as a shock to the oversight of UK firms' GHG emissions. This gives rise to two difference-in-difference strategies to identify the effect of changing θt on the equilibrium level of CSR; which are discussed in this and the next subsection, respectively.

Our first difference-in-difference approach draws from Krüger (2015) and turns on the fact that *The Companies Act (2013)* was implemented in the UK, but not in the 15 other European countries with companies listed on local stock exchanges. Our control group is thus size-, industry-, profitability-, and asset tangibility-matched firms from other European stock exchanges, including Ireland, Belgium, Denmark, France, Germany, Italy, Luxembourg, Netherlands, Norway, Sweden, Switzerland, Austria, Portugal, Spain, and Finland. Following Krüger (2015), we use 2011 as our intervention year, to account for the fact that even though *The Companies Act (2013)* was made publicly available in July 2012, firms in the UK were likely anticipating it as early as 2011 and taking actions accordingly.[16] We specify regressions of the following form:

$$\begin{aligned} CSR_{i,t} &= \beta_0 + \beta_1 \cdot Treat_i + \beta_2 \cdot After_t + \beta_3 \cdot Treat_i \times After_t \\ &\quad + \gamma' \cdot Control_{i,t} + \delta_t + \varphi_j + \varepsilon_{i,t}, \end{aligned} \tag{18}$$

where $CSR_{i,t}$ denotes the CSR score for firm i in year t and captures firms' engagement in socially responsible activities; $Treat_i$ is a dummy variable equal to one if firms are UK quoted firms, and to zero otherwise; $After_t$ is a dummy variable which equals one for years in the post-intervention period (including and after 2011), and zero for years in the pre-intervention period (before 2011); $Control_{i,t}$ represents a set of control variables which may affect firms' CSR; δ_t is a dummy for year t; φ_j is a

[16] As a robustness check (unreported), we also used 2012 as an intervention year, and obtained similar results.

dummy for industry j; and $\varepsilon_{i,t}$ is the error term. Our coefficient of interest is β_3, which captures the before-after difference in CSR between the treatment group (UK firms) and the control group (other European firms).

To construct our measure of CSR for firms from the UK and from the other European countries, we use data from the Thomas Reuters ASSETS4 database. Thomas Reuters provides ratings on environmental, social and governance (ESG) performance for over 7,000 public firms across the globe, with panel data going back to 2002. Specifically, Thomas Reuters first selected and grouped 178 ESG measures into 10 categories, such as emissions, environmental product innovation, human rights, *etc.*, and then aggregated them into three pillar scores - Environmental, Social, and Corporate Governance. The ESG score provided by Thomas Reuters is based on a firm's relative performance in environmental, social, and corporate governance activities and ranges from 1 to 100. Unlike other CSR databases which tend to use equal-weighted ratings, Thomson Reuters adopts data-driven category weights and applies percentile rank scoring methodology to ensure that the ESG scores are comparable across companies and industries. The Thomas Reuters ASSETS4 database provides total ESG scores as well as separate scores for each of the three pillars, for all of the firms in its sample. In our baseline model, we use firms' total ESG scores - over a 2005-2015 sample period - to measure firms' engagement in CSR activities,[17]

Using Compustat Global Annual Files for both UK firms and firms from the other 15 European countries listed above, we construct control variables to capture firm- and industry-level characteristics which may affect firms' decision to engage in CSR. These include *Firm Size* measured by firms' total assets; *Profitability* measured by return on assets (*ROA*); *Leverage* measured by total debt to total assets ratio; *Capital Expenditure* measured by firms' capital expenditure scaled by total assets; *R&D Intensity* measured by firms' R&D expenditure scaled by total assets; *Asset Tangibility* measured by firms' net property, plants and equipments scaled by total assets; *Financial Constraint* measured by firms' free cash flow scaled by total assets; and *Industry Competition* based on a Herfindahl index computed from annual sales. We provide definitions for all variables in Table 1.

We then merge these data with the data on CSR from the ASSETS4 database. We present summary statistics for these and other variables in Panel A of Table 2; and summary statistics about the distributions of ASSETS4 CSR scores[18] in the UK and the other European countries listed above in Panel B of Table 2. These distributions are quite similar across countries and in particular UK firms are akin to other European firms in that regard.

[17] As a robustness check (see discussion below) we also take advantage of the separate ESG scores for environment, society, and governance, to consider the impact of *The Companies Act (2013)* on firms' environmental score separately from its impact on their social and governance scores.

[18] For convenience, throughout the paper we use "ESG scores" and "CSR scores" interchangeably.

[Insert Table 1 here.]

[Insert Table 2 here.]

Basic Results. We begin by pooling all UK and EU firms and considering the difference-in-difference specification discussed above, and report our results in Table 3, where in all specifications standard errors are adjusted for within-firm clustering.

[Insert Table 3 here.]

Column (1) reports the baseline specification of the difference-in-difference with no additional controls. The coefficient estimate on $Treat \times After$ is -1.70 and significant at the 5% significance level. In column (2), we introduce firm and industry level controls: *Firm Size*, *ROA*, *Leverage*, *Capital Expenditure*, *R&D Intensity*, *Asset Tangibility*, *Financial Constraint*, and *Industry Competition* as control variables. The coefficient estimate on $Treat \times After$ is -2.35 and significant at the 1% significance level. Furthermore, the coefficient estimate on $After$ in both of these columns is positive and significant at the 1% level; and the sum of the coefficient estimates on $After$ and $Treat \times After$ is positive and can be verified to be significantly different from zero (unreported). Taken together, these results suggest that while firms in both the UK and other European countries increased their CSR activities over time, the UK firms increased their CSR activities by significantly *less* than their European counterparts due to *The Companies Act (2013)* and associated increase in oversight.

Columns (3) - (4) control for year and industry fixed effects, respectively. The coefficient estimates on $Treat \times After$ remain negative and significant at the 1% and 5% levels, respectively. Columns (5) and (6) further include country fixed effects and firm fixed effects, respectively. The magnitude of the coefficient estimate on $Treat \times After$ drops but the coefficient remains negative and significant, at the 5% and 10% levels, respectively.

Overall, the results in Table 3 identify a negative treatment effect of mandatory GHG emissions disclosure policy in the UK on CSR, leading UK firms to reduce their CSR activities. This evidence is consistent with Proposition 4 in our model, which stipulates that greater oversight ought to reduce firms' engagement in CSR.

Parallel Trends. Next, we consider the identifying assumption - i.e. the "parallel trends" assumption - behind the difference-in-difference framework; and examine whether there are similar trends in CSR during the pre-intervention period (2005-2010) for both treatment and control groups (Lemmon and Roberts, 2010). Graphically, the UK firms (treatment group) appear to have CSR trends that are

similar to those of the European firms (control group). Average CSR ratings for the treatment and control groups over the 2005-2015 sample period are depicted in Figure 4.

[Insert Figure 4 here.]

Consistent with the "parallel trends" assumption, the two lines representing the CSR scores for the treatment and control groups trend closely in parallel during the pre-intervention period (2005-2010), but start to diverge during the post-intervention period (2011-2015).

To show these results analytically, we re-run our baseline regression, but include year dummies as well as their interactions with the treatment group dummy; the idea being that the coefficient estimates on the interactions should be insignificant for years in the pre-intervention period but significant for years in the post-intervention period. We report the regression results in Table 4.

[Insert Table 4 here.]

Again, consistent with the "parallel trends" assumption, we observe statistically insignificant coefficient estimates on the interactions of treatment group and year dummies for the pre-intervention years, but negative and significant coefficient estimates on the interactions of treatment group and year dummies for the post-intervention years.

Matched Sample. Finally, we construct a matched sample of the treatment and control groups by using propensity score matching. Specifically, we use single nearest-neighbor propensity score without replacement within a specified caliper width.[19] We rely on both the descriptive statistics and prior literature to determine the matching covariates used in the matching procedures. First, the Pearson correlations presented in Table 5 shows large and significant correlations between firms' CSR, Firm Size, ROA, and Asset Tangibility for firms in our sample. Second, existing literature suggests that firm size, firm profitability, asset tangibility, and industry characteristics play a key role in determining firms' engagement in CSR (e.g. Ioannou, Li, and Serafeim, 2016; Krüger, 2015; Konar and Cohen, 2001). Accordingly, we use Firm Size, ROA, four digit SIC industry, and Asset Tangibility to match each UK-quoted firm with another firm from the other 15 European countries listed above. Panel A in Table 6 shows that there are 192 matched treatment-control pairs after the propensity score matching. Panel B suggests a good country representation across the matched sample, with no more than 19% of the sample coming from any one of the 15 European countries.

[Insert Table 6 here.]

[19] The specific caliper we use is 0.1 times the pooled standard deviation of the logit of the propensity score, which is argued to be the optimal caliper for matching (Rosenbaum and Robin, 1985).

We then apply a difference-in-difference approach again with the matched sample we constructed. We report our results in Table 7, where in all specifications standard errors are adjusted for within-firm clustering.

[Insert Table 7 here.]

The results from this matched sample are broadly consistent with the results from the pooled sample discussed above. In column (1), the coefficient estimate on $Treat \times After$ of -1.81 remains negative and significant at the 10% significance level. Similarly, in column (2) where we include *Firm Size*, *ROA*, *Leverage*, *Capital Expenditure*, *R&D Intensity*, *Asset Tangibility*, *Financial Constraint*, and *Industry Competition* as control variables, the coefficient estimate on $Treat \times After$ is -1.67 and significant at the 10% significance level. Columns (3) - (6) further control for year, industry, country, and firm fixed effects, respectively. Across all four of these columns, the coefficient estimate on $Treat \times After$ remains negative and significant - at the 5% significance level in columns (4) and (5) and at the 10% significance level in columns (3) and (6). Overall, the results in Table 7 provide further support for a negative effect of oversight on CSR activities in organizations.

5.2 The Carbon Disclosure Project

Our second difference-in-difference strategy exploits the fact that some firms in the UK had already publicly disclosed their carbon emissions prior to the passage of the Act. For these firms, the change in the reporting standards presumably had little effect. Our second approach uses these firms as a control group.

In order to examine UK-based firm variation in more detail, we obtained data from the Carbon Disclosure Project (CDP). CDP is a UK-registered charity which operates a global carbon disclosure system in which companies and cities voluntarily report data on environmental performance. These data are then analyzed and transformed into metrics that investors can use to make investment decisions. According to the project's website (`http://www.cdp.net`) the project has enrolled over 7,000 firms globally.

CDP uses a questionnaire to collect information on disclosure of GHG emissions from firms in both emerging and developed markets. Firms can choose to respond to CDP's request by marking their response status as either "Public" or "Private"; or they can choose not to respond, which yields a status of "NA". Public responses from firms indicate that these firms will disclose their GHG emissions to the general public; whereas private responses allow CDP to include that firm's data in broader regional and industry indices, but do not make the firm's identity known.

We merged data from the CDP and ASSETS4 data sets, and report summary statistics about ESG scores of CDP firms in Table 8 (Panel A). The distributions of ESG scores of the CDP firms ("Public" or "Private") are similar to those of UK and other European firms in the ASSETS4 more generally, albeit with smaller standard deviations. Unsurprisingly, "Public" firms have higher ESG scores on average than "Private"firms: firms with higher ESG scores may be more likely to be willing to make those scores public.

[Insert Table 8 here.]

We follow Krüger (2015) and construct treatment and control groups within the UK based on the information on firms' response status from CDP.[20] The control group consists of UK firms with response status as "Public" before *The Companies Act (2013)*, while UK firms with response status as "Private" or "NA" are included in the treatment group. The idea is that *The Companies Act (2013)* would have a very limited impact on those UK firms which have already signed up for the voluntary disclosure before 2011. The most affected UK firms would be the firms which chose not to disclose their GHG emissions before *The Companies Act (2013)*, but had to disclose their emissions thereafter. The findings from this alternative difference-in-difference strategy are presented in Table 8 (Panel B), in which we look strictly within the UK, comparing firms that were affected by *The Companies Act (2013)* to those that voluntarily disclosed prior to the passage of the act.

The coefficient estimate on the interaction term $Treat \times After$ is negative and statistically significant in all specifications, indicating a negative impact of *The Companies Act (2013)* on the CSR activities of firms that were not voluntarily disclosing their GHG emissions previously, and hence were forced to do so as a result of the new policy. In Columns (1) and (2), the coefficient estimates on $Treat \times After$ are negative and significant at the 1% significance level. The inclusion of year fixed effects in Columns (3) has no perceptible impact on the coefficient estimate, which remains negative and significant at the 1% significance level. In columns (4) and (5), the inclusions of industry fixed effects and firm fixed effects, respectively, cause the effect to decrease modestly, and the significance level of the estimate to increase to 10%.

Overall, the results in Table 8 identify a negative treatment effect of the mandatory GHG emissions disclosure policy *within* the UK on CSR, leading firms that were forced to disclose their GHG emissions as a result of *The Companies Act (2013)* to reduce their CSR activities. Thus, these results provide further evidence consistent with the key prediction of our model, namely that greater oversight ought to reduce firms' engagement in CSR.

[20] Grewal (2017) also use CDP to obtain emissions information for firms that disclosed voluntarily, and considers the impact of the 2012 mandatory GHG emissions policy in the UK on these firms' subsequent GHG emissions.

5.3 Robustness Checks

5.3.1 Oversight and Sub-components of CSR

As mentioned above, the total CSR scores are the sum of firms' performance in three different categories: environment, society, and governance. Since the variation in oversight in this empirical analysis has to do GHG emissions, we would expect this variation to affect CSR along the environmental dimension disproportionately more than along the social and governance dimensions. To check this prediction, we separated the CSR scores in the environment category from the CSR scores in the social and governance categories, and explored the differential impacts of oversight on these scores. More specifically, we repeated the regressions from Tables 3, 7, and 8, but instead of using the total ESG score as dependent variable, we used environmental CSR (the ESG score in the environment category alone), and non-environmental CSR (the sum of ESG scores for both social and governance categories) separately as dependent variables. We report the results in Table 9, where in all specifications standard errors are adjusted for within-firm clustering.

[Insert Table 9 here.]

Across all columns we control for firm and industry level characteristics as well as year and firm fixed effects. Specifically, columns (1) and (2) present the results based on the UK-EU pooled sample, in which the dependent variables are the CSR scores for the environment category alone, and the CSR scores for both social and governance categories, respectively. In column (1), the coefficient estimate on $Treat \times After$ is -1.78 and is significant at the 10% significance level. In contrast, the coefficient estimate on the same interaction term $Treat \times After$ is insignificant in column (2). These results suggest that the implementation of the mandatory GHG emissions disclosure policy in the UK had a negative and statistically significant impact on UK firms' engagement in CSR activities connected to the environment; but we cannot say that this policy had an impact on these firms' CSR activities along social and/or governance dimensions. Columns (3) and (4) report the results based on the UK-EU matched sample. Again we find that when the dependent variable is the CSR score for the environment category alone, the coefficient of $Treat \times After$ is negative and significant, while it is insignificant when the dependent variable is the CSR score for both social and governance categories. We find similar results in columns (5) and (6) based on the within-UK sample as well.

All in all, the results in Table 9 suggest that - consistent with our model - environmental oversight has a negative impact on firms' CSR activities related to environmental issues, but less so on firms' CSR activities related to social and governance issues.

5.3.2 Confounding Policies

One possible concern with the baseline analysis may be that the existence of confounding regulations in the other 15 European countries in our control group could preclude a proper identification of the impact of *The Companies Act (2013)* in UK on CSR. To address this issue, we first searched environmental regulations and policies in the other 15 European countries included in our control group,[21] and found four potentially relevant cases:

1) France: The Grenelle II Act was passed in 2012, which requires large firms to disclose their CSR information in their annual report. 2) Ireland: The carbon tax in Ireland started to cover almost all the polluting firms instead of only large emitters since 2012. 3) Norway: Legislation was passed on requiring large firms to disclose general CSR as well as GHG emissions around 2012. 4) Switzerland. The Swiss government implemented a regulation scheme in 2013 which provided explicit incentives for firms to reduce GHG emissions.

Having identified these potentially confounding regulations, we took out from our sample the firms from France, Ireland, Norway, and Switzerland. We then repeated our baseline regressions from Tables 3 and 7, and we report the results in Table 10.

[Insert Table 10 here.]

The first three columns present the results based on the UK-EU pooled sample, having taken out firms from the four countries mentioned above. In column (1), the coefficient estimate on $Treat \times After$ is -2.48 and significant at the 1% significance level. Columns (2) and (3) further control for year and industry fixed effects, country fixed effects, and firm fixed effects, respectively. The coefficient estimates on $Treat \times After$ remain negative and significant. Columns (4) - (6) report the results from the same exercise as columns (1) - (3), but using the UK-EU matched sample. The coefficient estimates on $Treat \times After$ remain negative and significant in all three columns.

Thus, the results presented in Table 10 suggest that the negative impact of the oversight (through mandatory GHG emission disclosure) on firms' engagement in CSR activities is robust to removing European firms with confounding policies from our sample.

5.3.3 Oversight and CSR: Sample with Non-EU ETS Firms

Another possible concern comes from the fact that firms in our sample may be covered by European Union Emissions Trading Scheme (EU ETS) and hence may be required to report their emissions to

[21] We mainly obtained information on environmental regulations from the CSR disclosure efforts by national governments and stock exchanges from Harvard Kennedy School. http://iri.hks.harvard.edu/

the EU ETS registry as well as financially incentivized to reduce their emissions through the cap-and-trade system under EU ETS. To exclude the potential impact of these firms' membership with EU ETS on their engagement in CSR, we re-ran the baseline model regressions, focusing on non-EU ETS firms only. To construct the non-EU ETS sample, we used firms' registration information provided by EU ETS registry and manually matched the names of the account holders under EU ETS registry with those of the firms in the UK-EU matched sample. We report the results in Table 11.

[Insert Table 11 here.]

As is shown in this table, the coefficient estimate on $Treat \times After$ is negative and significant at the 5% significance level in most specifications - columns (1) to (5) - and still negative and significant at the 10% level in column (6). These results suggest that a negative effect of oversight on CSR activities continues to hold when we take firms registered with the EU ETS out of our sample and focus on non-EU ETS firms only; and mitigates concerns that our baseline results might be driven by policy changes in the EU ETS.

5.3.4 CSR Data from Sustainalytics

One may also worry that our main empirical result in the baseline analysis - the negative effect of oversight on CSR - may be driven by the specifics of the ASSETS4 database used in our analysis so far. We addressed this point by repeating the regressions from Tables 3, 7, and 8 with a different database - Sustainalytics - and checking whether our main results continue to hold.

Sustainalytics is a company that rates the sustainability of listed companies based on their CSR performance, and provides CSR and Corporate Governance research and ratings globally, from 76 countries over the 2009 - 2016 time period. Sustainalytics measures CSR along the usual environmental, social, and governance categories, and we aggregated the scores from these three dimensions to get overall ESG scores - our measure of CSR - for firms in the UK and in the 15 other European countries we consider, during the period 2009 - 2015.

We re-ran the regressions based on the three types of samples we used in the baseline analysis - UK-EU pooled sample, UK-EU matched sample, and UK sample - and report the results in Table 12, where in all specifications standard errors are adjusted for within-firm clustering.

[Insert Table 12 here.]

The results obtained using the Sustainalytics database are very similar to our baseline results obtained using the ASSETS4 database. In all three samples, the coefficient estimates on $Treat \times After$

are negative and significant at the 1% or the 5% significance level in all specifications; except when we introduce both year and firm fixed effects, in which case the estimate is significant at the 10% significance level. Indeed, these results from are consistent with a negative effect of oversight on CSR activities in organizations; and mitigate the concern that our baseline results might be specific to the ASSETS4 database.

5.3.5 CSR Data from Truvalue Labs

One final concern may come from the fact that CSR data is usually self-reported and hence may not accurately capture firms' engagement in CSR activities. To address this issue, we re-ran our baseline regression again, but this time using data from Truvalue Labs. Unlike the ASSETS4 and Sustainalytics databases mentioned above, Truvalue Labs provides CSR scores based on analyzing thousands of news articles from a variety of sources.[22] Specifically, Truvalue Labs uses artificial intelligence, machine learning and natural language processing in eleven languages to analyze news articles - from industry experts and publications, think tanks, media sources, and professional blogs - related to firms' environmental, social, and governance impacts.

Truvalue Labs determines firms' ESG scores based on 26 categories as defined by Sustainability Accounting Standards Board (SASB) and provides a continuously-updated "insight scores"based on all 26 categories, as well as a "materiality scores"based on the most relevant categories as defined by SASB. We primarily use the more general insight score as our measure of firms' ESG performance, but similar results can be obtained using the materiality score instead. We report our results in Table 13, where in all specifications standard errors are adjusted for within-firm clustering.

[Insert Table 13 here.]

These results are similar to our baseline results obtained with the ASSETS4 database: the coefficient estimates on $Treat \times After$ are negative and significant at the 1% or the 5% significance level in almost all specifications in Table 13. These results suggest that a negative impact of oversight on CSR activities continues to hold when we use news-based CSR data instead of self-reported CSR data.

5.4 Evidence from Variation in Outsourcing

In this section, we provide a further evidence of the negative relationship between oversight and CSR predicted by the model, based on a different source of variation in oversight. The key to our identification strategy here is that companies and industries that have experienced more pronounced *foreign*

[22] According to Truvalue Labs, in 2018 there were more than 250,000 unique articles focusing on firms' sustainability issues across 8,000 companies globally.

outsourcing of intermediate goods production will be inherently more difficult to oversee/monitor from a regulatory standpoint; because domestic regulators usually have no jurisdiction abroad, and may find it difficult if not impossible to observe, let alone verify, actions taken and decisions made in a foreign country. Thus, by identifying changes in the degree of outsourcing, we can trace out the relation between the regulators' ability to monitor firms' regulatory compliance and examine its impact on CSR activities.

This part of our empirical analysis is based on US data. To construct our measure of CSR, we use the Kinder, Lydenberg and Domini (KLD) ratings of corporate responsibility. KLD's coverage begins in 1991 and our analysis uses information from 2005 to 2016. KLD ratings have seven dimensions: community activities, diversity, employee relations, environmental policies, human rights, corporate governance, and products' social benefits. However, most of the human rights scores are missing in the database, and the dimension of corporate governance does not usually reflect CSR (Servaes and Tamayo, 2013). Hence, we focus on the following five dimensions: community activities, diversity, employee relations, environmental policies, and products' social benefits. For each firm, KLD reports the number of strengths and concerns across these five dimensions. We obtain a CSR score for each firm by adding the total number of CSR strengths and subtracting the total number of CSR concerns across these five dimensions.

To proxy for monitoring efficiency, we use industry-level variation in foreign outsourcing by US firms. We collect data from both the US Input-Output (I-O) tables and the Census of Manufactures to construct the measure for industry-level foreign outsourcing. In particular, the Bureau of Economic Analysis (BEA) constructs I-O "make" and "use" tables based on the economic censuses conducted every five years by the Bureau of the Census. In the *make table*, each row corresponds to an industry, and the columns display the commodities that this industry produces. In the *use table*, each row corresponds to a commodity, and the columns displays the industries that use this commodity. The BEA also provides import matrices that impute the value of imports for each industry. .

We construct our sample using data from years 2007 and 2012, and based on 405 industry categories, as follows. First, we utilize the I-O *use table* to obtain, for each industry i, the dollar amount (in millions of dollars) of intermediate input purchases from each supplier industry j. Second, we use the BEA's import matrices to obtain the dollar amount of imported commodities within each supplier industry j. Finally, we calculate our measure of foreign outsourcing for industry i in year t as the ratio of the sum of imports across supplier industries j over the sum of input purchases - by industry

i - across supplier industries j (Feenstra and Hanson, 1996):

$$Foreign\ Outsourcing_{i,t} = \frac{\sum_j Imported\ Input\ Purchases\ of\ Good_{i,j,t}}{\sum_j Total\ Input\ Purchases\ of\ Good_{i,j,t}},$$

where $Imported\ Input\ Purchases\ of\ Good_{i,j,t}$ denotes the imputed imported value of intermediate inputs from industry j supplying industry i in year t; and $Total\ Input\ Purchases\ of\ Good_{i,j,t}$ represents the total purchases of intermediate inputs from supplier industry j by industry i in year t.

Note that the data based on these 405 industries is census data and therefore only available every five years. In the aforementioned sample - US Sample I - we mainly rely on census data in years 2007 and 2012 to construct our sample and compute the measure for industry-level foreign outsourcing.

The BEA also provides data on the use of imported commodities by 71 industries during the period 1997 - 2017; while the Census of Manufactures provides the total materials costs for industries from 2005 - 2016. Hence, combining these two databases, we can construct a second sample - US sample II - based on 71 industries during the period 2005 - 2016. To construct the foreign outsourcing ratio for industry i in year t in this sample, we take the ratio of the sum of imports across supplier industries j (as in US Sample I), over industry i's total purchases (in millions of dollars) of non-energy materials:

$$Foreign\ Outsourcing_{i,t} = \frac{\sum_j Imported\ Input\ Purchases\ of\ Good_{i,j,t}}{Total\ Non-Energy\ Material\ Cost_{i,t}},$$

where as before $Imported\ Input\ Purchases\ of\ Good_{i,j,t}$ denotes the imputed imported value of intermediate inputs from industry j supplying industry i in year t; and *Total Non-Energy Material* $Cost_{i,t}$ represents the total purchases (in millions of dollars) of non-energy materials by industry i in year t.

Note that in both US samples I and II, we use $Foreign\ Outsourcing_{i,t}$ to measure to what extent an industry relies on intermediate inputs from its supplier industries which are imported from outside the US. As argued at the beginning of this section, the higher the degree of foreign outsourcing for an industry, the more difficult for domestic regulators to monitor this industry; and hence we can use changes in industry-level foreign outsourcing to capture changes in regulators' ability to monitor firms.

We specify the following empirical relationship:

$$CSR_{i,j,t} = \beta_0 + \beta_1 \cdot Foreign\ Outsourcing_{j,t} + \gamma' \cdot Control_{i,j,t} + \delta_t + \varphi_j + \varepsilon_{i,t}, \tag{19}$$

where $CSR_{i,t}$ denotes the CSR rating for firm i in industry j and year t, which captures firms' engagement in social responsibility activities; $Foreign\ Outsourcing_{j,t}$ represents the foreign outsourcing level for industry j in year t; $Control_{i,j,t}$ denotes a set of firm and industry level control variables

which may affect firms' CSR; δ_t is year dummies; φ_j is industry dummies; and $\varepsilon_{i,t}$ is the error term. Our coefficient of interest is β_1, which captures the impact of industry-level foreign outsourcing on firms' corporate social responsibility, and which we expect should be positive and significant.

[Insert Table 14 here.]

Panel A of Table 14 provides summary statistics of firm's net CSR scores in the KLD database for both US Sample I and US Sample II. Panel B of Table 14 presents the regression results. Columns (1) - (3) refer to the results based on US Sample I. Column (1) investigates the impact of industry-level foreign outsourcing on CSR with no additional controls. The coefficient estimate on *Foreign Outsourcing* is 0.641 and is significant at the 5% significance level. Column (2) includes firm and industry level characteristics as controls into the model specification: *Firm Size, ROA, Leverage, Capital Expenditure, Market-to-Book ratio, Asset Tangibility, and Industry Competition.* The coefficient estimate on *Foreign Outsourcing* is 0.97 and is significant at the 1% significance level. Column (3) further controls for year and industry fixed effects, with a coefficient estimate on *Foreign Outsourcing* of 1.17, which is significant at the 10% significance level.

Columns (4) - (6) repeat the same specifications, respectively, as columns (1) - (3), but with US Sample II. The results are once again very similar: in all three columns, the coefficient estimate on *Foreign Outsourcing* is positive and significant at the 5% significance level.

Overall, the results of Table 14 provide support for a positive relationship between industry-level foreign outsourcing and CSR. To the extent that industries with more foreign outsourcing are less likely to be efficiently monitored by regulators, these results are consistent with our model's prediction that less oversight leads to more CSR.

6 *How* Does Oversight Reduce CSR?

In Section 5 we have provided, in a myriad of empirical tests and robustness checks, evidence of negative impact of oversight on CSR. But how, and why, does regulatory monitoring reduce firms' engagement in CSR activities? The model presented at the beginning of this paper provides an answer to this question. It suggests that lower oversight, by loosening regulation and raising the level of socially harmful actions (say pollution) that firms *could choose*, reduces socially responsible workers' reservation utility, and hence increases the appeal of working for the firm and engaging in CSR activities (through over-compliance) relative to the their outside option. This in turn creates an opportunity for firms to extract from them the rents thus created, through lower wages.

In this section, we investigate this channel empirically, and present evidence of interactions between oversight, employment appeal, wages, and CSR that are consistent with the mechanisms predicted by our model. We then briefly discuss two other channels through which oversight could affect CSR.

6.1 Oversight, Employment appeal, CSR and Wages

As mentioned above, in our model lower oversight, by giving firms the option to increase the level of socially harmful actions, increases the appeal of working for responsible firms that choose instead not to take advantage of this option and to engage in CSR through over-compliance. Three key empirical implications thus emerge from this: 1) We should expect a positive relationship between CSR and employee perception and retention. 2) The extra appeal of socially responsible firms to responsible employees should make them willing to accept lower wages in order to be able to work in these firms, and hence we should observe a negative association between CSR and wages. And 3), because this extra appeal is the result of lower oversight to begin with, we should expect less oversight to lead to lower wages. We consider each of these implications in turn.

CSR and employee perception/retention. A positive association between CSR on the one hand, and employee perception and retention on the other, has been documented in prior work. Turban and Greening (1996), for example, find that CSR ratings are positively associated with firms' reputations and appeal as employers. Similarly Albinger and Freeman (2000) document that employer attractiveness is higher for firms with higher CSR ratings. Greening and Turban (2000) provide experimental evidence that prospective employees are more likely to seek employment from firms engaging in CSR activities.

Regarding retention, Carnahan *et al.* (2017) use data from large law firms to show that higher levels of CSR are associated with lower turnover to startup law firms; and Flammer and Kacperczyk (2017) find that CSR helps reduce employee departures to rival firms. Last but not least, Bode *et al.* (2015) use data from a global management consulting company, and find that participation in corporate social initiatives within the company - which interestingly require participating employees to accept a significant reduction in pay (see next paragraph) - is positively associated with employee retention.

CSR and Wages. The relationship between CSR and wages has also been documented in earlier research. In their discussion on the subject, for example, Bettignies and Robinson (2018) point to Frank's (2004) survey evidence from Cornell graduates documenting a compensating wage differential for CSR; to a 24% to 38% pay differential between firms with a strong reputation for CSR and firms

with weak reputation (Nyborg and Zhang, 2013); and to recent experimental work by Burbano (2016) identifying a negative causal effect of receiving information about an employer's CSR on prospective workers' wage requirements for a job. In this latter work, Burbano (2016) finds a 44% decrease in wage bids submitted by workers after learning about the employer's CSR activities.

We complement these results with a simple analysis of our own, in which we use firm-level wage data from Compustat Global and the CSR data from ASSETS4 to examine the relationship between employee wages and CSR. We report the results in Table 15.

[Insert Table 15 here.]

The dependent variable in Table 15 is the natural logarithm of one plus the average employee wage in firm i in year t, while the main independent variable is the CSR ratings in firm i in year t. Columns (1) and (2) present the results based on the UK-EU pooled sample, while columns (3) and (4) and columns (5) and (6) show the results based on the UK-EU matched sample and UK sample respectively. To take into account the other determinants of employee wages in addition to firms' engagement in CSR activities, we include a battery of control variables in the model specifications across columns (1) - (6). First, we include *Firm Size*, *ROA*, *Leverage*, and *Financial Constraint* to control for the effects of firm size, firm performance, operational complexity, and firms' cash position, respectively, on employee wages (Faleye, Reis, and Venkateswaran, 2013). Second, recognizing the challenges associated with wage regressions using firm-level data, we include *Capital Expenditure*, *R&D Intensity*, and *Asset Tangibility* as controls in the regression, in an attempt to account - admittedly imperfectly - for the impact of employees' knowledge and skills on their wages. Finally, we also control for industry competition as an additional proxy for employees' bargaining power in wage negotiations; the idea being that in less competitive (i.e. more concentrated) industries worker have fewer outside options and hence lower bargaining power in negotiations.

The results from columns (1) - (4), based on both UK-EU pooled sample and UK-EU matched sample show coefficient estimates on CSR that are negative and significant at either the 1% or the 5% significance level. While the results from columns (5) and (6), based on the within-UK sample are not significant,[23] overall the results from Table 15 do provide some support for a negative relationship between CSR and employee wages, which is consistent with the prior empirical literature discussed above, and with our model prediction.

Oversight and Wages. To investigate the relationship between oversight and wages, we first

[23] We also re-ran the same regressions using the within-UK sample but a different CSR database - Sustainalytics; and found a negative but insignificant impact of firms' CSR on wages. We conjecture that these insignificant results based on the within-UK sample may come from the relatively small size of the sample used in these regressions.

consider the same difference-in-difference approach we used in the baseline regressions in Section 5, based on *The Companies Act (2013)* in the UK, but with wages as a dependent variable instead of CSR. We present the results in Table 16.

[Insert Table 16 here.]

The dependent variable is the natural logarithm of one plus the average employee wage in firm i in year t. As mentioned above these firm-level wage data come from Compustat Global. The key coefficient of interest is the $Treat \times After$ coefficient, which captures the treatment effect of oversight on average employee wages. Columns (1) - (2), (3) - (4), and (5) - (6) present the results based on the EU-UK pooled sample, on the EU-UK matched sample, and on the within-UK sample, respectively. The coefficient estimate on $Treat \times After$ is positive and significant at the 1% significance level in columns (1) - (2), and at the 10% significance level in columns (3) - (6), providing overall support for a positive impact of oversight on wages, as predicted by our model.

Importantly, in our model CSR and wages are *jointly determined* - in equilibrium - as a result of oversight. In order to specifically take into account the joint impact of oversight on CSR and wages, we also use the seemingly-unrelated-regression (SUR) estimation method; which involves specifying a system of two equations with wages and CSR as dependent variables, and estimating these equations simultaneously. This allows us to take into account the potential impact of cross-equation error covariance and hence to generate more efficient coefficient estimates than the single equation estimation discussed above. We report the results in Table 17.

[Insert Table 17 here.]

Panels A, B and C present the results based on the EU-UK pooled sample, the EU-UK matched sample, and the within-UK sample, respectively. In each panel, columns (1) and (2) presents the results with CSR and with the natural logarithm of one plus average employee wage as dependent variables, respectively, controlling for the impacts of firm and industry level characteristics. Columns (3) and (4) report the results when year and industry fixed effects are included in the regressions. And columns (5) and (6) show the results when further controlling for year and firm fixed effects.

In Panel A, as expected coefficient estimates on $Treat \times After$ are negative in the "CSR" columns (1), (3), and (5); and positive in the "employee wage" columns (2), (4), and (6). All of these estimates are significant at the 1% significance level. We observe the same patterns in both Panel B and Panel C. Thus, consistent with our model these empirical results suggest a positive impact of oversight on employee wages, a relationship which in fact seems even stronger when cross-equation error correlations are taken into account using SUR estimation.

6.2 Other Channels

In the preceding section, we presented evidence of interactions between oversight, employee perception/retention, wages and CSR that are consistent with the "rent extraction" prediction of our model. But oversight could affect CSR through other channels.

Social pressure for firms to behave responsibly, for example, has increased dramatically over the last 15-20 years (Flammer, 2013), and could be claimed to have had a positive impact on CSR. Indeed our empirical results from Section 5 suggest that all firms - in both control and treatment groups - have increased their engagement in CSR over the sample period.[24] One could then argue that the increased oversight associated with *The Companies Act (2013)* may lead to an additional increase in social pressure for firms to behave responsibly, and in turn to a further rise in CSR activities.

Alternatively, one could argue that the mandatory GHG emissions disclosure policy in the UK, by making it easier to access information about firms' emissions, may reduce activists' marginal cost of campaigning for more responsible corporate behavior and lead to more active campaigning,[25] with firms engaging in more CSR as a result.

Both of these possible channels imply a positive relationship between oversight and CSR, which at first sight may appear inconsistent with the empirical evidence we presented in Section 5. We do not necessarily view these alternative channels as substitutes for the "rent extraction" mechanism we examined in this paper, and in fact they may well be complementary to it and indeed co-exist with it. Empirically, their positive impact on CSR may simply be more than offset by the stronger "first-order" negative effect of the "rent extraction" mechanism brought to light by our model, generating the evidence we observed.

7 Conclusion

This paper develops a model in which 1) purpose-driven firms emerge as an optimal organizational form even for self-interested, profit-maximizing entrepreneurs; and 2) CSR arises endogenously as a response to imperfect oversight. In a nutshell, purpose-driven organizations allow the entrepreneur to create rents for responsible workers by allowing these employees to reduce the negative externalities that would be generated without them, and to extract these rents through lower wages.

[24] In Tables 3, 7, and 8 the coefficient estimates on $After$ are positive and significant; and the sum of the coefficient estimates on $After$ and $Treat \times After$ is positive and significant (unreported) in the EU-UK pooled sample and the EU-UK matched sample (though not in the within-UK sample).

[25] For example, see Baron (2001), Baron and Diermeier (2007), or Bonardi *et al.* (2020) for models of strategic activism in which the activist exerts some kind of campaign effort which would rise if the marginal cost of providing this effort decreased.

But through this rent extraction the entrepreneur internalizes the pro-social preferences of her responsible workers, and in turn this is precisely what leads this "vicariously responsible" entrepreneur to engage in CSR activities, provided that regulatory oversight is poor enough and accordingly regulation loose enough to make these endeavors worthwhile.

The main empirical test of our model comes from *The Companies Act (2013)*, which required all quoted UK firms to report their GHG emissions in their annual reports. Because this Act did not affect firms in other European countries, it provides a unique setting for our empirical analysis. After the introduction of the mandatory disclosure policy, UK firms on average have lower CSR ratings compared to firms from other European countries. We argue that the mandatory disclosure policy increased oversight in the UK, which in turn lead to lower CSR activities in equilibrium among UK firms.

We find additional support for our model using a sample of US data. In that part of our analysis, we use increases in industry-level foreign outsourcing to capture reductions in regulators' ability to monitor firms. We identify a positive relationship between industry-level foreign outsourcing and firms' CSR; again consistent with the prediction of our model. We also explore empirically the channels through which regulatory oversight may affect CSR; and in particular the interactions between oversight, employee wages and CSR; and present evidence consistent with the empirical implications of our theoretical framework.

Taken together, these findings offer two fresh perspectives on Milton Friedman's admonitions against the social responsibility of business. First, when (some) workers are socially responsible, it is precisely the profit-maximization by a self-interested entrepreneur advocated by Friedman, and the rent extraction that it involves, that effectively transfers pro-social preferences onto the entrepreneur and in turn leads to social improvements.[26] Second, our results suggest that CSR emerges when demand for good corporate behavior cannot be efficiently provided by government because the technology it possesses for monitoring corporate behavior is weak. In such a world, CSR emerges precisely as Benabou and Tirole (2010) envision, "...as an alternative response to market and distributive failures..." As the world becomes increasingly globalized and technology continues to stay in front of regulation, it is easy imagine that the relative efficiency of CSR will continue to make it an important part of corporate strategy going forward. Our paper suggests that the emergence of CSR as a central element of corporate strategy is not a rebuke to Friedman's admonition. Instead, when the rules of the game are poorly enforced, it can arise when firms behave exactly as Friedman suggested they should.

[26] Holmström (2020) also made this point when he argued that profit maximization in an agency framework involves joint-maximization and hence *de facto* takes into account the preferences of both principal and agent.

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Table 1: Variable Definitions

This table presents the definitions for the variables used in our empirical analysis. All variables are measured annually at the firm level, except for foreign outsourcing and industry competition which are measured at the industry level.

Variables	Definitions	Sources
CSR	The sum of a firm's total ESG score from three dimensions: environment, society, and governance.	ASSETS4; Sustainalytics
CSR-Env	A firm's pillar score in environmental performance.	ASSETS4
CSR-Nonenv	The sum of a firm's pillar scores in social and governance performance.	ASSETS4
CSR (US)	The total number of CSR strengths subtracting the total number of CSR concerns across the following five dimensions: community activities, diversity, employee relations, environmental policies, and products' social benefit.	KLD database
Foreign Outsourcing	The share of the total imported inputs purchases by industry i of the total intermediate input purchases by industry i in year t.	Bureau of Economic Analysis Input/Output Tables; Census of Manufactures
Firm Size	Natural logarithm of one plus a firm's total assets, measured at the end of fiscal year.	Compustat Global (UK/EU); Compustat (for US firms)
ROA	Operating income before depreciation divided by book value of total assets, measured at the end of fiscal year.	Compustat Global (UK/EU); Compustat (for US firms)
Leverage	Book value of debt divided by book value of total assets measured at the end of fiscal year.	Compustat Global (UK/EU); Compustat (for US firms)
Capital Expenditure	A firm's capital expenditure scaled by its total assets, measured at the end of fiscal year.	Compustat Global (UK/EU); Compustat (for US firms)
R&D Expenditure	A firm's R&D expenditure scaled by its total assets, measured at the end of fiscal year.	Compustat Global (UK/EU); Compustat (for US firms)
Asset Tangibility	A firm's net property, plants and equipment scaled by its total assets, measured at the end of fiscal year	Compustat Global (UK/EU); Compustat (for US firms)
Financial Constraint	A firm's earnings before depreciation and amortization less the change in working capital less capital expenditure, scaled by its toal assets, measured at the end of fiscal year.	Compustat Global (UK/EU); Compustat (for US firms)
Market-to-Book	Market value of equity plus book value of assets minus book value of equity minus balance sheet deferred taxes divided by book value of assets, measured at the end of fiscal year.	Compustat Global (UK/EU); Compustat (for US firms)
Industry Competition	One minus the HHI based on four-digit SIC industries.	Compustat Global (UK/EU); Compustat (for US firms)
Wages	Natural logarithm of one plus average employee wages in firm i in year t, measured at the end of fiscal year.	Compustat Global (UK/EU)

Table 2: Summary Statistics

In Panel A of this table we report summary statistics of all the variables in our UK/EU sample. Panel B presents summary statistics of CSR in Thomas Reuters ASSETS4 for firms in the UK and the 15 other European countries during the period 2005 - 2015. Variable definitions are provided in Table 1.

Panel A

Variables	10% Pctile	Mean	Median	90% Pctile	Std. Dev.	Firm-Yrs
CSR	34.00	56.19	56.92	77.27	16.23	7329
CSR-Env	31.42	60.02	61.18	87.35	20.76	7329
CSR-Nonenv	62.38	107.83	108.69	151.41	33.40	7329
Firm Size	6.60	8.90	8.67	11.48	1.92	7328
ROA	0.02	0.12	0.11	0.22	0.09	7292
Leverage	0.03	0.26	0.24	0.50	0.17	6944
Capital Expenditure	0.01	0.05	0.04	0.1040	0.04	5772
R&D Intensity	0	0.01	0	0.04	0.03	7328
Asset Tangibility	0.01	0.46	0.36	1.02	0.40	6893
Financial Constraint	-0.06	0.10	0.07	0.24	0.26	5642
Industry Competition	0	0.58	0.64	1	0.34	7329

Panel B

Country	Mean	Median	Std. Dev.	Min	Max	Firm-Yrs
Austria	50.84	50.08	12.64	22.11	83.23	170
Belgium	50.05	51.29	16.51	17.14	84.57	260
Denmark	51.60	52.69	15.73	15.44	82.38	225
Finland	55.86	56.52	13.84	21.68	86.74	221
France	62.87	63.98	14.40	23.92	94.33	780
Germany	59.07	60.36	16.65	15.44	95.34	736
Ireland	47.93	45.70	14.50	12.97	84.37	216
Italy	53.30	53.30	18.60	14.36	93.17	446
Luxembourg	53.54	53.10	15.75	15.76	85.63	79
Netherlands	59.47	60.66	16.45	16.09	93.91	334
Norway	56.63	57.59	16.05	18.63	87.7	150
Portugal	59.86	63.88	15.69	20.98	82.46	119
Spain	62.29	64.69	15.88	7.76	92.62	477
Sweden	57.27	58.34	14.27	21.41	86.87	422
Switzerland	53.34	53.06	18.87	12.13	96.17	624
United Kingdom	54.44	54.70	14.79	9.87	94.64	2,070
Total	56.19	56.92	16.23	7.76	96.17	7,329

Table 3: Oversight and CSR: UK-EU Pooled Sample

This table presents coefficients estimates of regressions which examine the effect of governments' ability to monitor firms' compliance on firms' engagement in CSR. We use the introduction of the mandatory disclosure of greenhouse gas emissions to capture the exogenous change in governments' ability to monitor firms. We construct a UK-EU pooled sample by pooling UK firms with firms from the other 15 European countries. The dependent variable is CSR for firm i in year t. "Treat" is a dummy variable that takes on the value one for UK-listed firms, zero for all EU firms in the data. "After" is a dummy for before or after the introduction of the 2013 Companies Act. "Treat × After" is the interaction term that provides the difference in difference estimate. Specifically, column (1) presents the results showing the impact of oversight on CSR. Column (2) includes firm and industry level characteristics. Columns (3) - (6) further control for year, industry, country, and firm fixed effects respectively. The sample period is from 2005-2015. All variables are defined in Table 1. The t-statistics reported in parentheses below the coefficient estimates are based on standard errors adjusted for within-firm clustering. Significance at the 10%, 5%, and 1% level is indicated by *,**, ***, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Treat	-1.65	5.55***	5.50***	4.50***	12.97***	
	(1.050)	(1.045)	(1.051)	(1.150)	(2.290)	
After	3.26***	3.48***				
	(0.458)	(0.501)				
$Treat \times After$	-1.70**	-2.35***	-2.39***	-2.18**	-2.15**	-1.57*
	(0.860)	(0.888)	(0.889)	(0.864)	(0.856)	(0.883)
Firm Size		5.14***	5.14***	5.55***	6.53***	2.36***
		(0.299)	(0.300)	(0.330)	(0.351)	(0.676)
ROA		13.88***	14.75***	7.89*	11.98***	3.12
		(4.641)	(4.706)	(4.416)	(4.189)	(4.394)
Leverage		-5.89**	-5.87**	-4.01	-7.23***	-0.03
		(2.511)	(2.521)	(2.696)	(2.677)	(2.257)
Capital Expenditure		-16.91*	-13.45	-1.58	-0.41	15.74**
		(8.744)	(8.860)	(10.308)	(9.902)	(7.084)
R&D Intensity		20.57	20.07	36.59*	35.02**	-2.20
		(14.337)	(14.350)	(19.420)	(17.449)	(15.237)
Asset Tangibility		3.00***	2.80**	3.41**	3.30**	-0.62
		(1.161)	(1.169)	(1.582)	(1.463)	(1.754)
Financial Constraint		-0.91	-0.62	-0.54	-0.19	0.55
		(0.706)	(0.727)	(0.737)	(0.739)	(0.623)
Industry Competition		0.19	0.02	-2.13	-1.83	-0.64
		(1.483)	(1.487)	(1.614)	(1.616)	(1.400)
Year FE	No	No	Yes	Yes	Yes	Yes
Industry FE	No	No	No	Yes	Yes	No
Country FE	No	No	No	No	Yes	No
Firm FE	No	No	No	No	No	Yes
R-squared	0.012	0.254	0.264	0.484	0.520	0.805
Clusters	1,024	780	780	780	780	780
Observations	7,329	5,549	5,549	5,549	5,549	5,549

Table 4: Difference-in-Difference Analysis for CSR Dynamics

This table reports regression estimates of the CSR dynamics of treatment and control firms surrounding the mandatory regulation in UK in 2011. The dependent variable is CSR for firm i in year t. The standard errors are adjusted for within-firm clustering. Significance at the 10%, 5%, and 1% level is indicated by *,**, ***, respectively.

Variables	(1)	Variables	(1) Continued
Treat	14.32***	$Treat \times Regulation(t+1)$	-3.100*
	(2.539)		(1.699)
Regulation (t-5)	-1.01*	$Treat \times Regulation(t+2)$	-2.870*
	(0.660)		(1.709)
Regulation (t-4)	0.230	$Treat \times Regulation(t+3)$	-4.140**
	(0.786)		(1.757)
Regulation (t-3)	2.330***	$Treat \times Regulation(t+4)$	-3.840***
	(0.811)		(1.765)
Regulation (t-2)	3.230***	Firm Size	6.510***
	(0.835)		(0.348)
Regulation (t-1)	5.220***	ROA	12.33***
	(0.827)		(3.757)
Regulation (t)	5.370***	Leverage	-5.850**
	(0.886)		(2.285)
Regulation (t+1)	5.370***	Capital Expenditure	3.49
	(0.848)		(9.397)
Regulation (t+2)	5.800***	R&D Intensity	3.49
	(0.864)		(17.378)
Regulation (t+3)	5.740***	Asset Tangibility	3.15**
	(0.896)		(1.461)
Regulation (t+4)	8.110***	Financial Constraint	-0.270
	(0.899)		(0.732)
$Treat \times Regulation(t-5)$	1.220	Industry Competition	-1.870
	(1.264)		(21.611)
$Treat \times Regulation(t-4)$	-1.780	Industry Fixed Effects	Yes
	(1.5310)		
$Treat \times Regulation(t-3)$	-1.920	Country Fixed Effects	Yes
	(1.615)		
$Treat \times Regulation(t-2)$	-1.860	R-squared	0.520
	(1.681)		
$Treat \times Regulation(t-1)$	-1.440	Clusters	780
	(1.428)		
$Treat \times Regulation(t)$	-3.280*	Observations	5,549
	(1.721)		

Table 5: Pearson Correlations

This table presents the Pearson correlations among CSR, Firm Size, ROA, Leverage, Capital Expenditure, R&D Intensity, Asset Tangibility, Financial Constraint, and Industry Competition. Significance at the 10%, 5%, and 1% level is indicated by *,**, ***, respectively.

Variables	CSR	Firm Size	ROA	Leverage	Capital Expenditure	R&D Intensity	Asset Tangibility	Financial Constraint	Industry competition
CSR	1								
Firm Size	0.4103***	1							
ROA	-0.0305***	-0.3600***	1						
Leverage	-0.0004	0.1095****	-0.0937***	1					
Capital Expenditure	-0.0194*	-0.0227	0.2381***	0.0761***	1				
R&D Intensity	0.0173*	-0.1296***	0.0981***	-0.2034***	-0.1614***	1			
Asset Tangibility	0.0731***	-0.159***	0.2116***	0.165***	0.493***	-0.0093	1		
Financial Constraint	-0.0667**	-0.1527***	0.3105***	-0.0094	-0.0749***	0.0048	-0.0504***	1	
Industry Competition	0.0323***	0.3473***	-0.2498**	0.1278**	0.0169	-0.1116**	-0.2291**	-0.0023	1

Table 6: UK-EU Matched Sample

Panel A of this table shows the matching of treatment and control firms. Panel B of this table reports the country representation in the treatment and control groups after matching.

Panel A

	Treatment	Control	Total
Available firms	201	550	751
Less: Unmatched Firms	9	358	367
Matched Sample	192	192	384

Panel B

	Treatment		Control	
	Frequency	Percentage	Frequency	Percentage
United Kingdom	192	100%	0	0%
Austria			4	2.08%
Belgium			6	3.13%
Denmark			11	5.73%
Finland			7	3.65%
France			26	13.54%
Germany			36	18.75%
Ireland			6	3.13%
Italy			11	5.73%
Luxembourg			3	1.56%
Netherland			12	6.25%
Norway			5	2.60%
Portugal			3	1.56%
Spain			15	7.81%
Sweden			16	8.33%
Switzerland			31	16.15%
Total	192	100%	192	100%

Table 7: Oversight and CSR: UK-EU Matched Sample

This table presents coefficients estimates of regressions which examine the effect of governments' ability to monitor firms' regulatory compliance on CSR. We construct a UK-EU matched sample by matching each UK firm with a firm from the other 15 European countries. The dependent variable is CSR for firm i in year t. "Treat" is a dummy variable that takes on the value one for UK-listed firms, zero for all EU firms in the data. "After" is a dummy for before or after the introduction of the 2013 Companies Act. "Treat × After" is the interaction term that provides the difference in difference estimate. Specifically, column (1) presents the results showing the impact of oversight on CSR. Column (2) includes firm and industry level characteristics. Columns (3) - (6) further control for year, industry, country, and firm fixed effects respectively. The sample period is from 2005-2015. All variables are defined in Table 1. The t-statistics reported in parentheses below the coefficient estimates are based on standard errors adjusted for within-firm clustering. Significance at the 10%, 5%, and 1% level is indicated by *,**, ***, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Treat	0.65	5.96***	6.00***	7.52***	12.84***	
	(1.492)	(1.375)	(1.383)	(1.624)	(4.142)	
After	3.87***	3.66***				
	(0.707)	(0.693)				
$Treat \times After$	-1.81*	-1.67*	-1.69*	-2.12**	-1.95**	-1.71*
	(1.041)	(0.987)	(0.988)	(0.972)	(0.976)	(0.940)
Firm Size		4.52***	4.52***	6.01***	6.50***	1.95**
		(0.423)	(0.426)	(0.521)	(0.525)	(0.831)
ROA		24.54***	25.14***	15.56**	17.91***	8.23**
		(6.309)	(6.369)	(6.467)	(5.916)	(4.166)
Leverage		-1.30	-1.32	-2.64	-3.96	1.48
		(2.987)	(3.009)	(3.720)	(3.636)	(2.591)
Capital Expenditure		-28.51**	-25.20**	-23.28	-17.75	4.19
		(11.796)	(11.967)	(15.195)	(14.898)	(8.591)
R&D Intensity		31.92	31.71	-6.07	8.92	-30.84
		(21.299)	(21.428)	(26.734)	(24.371)	(18.959)
Asset Tangibility		4.94***	4.57***	5.09***	4.35**	3.05*
		(1.536)	(1.547)	(1.902)	(2.141)	(1.809)
Financial Constraint		-0.18	0.11	0.11	0.09	0.48
		(1.783)	(1.799)	(1.543)	(1.526)	(1.142)
Industry Competition		-5.48***	-5.55***	-3.55	-4.24	-0.45
		(2.066)	(2.076)	(2.699)	(2.734)	(2.701)
Year FE	No	No	Yes	Yes	Yes	Yes
Industry FE	No	No	No	Yes	Yes	No
Country FE	No	No	No	No	Yes	No
Firm FE	No	No	No	No	No	Yes
R-squared	0.010	0.199	0.208	0.503	0.543	0.795
Clusters	384	384	384	384	384	384
Observations	3,633	3,633	3,633	3,633	3,633	3,633

Table 8: Oversight and CSR: UK Sample

Panel A of this table presents summary statistics based on reporting status for companies that provide environmental data to the CDP project. "Public" means that the company in question allows its report to be publicly viewed, while Private indicates that the company provides data for aggregation purposes but does not voluntarily disclose it publicly. Panel B of this table presents coefficients estimates of regressions which examine the effect of governments' ability to monitor firms' regulatory compliance on CSR. The dependent variable is CSR for firm i in year t. "Treat" is a dummy variable that takes on the value one for the UK-listed firms that did not voluntarily disclose their carbon emissions, zero for all other UK firms in the data. "After" is a dummy for before or after the introduction of the 2013 Companies Act. "Treat × After" is the interaction term that provides the difference in difference estimate. Specifically, column (1) of Panel B presents the results showing the impact of oversight on CSR. Column (2) of Panel B includes firm and industry level characteristics. Columns (3) - (5) of Panel B further control for year, industry and firm fixed effects, respectively. The sample period is from 2005-2015. All variables are defined in Table 1. The t-statistics reported in parentheses below the coefficient estimates are based on standard errors adjusted for within-firm clustering. Significance at the 10%, 5%, and 1% level is indicated by *,**, ***, respectively.

Panel A: CDP Data (UK Firms)

Response Status	Mean	Median	SD	Min	Max	Firm-Yrs
Public	60.64	61.29	13.71	9.24	94.64	1,715
Private and N/A	47.88	47.22	12.92	7.69	85.91	1,027

Panel B: Oversight and CSR (UK Firms)

Variables	(1)	(2)	(3)	(4)	(5)
Treat	-11.28***	-4.67***	-4.78***	-5.00***	
	(1.489)	(1.526)	(1.534)	(1.671)	
After	4.00***	3.63***			
	(0.683)	(0.739)			
$Treat \times After$	-3.20***	-3.55***	-3.50***	-2.23*	-2.18*
	(1.178)	(1.281)	(1.288)	(1.221)	(1.301)
Firm Size		5.04***	5.03***	6.66***	3.47***
		(0.400)	(0.403)	(0.465)	(1.181)
ROA		23.21***	24.05***	8.14	5.39
		(7.510)	(7.539)	(5.888)	(6.146)
Leverage		-2.35	-2.21	-3.99	-2.35
		(3.314)	(3.338)	(4.293)	(3.567)
Capital Expenditure		-44.60***	-41.09***	-19.42	-1.87
		(11.216)	(11.299)	(15.107)	(13.064)
R&D Intensity		-6.02	-6.06	13.26	-5.30
		(14.029)	(14.213)	(18.826)	(21.200)
Asset Tangibility		2.41*	2.11	7.90***	3.48
		(1.438)	(1.455)	(1.936)	(2.792)
Financial Constraint		-2.04	-1.63	0.18	0.62
		(1.440)	(1.469)	(1.298)	(1.299)
Industry Competition		-0.52	-0.53	-6.85**	-3.7
		(1.773)	(1.777)	(3.380)	(3.391)
Year FE	No	No	Yes	Yes	Yes
Industry FE	No	No	No	Yes	No
Firm FE	No	No	No	No	Yes
R-squared	0.187	0.389	0.397	0.643	0.771
Clusters	340	253	253	253	253
Observations	2,742	2,158	2,158	2,158	2,158

Table 9: Oversight and Environmental and Non-Environmental CSR

This table presents coefficients estimates of regressions which examine the effect of governments' ability to monitor firms' regulatory compliance on the sub-dimensions of CSR ratings. We investigate the differential impacts of oversight on firms' performance in CSR-Environment and CSR-Nonenvironment. The dependent variable in columns (1), (3), and (5) is CSR-Environment, and the dependent variable in columns (2), (4), and (6) is CSR-Nonenvironment for firm i in year t. Columns (1) and (2) present the results based on the UK-EU pooled sample. Columns (3) - (4) report the results using the UK-EU matched sample. And columns (5) and (6) report the results using within-UK sample. The sample period is from 2005-2015. All variables are defined in Table 1. The t-statistics reported in parentheses below the coefficient estimates are based on standard errors adjusted for within-firm clustering. Significance at the 10%, 5%, and 1% level is indicated by *,**, ***, respectively.

Dependent Variables	CSR-Env	CSR-Nonenv	CSR-Env	CSR-Nonenv	CSR-Env	CSR-Nonenv
Variables	(1)	(2)	(3)	(4)	(5)	(6)
$Treat \times After$	-1.78*	-2.14	-2.53*	-2.35	-3.80**	-4.04
	(1.146)	(2.064)	(1.293)	(2.248)	(1.750)	(3.018)
Firm Size	1.86**	4.99***	2.14**	3.61**	2.64	8.54***
	(0.810)	(1.666)	(1.081)	(1.742)	(1.863)	(2.745)
ROA	3.34	9.73*	12.16**	11.80	5.58	14.02
	(3.838)	(5.570)	(6.117)	(9.868)	(9.367)	(15.365)
Leverage	0.16	0.51	0.69	6.84	-1.77	-3.71
	(2.906)	(4.089)	(3.569)	(5.997)	(5.228)	(7.514)
Capital Expenditure	15.63*	27.86	9.80	-7.90	15.93	-20.60
	(9.296)	(17.457)	(13.092)	(21.062)	(15.405)	(32.949)
R&D Intensity	3.37	9.50	-57.89**	-9.00	-9.77	18.81
	(10.362)	(18.922)	(25.993)	(45.251)	(28.916)	(55.651)
Asset Tangibility	-2.42	-1.38	-0.65	8.23**	1.82	11.34*
	(2.167)	(4.074)	(2.471)	(4.147)	(3.730)	(6.590)
Financial Constraint	0.00	-0.17	-0.72	2.05	0.01	1.39
	(0.056)	(0.217)	(1.517)	(3.039)	(2.014)	(3.357)
Industry Competition	-0.530	-4.875	-3.65	2.07	-8.29*	-4.47
	(2.215)	(3.712)	(3.601)	(6.582)	(4.807)	(8.507)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.791	0.737	0.771	0.733	0.752	0.685
Clusters	780	780	384	384	243	243
Observations	5,549	5,549	3,325	3,325	1,944	1,944

Table 10: Oversight and CSR: Confounding Policies

This table presents coefficients estimates of regressions which examine the effect of governments' ability to monitor firms' regulatory compliance on CSR ratings when taking confounding policies into consideration. Due to the confounding laws or policies during our sample period 2005-2015, we take out of our sample the firms from France, Norway, Ireland, and Switzerland where there are confounding policies in place. The dependent variable is CSR for firm i in year t. Columns (1) - (3) present the results based on the UK-EU pooled sample, and columns (4) - (6) report the results using the UK-EU matched sample. The sample period is from 2005-2015. All variables are defined in Table 1. The t-statistics reported in parentheses below the coefficient estimates are based on standard errors adjusted for within-firm clustering. Significance at the 10%, 5%, and 1% level is indicated by *,**, ***, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Treat	5.10***	11.73***		6.15***	14.96***	
	(1.137)	(2.425)		(1.596)	(4.655)	
After	3.64***			3.87***		
	(0.640)			(0.896)		
$Treat \times After$	-2.48***	-2.19***	-1.65*	-1.95*	-1.99*	-2.24**
	(0.970)	(0.946)	(0.966)	(1.134)	(1.151)	(1.091)
Firm Size	4.77***	6.29***	1.99***	4.14***	6.94***	1.54
	(0.355)	(0.431)	(0.758)	(0.464)	(0.587)	(0.799)
ROA	9.53*	8.53	4.83	21.04***	21.52***	9.48**
	(5.505)	(5.199)	(4.789)	(7.009)	(6.326)	(4.351)
Leverage	-5.12*	-7.34**	0.46	-0.70	-3.15	2.69
	(2.849)	(3.140)	(2.640)	(3.343)	(4.139)	(2.874)
Capital Expenditure	-14.79	6.04	13.89*	-29.83**	-7.85	0.27
	(9.027)	(9.294)	(7.791)	(12.621)	(12.993)	(9.288)
R&D Intensity	18.58	31.99*	-6.68	38.45*	3.41	-17.59
	(16.836)	(17.849)	(15.744)	(21.448)	(22.346)	(20.438)
Asset Tangibility	3.62***	2.52	0.15	5.19***	4.67**	2.43
	(1.263)	(1.631)	(2.033)	(1.664)	(2.152)	(1.883)
Financial Constraint	-0.61	0.30	0.83	-1.21	-1.13	0.04
	(0.763)	(0.847)	(0.722)	(1.775)	(1.569)	(1.165)
Industry Competition	0.25	-1.80	-0.45	-2.44	-4.82	-0.75
	(1.641)	(1.786)	(1.537)	(2.207)	(2.959)	(2.954)
Year FE	No	Yes	Yes	No	Yes	Yes
Industry FE	No	Yes	No	No	Yes	No
Country FE	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes
R-squared	0.232	0.515	0.787	0.178	0.524	0.785
Clusters	592	592	592	316	316	316
Observations	4,172	4,172	4,172	2,962	2,962	2,962

Table 11: Oversight and CSR: Non - EU ETS Sample

This table presents coefficients estimates of regressions which examine the effect of governments' ability to monitor firms' regulatory compliance on CSR ratings using non-EU ETS sample. The dependent variable is CSR for firm i in year t. "Treat" is a dummy variable that takes on the value one for UK-listed firms, zero for all the other matched EU firms in the data. "After" is a dummy for before or after the introduction of the 2013 Companies Act. "Treat × After" is the interaction term that provides the difference in difference estimate. The non-EU ETS sample is constructed by taking out the firms associated with EU ETS from the UK-EU matched sample. The sample period is from 2005-2015. All variables are defined in Table 1. The t-statistics reported in parentheses below the coefficient estimates are based on standard errors adjusted for within-firm clustering. Significance at the 10%, 5%, and 1% level is indicated by *,**, ***, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Treat	1.63	6.38***	6.44***	7.73***	11.01	
	(1.919)	(1.876)	(1.890)	(2.409)	(8.118)	
After	4.45***	4.05***				
	(0.874)	(0.931)				
$Treat \times After$	-2.63**	-2.44**	-2.44**	-2.98**	-3.08**	-2.17*
	(1.230)	(1.231)	(1.233)	(1.189)	(1.201)	(1.154)
Firm Size		4.22***	4.22***	5.49***	5.75***	1.81*
		(0.598)	(0.601)	(0.766)	(0.772)	(0.929)
Leverage		-4.19	-4.13	-1.27	-0.94	3.03
		(3.476)	(3.507)	(4.643)	(4.372)	(3.055)
ROA		27.87***	28.29***	9.77	15.80**	7.67
		(7.605)	(7.663)	(7.901)	(6.955)	(5.094)
Capital Expenditure		-43.73***	-39.79***	-35.26*	-32.50**	-5.12
		(14.512)	(14.879)	(18.412)	(16.159)	(10.322)
R&D Intensity		3.30	3.40	-2.19	15.85	-35.60
		(22.713)	(22.814)	(25.021)	(24.785)	(26.257)
Asset Tangibility		5.83***	5.36**	4.10	4.28	5.06*
		(2.185)	(2.218)	(2.800)	(2.742)	(2.690)
Financial Constraint		-0.41	-0.25	0.58	1.14	0.09
		(2.225)	(2.223)	(1.814)	(1.773)	(1.459)
Industry Competition		-4.89*	-4.95*	-0.43	-0.41	1.69
		(2.506)	(2.518)	(3.324)	(3.262)	(3.404)
Year FE	No	No	Yes	Yes	Yes	Yes
Industry FE	No	No	No	Yes	Yes	No
Country FE	No	No	No	No	Yes	Yes
Firm FE	No	No	No	No	No	Yes
R-squared	0.010	0.156	0.164	0.538	0.594	0.786
Clusters	258	258	258	258	258	258
Observations	2,402	2,402	2,402	2,402	2,402	2,402

Table 12: Oversight and CSR: Sustainalytics

This table presents coefficients estimates of regressions which examine the effect of governments' ability to monitor firms' regulatory compliance on CSR using another CSR database - Sustainalytics. The dependent variable is CSR for firm i in year t. Specifically, columns (1) - (2) present the results based on the UK-EU pooled sample, columns (3) - (4) report the results using the UK-EU matched sample, and columns (5) - (6) present the results using the within UK sample. The sample period is from 2009-2015. All variables are defined in Table 1. The t-statistics reported in parentheses below the coefficient estimates are based on standard errors adjusted for within-firm clustering. Significance at the 10%, 5%, and 1% level is indicated by *,**, ***, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Treat	2.26***		1.67*		-4.28**	
	(0.689)		(0.887)		(1.784)	
$Treat \times After$	-1.37***	-1.72***	-1.51***	-1.66***	-1.75**	-1.25*
	(0.440)	(0.382)	(0.514)	(0.475)	(0.767)	(0.732)
Firm Size	3.02***	0.40	2.91***	0.20	1.50***	0.74
	(0.198)	(0.308)	(0.358)	(0.397)	(0.429)	(0.629)
ROA	4.91	3.05	5.20	3.14	8.32	9.22
	(3.183)	(2.256)	(4.421)	(2.845)	(6.926)	(5.766)
Leverage	-1.29	-0.63	-2.33	0.77	-5.01	2.78
	(1.765)	(1.378)	(2.667)	(2.005)	(3.925)	(2.470)
Capital Expenditure	-24.06***	4.00	-16.84	1.95	4.96	7.07
	(8.845)	(5.074)	(12.307)	(7.920)	(13.637)	(8.658)
R&D Intensity	16.90	4.69	27.86	1.09	99.09***	21.90
	(11.247)	(8.958)	(20.196)	(12.736)	(17.838)	(25.063)
Asset Tangibility	4.45***	1.14	3.61**	2.32*	-0.11	1.85
	(1.043)	(0.760)	(1.584)	(1.269)	(2.469)	(2.400)
Financial Constraint	1.00***	0.43***	0.28	0.25	-0.08	0.32
	(0.269)	(0.136)	(0.327)	(0.198)	(0.693)	(0.269)
Industry Competition	-2.06	-0.64	-1.24	-0.52	-4.84	0.84
	(1.278)	(1.080)	(1.630)	(1.488)	(3.605)	(3.468)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	No	Yes	No	Yes	No
Firm FE	No	Yes	No	Yes	No	Yes
R-squared	0.495	0.916	0.593	0.907	0.697	0.908
Clusters	1,066	1,066	468	468	230	230
Observations	5,204	5,204	2,623	2,623	1,005	1,005

Table 13: Oversight and CSR: TruValue

This table presents coefficients estimates of regressions which examine the effect of governments' ability to monitor firms' regulatory compliance on CSR using non-self-reported CSR data from TruValue. The dependent variable is CSR for firm i in year t. Specifically, columns (1) - (2), columns (3) -(4), and columns (5)-(6) present the results using UK-EU pooled sample, UK-EU matched sample, and UK only sample, respectively. The sample period is from 2007-2017. All variables are defined in Table 1. The t-statistics reported in parentheses below the coefficient estimates are based on standard errors adjusted for within-firm clustering. Significance at the 10%, 5%, and 1% level is indicated by *,**, ***, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Treat	1.74*		1.44		1.72	
	(0.981)		(1.414)		(2.135)	
$Treat \times After$ *	-1.99**	-2.32**	-3.88***	-4.00***	-3.63*	-2.31
	(0.983)	(1.060)	(1.233)	(1.253)	(2.117)	(2.190)
Firm Size	-0.44*	-0.38	-0.12	-0.52	-0.10	1.77
	(0.224)	(0.857)	(0.446)	(1.222)	(0.595)	(2.104)
ROA	1.62	1.92	7.55	6.37	17.45*	19.17
	(3.982)	(4.789)	(5.730)	(6.518)	(8.968)	(11.704)
Leverage	0.73	-0.12	-1.98	-2.18	-1.82	-5.08
	(2.198)	(3.031)	(2.801)	(3.947)	(4.074)	(6.216)
Capital Expenditure	8.93	6.09	17.24**	7.89	18.16	-5.93
	(6.215)	(6.891)	(8.497)	(9.792)	(13.407)	(16.016)
R&D Intensity	3.88	23.15	-8.27	-23.95	-12.91	-11.73
	(9.098)	(21.364)	(9.491)	(22.828)	(11.896)	(22.700)
Asset Tangibility	-1.33	-2.39	1.72	-1.28	0.91	3.09
	(0.940)	(1.587)	(1.365)	(2.377)	(1.735)	(3.485)
Financial Constraint	-0.12	0.02	-0.06	0.18	0.20	0.68
	(0.107)	(0.196)	(0.178)	(0.123)	(0.527)	(0.885)
Industry Competition	1.17	2.85	-1.04	0.09	-4.82	2.42
	(2.188)	(2.571)	(3.057)	(3.104)	(3.042)	(3.915)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	No	Yes	No	Yes	No
Firm FE	No	Yes	No	Yes	No	Yes
R-squared	0.285	0.563	0.384	0.541	0.244	0.555
Clusters	809	809	300	300	151	151
Observations	5,181	5,181	2,335	2,335	999	999

Table 14: Government Monitoring, CSR, and Outsourcing Intensity

Panel A of this table reports summary statistics for US firms taken from the KLD database. This measure is a net sum of plusses (+1) and minusses (-1) across a range of specific CSR categories. Panel B of this table presents coefficients estimates of regressions which examine the effect of governments' ability to monitor firms' regulatory compliance and CSR. We use the variation in U.S. industry-level foreign outsourcing to capture the variation in governments' ability to monitor firms. We construct sample I based on 405 industries in years 2007 and 2012, and sample II based on 71 industries from 2005-2016. The dependent variable is CSR for firm i in year t. Columns (1) - (3) present the results based on US sample I. Columns (4) - (6) reports the results based on US sample II. All variables are defined in Table 1. The t-statistics reported in parentheses below the coefficient estimates are based on standard errors adjusted for within-firm clustering. Significance at the 10%, 5%, and 1% level is indicated by *, **, ***, respectively.

Panel A: KLD Data (US Firms)

Time Period	Mean	Median	SD	Min	Max	Firm-Yrs
Net-CSR (2007, 2012)	0.189	0	2.123	-7	15	3,090
Net-CSR (2005-2012)	0.015	0	2.609	-7	17	7,010

Panel B: Government Monitoring, CSR, and Outsourcing Intensity

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Foreign Outsourcing	0.64**	0.97***	1.17*	0.73**	0.74**	1.09**
	(0.303)	(0.305)	(0.644)	(0.372)	(0.329)	(0.528)
Firm Size		0.55***	0.38***		0.76***	0.79***
		(0.043)	(0.068)		(0.067)	(0.067)
ROA		-0.26	-0.1		-0.38	-0.22
		(0.218)	(0.348)		(0.235)	(0.232)
Leverage		-0.58***	-0.36*		-0.77***	-0.88***
		(0.174)	(0.215)		(0.271)	(0.262)
Capital Expenditure		0.81	0.77		2.72**	2.94***
		(0.986)	(1.388)		(1.164)	(1.097)
Market-to-Book		0.13***	0.11***		0.20***	0.20***
		(0.030)	(0.042)		(0.029)	(0.030)
Asset Tangibility		-0.98***	-0.56		-1.39***	-1.50***
		(0.264)	(0.509)		(0.482)	(0.474)
Industry Competition		-0.31	-0.13		-0.07	-0.20
		(0.230)	(0.332)		(0.301)	(0.316)
Year FE	No	No	Yes	No	No	Yes
Industry FE	No	No	Yes	No	No	Yes
Clusters	2,017	1,720	1,720	1445	1400	1400
R-square	0.002	0.157	0.146	0.003	0.196	0.266
Observations	3,066	2,500	2,500	6,841	6,350	6,350

Table 15: Firms' CSR and Employee Wages

This table presents regression estimates of the effect of CSR on employee wages. The dependent variable is the natural logarithm of one plus the average employee wage for firm i in year t. Columns (1) and (2), columns (3) and (4), and columns (5) and (6) present the results based on UK-EU pooled sample, UK-EU matched sample, and within UK sample, respectively. The sample period is from 2005-2015. All other variables are defined in Table 1. The t-statistics reported in parentheses below the coefficient estimates are based on standard errors adjusted for within-firm clustering. Significance at the 10%, 5%, and 1% level is indicated by *,**, ***, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
CSR	-0.01***	-0.02***	-0.01***	-0.01**	0.004	0.005
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
Firm Size	0.25***	0.25***	0.15***	0.15***	0.08*	0.09
	(0.029)	(0.038)	(0.042)	(0.048)	(0.043)	(0.063)
Leverage	-0.83***	-0.86***	-0.86***	-0.61*	-0.77***	-0.39
	(0.217)	(0.228)	(0.283)	(0.321)	(0.274)	(0.340)
ROA	0.87**	0.75*	1.39**	1.39**	0.36	0.07
	(0.419)	(0.451)	(0.623)	(0.556)	(0.700)	(0.643)
Capital Expenditure	-1.74**	-0.50	-1.99	0.04	2.05	1.60
	(0.862)	(0.836)	(1.315)	(1.175)	(1.257)	(1.106)
R&D Intensity	3.39**	1.27	4.63***	2.49	3.02***	4.18**
	(1.452)	(2.089)	(1.500)	(1.835)	(1.034)	(1.625)
Asset Tangibility	0.19	0.18	0.03	-0.02	-0.34**	-0.36*
	(0.122)	(0.142)	(0.179)	(0.195)	(0.138)	(0.213)
Financial Constraint	-0.28***	-0.13	-0.44**	-0.29*	-0.17	0.27
	(0.101)	(0.087)	(0.188)	(0.158)	(0.222)	(0.196)
Industry Competition	-0.16	0.04	0.11	-0.13	0.03	0.12
	(0.128)	(0.202)	(0.182)	(0.351)	(0.166)	(0.261)
Year FE	No	Yes	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes	No	Yes
R-squared	0.070	0.335	0.053	0.436	0.039	0.480
Clusers	757	757	350	350	251	251
Observations	4,856	4,856	2,637	2,637	1,937	1,937

Table 16: Oversight and Employee Wages

This table presents regression estimates of the effect of oversight on employee wages. The dependent variable is the natural logarithm of one plus the average employee wage for firm i in year t. Columns (1) - (2), columns (3)- (4), and columns (5)- (6) present the results based on EU-UK pooled sample, EU-UK matched sample, and within UK sample, respectively. The sample period is from 2005-2015. All other variables are defined in Table 1. The t-statistics reported in parentheses below the coefficient estimates are based on standard errors adjusted for within-firm clustering. Significance at the 10%, 5%, and 1% level is indicated by *,**, ***, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Treat	-0.58***		-0.61***		-0.37**	
	(0.109)		(0.124)		(0.165)	
After	0.60***		0.91***		2.09***	
	(0.117)		(0.158)		(0.222)	
$Treat \times After$	0.38***	0.32***	0.21*	0.20*	0.30*	0.32*
	(0.091)	(0.095)	(0.114)	(0.120)	(0.154)	(0.169)
Firm Size	0.13***	0.12	0.06	-0.20	0.95***	0.90***
	(0.035)	(0.104)	(0.042)	(0.128)	(0.049)	(0.185)
Leverage	-0.83***	-0.62**	-0.58*	-0.26	-0.24	0.17
	(0.228)	(0.311)	(0.310)	(0.359)	(0.426)	(0.574)
ROA	0.65	0.31	1.06*	0.26	1.40***	1.41***
	(0.466)	(0.462)	(0.545)	(0.557)	(0.454)	(0.520)
Capital Expenditure	-0.72	0.54	-0.32	0.68	3.20**	2.84*
	(0.824)	(0.948)	(1.120)	(1.381)	(1.367)	(1.472)
R&D Intensity	0.25	0.23	2.42	-3.55	5.84***	4.33**
	(2.195)	(1.724)	(1.723)	(2.215)	(1.020)	(1.829)
Asset Tangibility	0.05	0.42*	-0.10	-0.03	0.44**	0.48
	(0.146)	(0.216)	(0.191)	(0.242)	(0.184)	(0.411)
Financial Constraint	-0.10	-0.21**	-0.33**	-0.27*	0.38	0.27
	(0.089)	(0.091)	(0.160)	(0.164)	(0.243)	(0.267)
Industry Competition	0.07	-0.17	-0.06	-0.14	-0.61*	-0.36
	(0.197)	(0.202)	(0.341)	(0.335)	(0.349)	(0.375)
Year FE	No	Yes	No	Yes	No	Yes
Industry FE	Yes	No	Yes	No	Yes	No
Firm FE	No	Yes	No	Yes	No	Yes
R-squared	0.330	0.639	0.446	0.594	0.650	0.701
Clusters	757	757	350	350	256	256
Observations	4,856	4,856	2,637	2,637	1,994	1,994

Table 17: Oversight, Employee Wages and CSR: SUR Model

This table presents regression estimates of the effect of oversight on employee wages and CSR using SUR model. The dependent variable are CSR and the natural logarithm of one plus the average employee wage for firm i in year t, in columns (1), (3), and (5), columns (2), (4), and (6), respectively. Panels A, B and C present the results based on EU- UK pooled sample, UK-EU matched sample, and within UK sample. Specifically, in each panel, columns (1) and (2) presents the results with CSR and the average employee wage growth as dependent variable respectively, controlling for the impacts of firm and industry level characteristics. Columns (3) and (4) report the results when year and industry fixed effects are further included in the regressions. And columns (5) and (6) show the results further controlling for year and firm fixed effects. The sample period is from 2005-2015. All other variables are defined in Table 1. The t-statistics reported in parentheses below the coefficient estimates are based on standard errors adjusted for within-firm clustering. Significance at the 10%, 5%, and 1% level is indicated by *,**, ***, respectively.

Dependent Variables	CSR	Wages	CSR	Wages	CSR	Wages
Panel A						
Treat	5.45***	-0.75***	4.46***	-0.58***		
	(0.637)	(0.066)	(0.656)	(0.070)		
After	3.57***	0.03				
	(0.462)	(0.048)				
$Treat \times After$	-2.50***	0.35***	-2.14***	0.38***	-1.78***	0.32***
	(0.849)	(0.088)	(0.718)	(0.077)	(0.457)	(0.060)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Industry FE	No	No	Yes	Yes	No	No
Firm FE	No	No	No	No	Yes	Yes
R-squared	0.242	0.083	0.482	0.330	0.815	0.639
Observations	4,856	4,856	4,856	4,856	4,856	4,856
Panel B						
Treat	4.26***	-0.67***	3.92***	-0.61***		
	(0.739)	(0.078)	(0.747)	(0.079)		
After	4.46***	0.15**				
	(0.714)	(0.075)				
$Treat \times After$	-2.13**	0.19*	-2.02**	0.21**	-1.98***	0.20***
	(1.008)	(0.106)	(0.801)	(0.084)	(0.570)	(0.075)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Industry FE	No	No	Yes	Yes	No	No
Firm FE	No	No	No	No	Yes	Yes
R-squared	0.264	0.089	0.557	0.446	0.790	0.594
Observations	2,637	2,637	2,637	2,637	2,637	2,637
Panel C						
Treat	-4.81***	-0.13	-5.73***	-0.33***		
	(0.804)	(0.087)	(0.837)	(0.090)		
After	3.34***	0.44***				
	(0.655)	(0.071)				
$Treat \times After$	-3.04***	0.22*	-1.63*	0.24***	-1.33*	0.21**
	(1.077)	(0.117)	(0.851)	(0.091)	(0.707)	(0.086)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Industry FE	No	No	Yes	Yes	No	No
Firm FE	No	No	No	No	Yes	Yes
R-squared	0.394	0.076	0.655	0.483	0.788	0.592
Observations	1,937	1,937	1,937	1,937	1,937	1,937

Figures

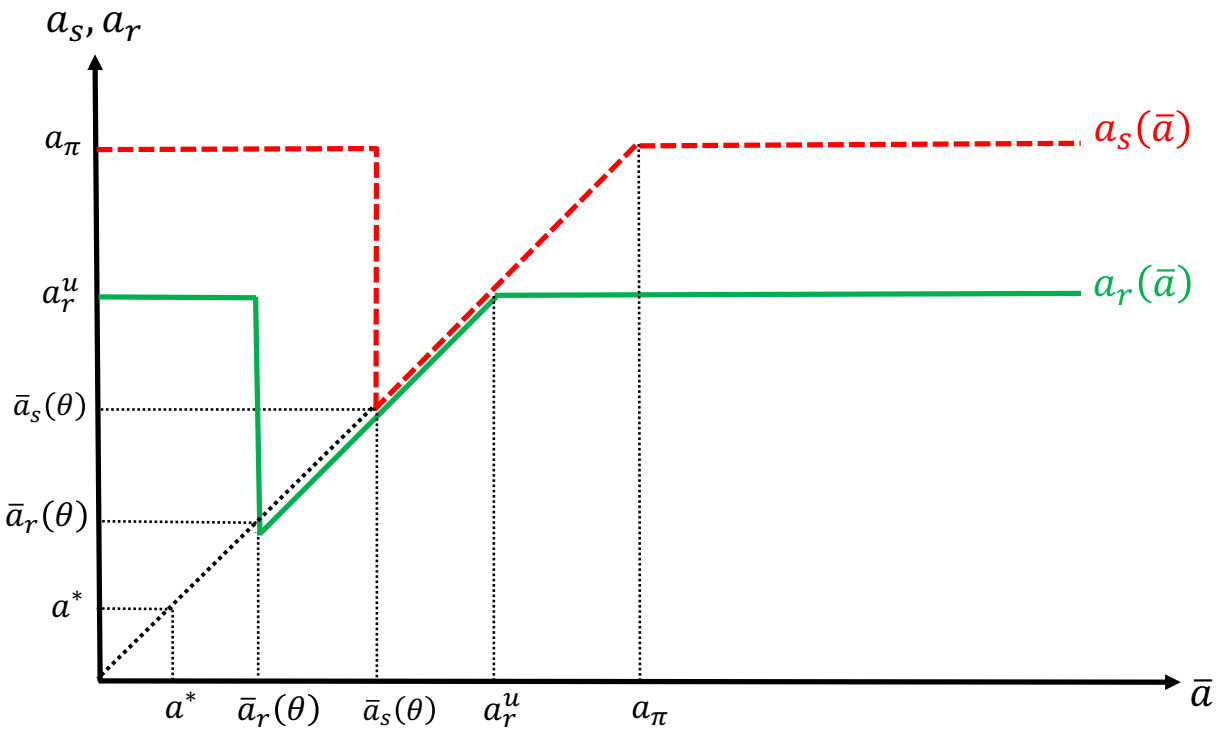

Figure 1: Equilibrium actions a_s and a_r in a pure profit-maximizing organization and a purpose-driven organization, respectively, as functions of the regulatory ceiling $\bar{a}$.

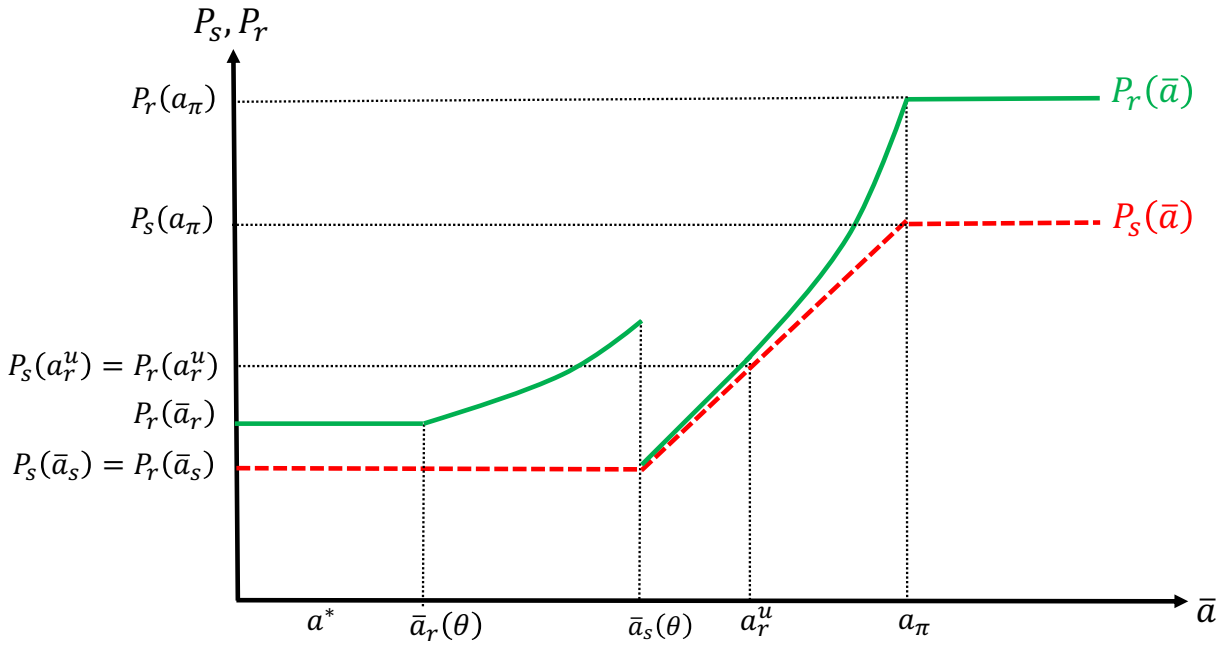

Figure 2: Entrepreneur's payoffs P_s and P_r in a pure profit-maximizing organization and a purpose-driven organization, respectively, as functions of the regulatory ceiling $\bar{a}$.

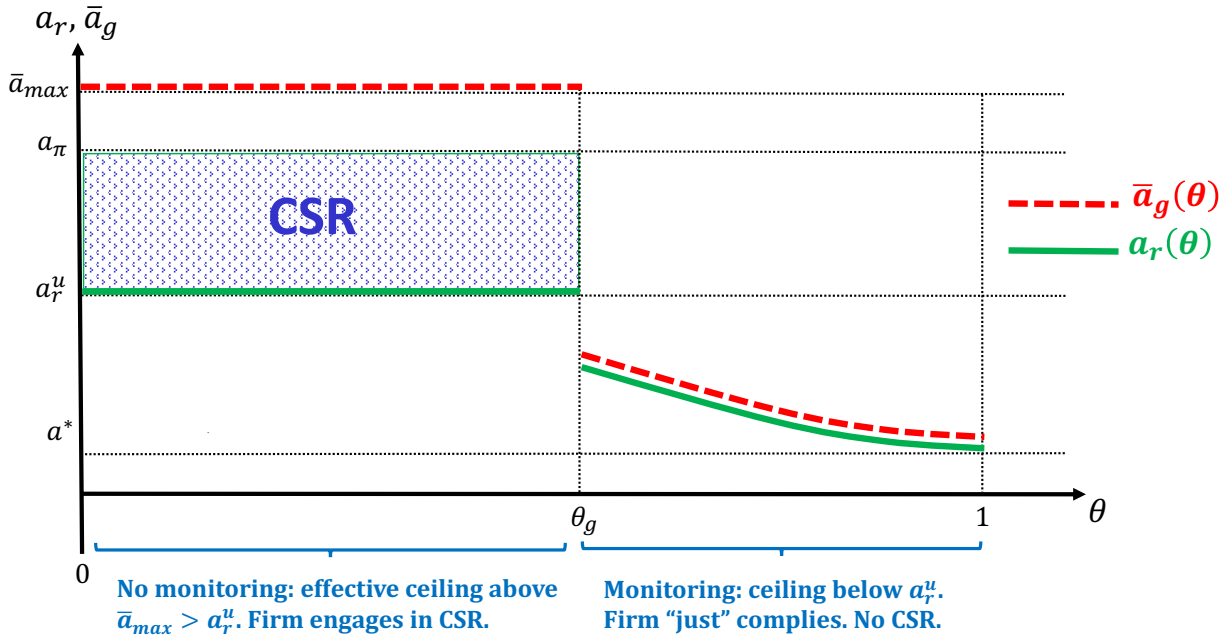

Figure 3: Equilibrium regulatory ceiling $\bar{a}_g$ and equilibrium action a_r as functions of monitoring efficiency θ. At high levels of monitoring efficiency $\theta \geq \theta_g$, the regulator can impose a low ceiling, the firm "just" complies with regulation, and there is no CSR.
At low levels of monitoring efficiency $\theta < \theta_g$, the regulator no longer monitors the firm, and the effective ceiling is $\bar{a}_{max} \gg 0$. The firm could select pure profit-maximizing action a_π, but instead chooses to engage in CSR by self-regulating and selecting action $a_r^u < a_\pi$.

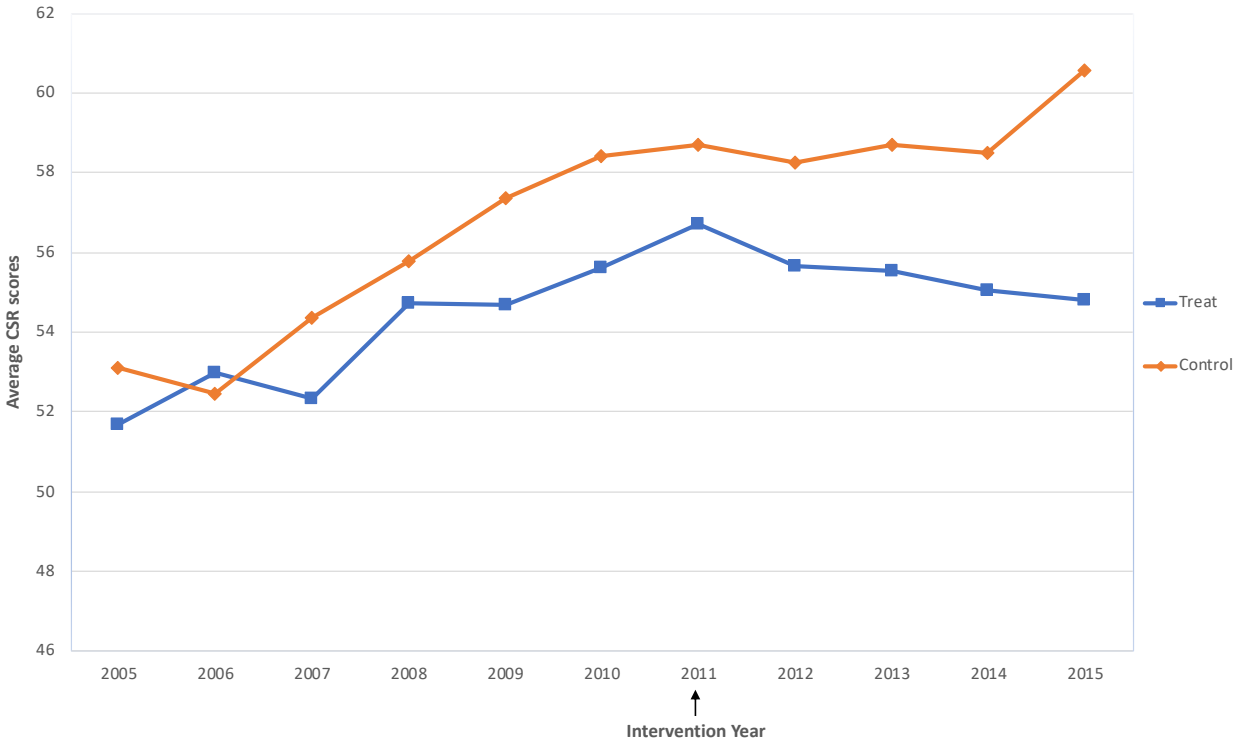

Figure 4: Average CSR scores over 2005-2015.