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**Global Supply Chain Sustainability: the Role of  
Non-governmental Enforcement Mechanisms**

Michela LIMARDI, Francesca BATTISTA

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# Global Supply Chain Sustainability: the Role of Non-governmental Enforcement Mechanisms \*

Michela Limardi<sup>†</sup> and Francesca Battista<sup>‡</sup>

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## Abstract

Non-governmental organizations (NGOs) exert pressure on multinational enterprises (MNE) to force the application of social and environmental standards for subcontractors in developing countries. Non-governmental regulation relies on voluntary standards defined by the NGOs, or by the MNEs themselves. This leads to an uncertainty in environmental and social regulation. In this respect, external pressure from NGOs constitutes a *reputational risk* for the company. MNEs, in turn, try to manage those risks by increasingly monitoring the environmental and social impact of their global suppliers. Two forms of non-governmental enforcement currently prevail: warning (i.e. disclosing information of a violation to the company) versus immediate punishment (i.e. penalizing a company without disclosing information). A theoretical model is developed to determine whether disclosing (or not) information to the MNE about reputational risk is more effective. The results demonstrate that MNEs with a low reputation (or a high degree of outsourcing) will have a higher incentive to conduct inspections of its global suppliers in a warning regime. Conversely, when MNE visibility is high, disclosing information in advance does not

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provide additional incentives.

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JEL: L30, F23, J80

## 1 Introduction

In 2001, the Greenpeace and Palni Hills Conservation Council, reported that "Hindustan Lever, a subsidiary of Unilever, dumped mercury contaminated glass waste behind its factory onto areas leading to the Pambar Shola forest, in India. In the same year the factory was closed after heavy campaigning by NGOs [Non-governmental organizations]" (Van der Wal, 2009). More recently, in March 2010, has been Greenpeace alleged that Nestlé's Indonesian palm oil supplier, *Sinar Mas*, was involved in illegal rainforest clearance. In order to deal with the short-term damage, Nestlé suspended sourcing from the supplier the same year.<sup>1</sup> The *Clean Clothes Campaign*, an alliance of organizations in fifteen European countries, specialised in monitoring firms for the compliance of social standards in their supply chain, states that "One of the worst things that can happen when violations are discovered is for a company to 'cut and run' - to abruptly stop supplying from a factory or a country and put workers jobs at risk."<sup>2</sup> In response to these types of multinational enterprises (MNE) reactions, some NGOs specializing in monitoring compliance with environmental and social standards, defined hereafter as watchdog NGOs, have changed their strategies by switching in *warning* mechanism. Once a subcontractor violation is detected, the NGO sends a private message to the CEO of the MNE explaining the outcome of its investigation. The NGO's main objective is to convince the MNE to continue working with the local subcontractor, as well as persuade the company to correct any wrongful behavior to come into compliance with environmental and social standards.

The aim of this paper is twofold. First, we analyse the impact of the different enforcement instruments used by watchdog NGOs on the *reputational risk* incurred by MNEs. Second, we examine the incentives for MNEs to monitor the environmental and social impact of their global suppliers in a non-governmental enforcement setting.

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<sup>1</sup>"How Nestlé dealt with a social media campaign against it", Financial Times, December 3, 2012

<sup>2</sup><https://archive.cleanclothes.org/issues/faq/boycotts>. Accessed the 23th of March 2020

Currently, NGOs specializing in monitoring compliance with environmental and social standards use two enforcement strategies *immediate punishment* or *warning*, similar to those used by a governmental regulator. Immediate punishment consists of penalizing the firm immediately after a violation is detected, while a warning involves giving the violating firm the opportunity to correct the identified wrongdoing. If the violator does not correct the behavior, a sanction is applied. The main difference between non-governmental and state regulation is that the former relies on voluntary standards defined by NGOs, or by the firms themselves, while the latter is established by national governmental agencies. Under non-governmental regulation, companies can be found in violation of their own internal standards or accused of violating international community norms even in developing countries where MNEs are compliant with national laws (Kytte & J., 2005). This leads to environmental and social regulation uncertainty. In this respect, external pressure from NGOs also constitutes a "reputational risk" for MNEs, defined as damage of a company's brand, regulatory pressure, legal action or consumer boycotts (Kytte & J., 2005). Under *uncertain* regulation, a warning becomes a mechanism for revealing the degree of risk for violating the norms. To a certain extent, by disclosing the violating information to the company, the NGO reduces the level of uncertainty surrounding reputational risk.<sup>3</sup>

The MNE, in turn, will try to manage those risks in its entire supply chain by increasing investments in corporate social responsibility (CSR). In this paper, CSR is defined as a set of measures adopted by a MNE, such as factory inspections, to manage environmental and social impacts. However, as pointed out in an article from *The New York Times*, "the inspections are often so superficial that they omit the most fundamental workplace safeguards like fire escapes. And even when inspectors are tough, factory managers find ways to trick them and hide serious violations, like child labor or locked exit doors. Dangerous conditions cited in the audits frequently take months to correct, often with little enforcement or follow-through to guarantee compliance".<sup>4</sup> The focus here will be on the probabilistic outcomes from the costs afforded by MNEs to carry out factory inspections in the overseas production supply chain.

We develop a theoretical model to study whether disclosure (the use of a warning mechanism)

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<sup>3</sup>Interestingly, *Peuples Solidaires* a small French NGO, focused on monitoring the social practices of MNEs, claims uncertainty about choosing between a warning mechanism or immediate sanction after a firm is found in violation in developing countries (Interview with Camille Bethoux, Project Manager for Industrial Sector Working Conditions for *Peuples Solidaires*, March, 31, 2011).

<sup>4</sup>"Fast and Flawed Inspections of Factories Abroad", September, 1, 2013, *The New York Times*.

or non-disclosure (the use of immediate punishment) of information to the firm about the degree of the reputational risk, upon detection of a violation is more effective to induce the MNE to pay the cost to monitor its global supply chain. An immediate punishment means the severity of the sanction influences the decision of an MNE to comply with environmental and social standards (Becker, 1968). A warning regime offers the MNE an additional strategy, which is waiting for the notice before coming into compliance. Here, we consider a mission-oriented NGO specializing in monitoring compliance with environmental and social standards.<sup>5</sup> We show that an MNE with low brand reputation has more incentive to conduct factory inspections of its global suppliers in a warning regime. The warning mechanism might provide additional incentives for MNEs operating with a large number of subcontractors abroad to more effectively manage its environmental and social impact. Conversely, when MNE visibility is high, disclosing information about the degree of the reputational risk in advance does not provide additional incentives to invest in CSR.

The paper is related to several areas of existing literature on regulatory enforcement, such as papers studying dynamic enforcement schemes (Harrington (1988), Harford & Harrington (1991), Friesen (2003)) and cooperative relationships between the regulator and the regulated (Toffel & Short (2011), Earnhart (2004)). This paper differs from this literature because the dynamic enforcement scheme appears to be less crucial in the strategic interaction between a multinational enterprise and a watchdog NGO.<sup>6</sup> Moreover, in this paper, self-reporting was not included among the possible strategies for firms. Additionally, cooperative NGOs that might use this voluntary self-policing program were not considered. This paper is more closely related to the literature of warnings as a new enforcement policy adopted by regulatory governmental agencies (Nyborg & Telle (2004) and Nyborg & Telle (2006); Mungan (2013); Raff & Earnhart (2018)). The model presented here is similar to the models of Nyborg & Telle (2004), Malik (2014) and Telle (2009), where a firm's compliance is modeled as probabilistic. This is related to the fact that a firm's compliance status often depends on factors that are difficult to control, such as the behavior of a subcontractor. However, the main contribution of this paper is the explanation of the peculiarities of a non-governmental regulator, i.e. the monitoring activity of an NGO, in a context of *uncertain* regulations and sanctions. Finally, this paper also correlates with a recent body of work concerning

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<sup>5</sup>Besley & Ghatak (2005) provide a theoretical explanation of the existence of mission-oriented organizations.

<sup>6</sup>As pointed out by Greenpeace, a baseline of the NGO is "no permanent enemies, no permanent friends": "This is why we are deliberately unpredictable. Just because we praise a corporation one day, does not mean that we will attack it the next" (Rache, 2017).

the influence of outside NGO pressure on multinational firms (Baron & Diermeier (2007); Fischer & Lyon (2014); Aldashev et al. (2015); Baron (2012); Krautheim & Verdier (2016); Heyes et al. (2018)). However, to the best of our knowledge, no paper explicitly analyses the use of these two enforcement strategies (warning and immediate punishment) by an NGO specializing in *policing* firms.

The remainder of this paper is organized as follows: Section 2 presents the model and analysis of the benchmark case with immediate punishment. Section 3 examines the more recent enforcement mechanism of the warning strategy and finally, Section 4 presents the conclusion.

## 2 Basic Model

Consider a simple model with two agents: a watchdog NGO and an MNE. Throughout this analysis, the focus will be on an MNE that has decided to offshore production in developing countries for reasons of comparative advantage. The NGO is a mission-oriented entity in the sense of Besley & Ghatak (2005). We assume that the NGO is located in the North and incurs a cost for monitoring MNE subcontractors located in developing countries. The supplier is monitored by the NGO with some probability  $m$ . The MNE is sanctioned whenever the NGO discovers any violation of social or environmental norms by one a subcontractor, e.g. a discharge of toxic liquid in a river.

The principal-agent problem between a corporate MNE and a subcontractor is formalized with the positive probability  $p \geq 0$  wherein the subcontractor is perceived as compliant. The MNE has two choices: whether or not to make a positive effort  $e = \{0, 1\}$ , to affect this probability by investing in CSR, i.e. paying the cost of auditing Southern suppliers.<sup>7</sup> We assume that the probability of the subcontractor being perceived as compliant depends on the level of effort made by the MNE  $p(e)$ , with  $e \in \{0, 1\}$  and  $p(1) > p(0)$ . Thus, higher effort levels increase the probability of compliance, but are never a guarantee (Malik, 2014).<sup>8</sup> Suppose a subcontractor

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<sup>7</sup>We assume that the effort  $e$  can take two values, which were normalised as a zero effort level and a positive effort of one, i.e.  $e \in \{0, 1\}$ . If a continuous level of effort was considered, this could not change the result, since for the firm it would not be optimal to make an effort, for instance, at a level of effort  $1/2$ . As in the case of warning the MNE would opt to wait and choose  $e_1 = 0$  and  $e_2 = 1$  in order to avoid disaster.

<sup>8</sup>"The inspections carry enormous weight with factory owners, who stand to win or lose millions of dollars in orders depending on their ratings. With stake so high, factory managers have been known to try to trick or cheat at the auditors. Bribery offers are not unheard-of. Often notified beforehand about an inspector's visit, factory managers will unlock fire exit doors, unblock cluttered stairwells or tell underage child laborers not to show up at work that week." *The New York Times*, September 13, 2013.

located in a developing country discharges toxic liquid that leads to the pollution of a river, due to a lack of internal controls in the production process. In this situation, even if the MNE had made an effort *ex-ante* (e.g. inspected the local subcontractor for internal waste management), the company would still be considered non-compliant by the NGO, if the violation is detected. Making an effort  $e$  implies a cost for the MNE that is equal to  $c(e) \geq 0$ . We normalize  $c(1) = c_1$  and  $c(0) = c_0 = 0$ .

The MNE aims to increase the probability of being compliant. The profit function is:

$$\pi(e) = R - \sigma c(e) - m\delta[1 - p(e)] \quad (2.1)$$

where  $R$ , the revenue, is constant and, for the sake of simplicity, we assume that  $R = 0$ , to focus on the cost side of the firm making an effort. Notice that in this paper, proactive strategy by the firm that are rewarded by the NGO, such as self-certification, is not taken into account. As previously mentioned, the focus is on NGOs specializing in policing firms.<sup>9</sup>

The parameter  $\delta \geq 0$  defines the MNE reputation, i.e. its degree of vulnerability and  $\sigma > 0$  is a parameter identifying the degree of MNE outsourcing, i.e. the number of subcontractors in the South. The cost of being sanctioned increases in  $\delta$ , while  $\sigma$  increases the cost of making a positive effort  $e$ . The probability of being in violation is  $[1 - p(e)]$  and  $m \geq 0$  is the probability that the violation is detected.

The NGO's problem is monitoring and administering punishment on a non-compliant MNE.<sup>10</sup> The NGO gains some private benefits (higher donations) from identifying non compliance. Additionally, the NGO gains a positive value if the MNE is perceived as compliant.<sup>11</sup> This last assumption is related to the fact that employees of NGOs have an intrinsic motivation to work on behalf of social or environmental issues.<sup>12</sup>

The expected utility of the watchdog NGO is:

$$p(e)V(e) - m[1 - p(e)]D - \psi(m) \quad (2.2)$$

<sup>9</sup>Aldashev et al. (2015) provide an explanation of the recent emergence of this type of NGOs.

<sup>10</sup>See Aldashev et al. (2015).

<sup>11</sup>As reported in The Guardian: "If some campaigns [of NGOs] are mostly cosmetic and other were earth-changing, what can we learn about NGO campaigns targeted at big brands? Some produce little more than press releases, intended to generate attention and funding for activists. Others set off important changes." Under pressure: campaigns that persuaded companies to change the world, The Guardian, February 9, 2015

<sup>12</sup>See Besley & Ghatak (2005)



where  $V(e)$  is the benefit perceived by the NGO. We assume that  $V(e) = A$  where  $A$  is a positive constant defining a benefit for the NGO and for simplicity it is normalised to  $A = 1$ .  $D > 0$  indicates a positive amount of donations associated with the detection of a violation, while  $\psi(m)$  is the cost of monitoring intensity.<sup>13</sup> The cost function of the NGO  $\psi(m) = \gamma m$  is linear in  $m$ , where  $\gamma > 0$  is a parameter identifying the inefficiency of the NGO in monitoring. Lower is the value of  $\gamma > 0$ , the higher the NGO's monitoring efficiency. The efficiency might depend on the experience acquired by the NGO in monitoring MNE compliance with social standards or the strength of the NGO's networks with Southern-based social activists.<sup>14</sup>

## 2.1 Immediate Punishment

### 2.1.1 Multinational Enterprise

The first scenario that is considered is the one in which the NGO immediately penalizes the MNE when an infraction is detected. The NGO decides on the level of monitoring in order to encourage the MNE to make an effort. The MNE decides on the optimal level of effort, with  $e \in \{0, 1\}$ .

The timing of the game is as follows:

1. (NGO) The NGO decides the level of monitoring intensity;
2. (MNE) The MNE decides on the level of effort with  $e \in \{0, 1\}$ ; and
3. The outcome is realized and the MNE is sanctioned, if a violation is detected.

We will look for the subgame-perfect Nash equilibrium, and we solve the game by backward induction. First, consider the choice of the MNE.

$$\text{If } e = 0 \Rightarrow \pi(0) = -m\delta [1 - p(0)]$$

$$\text{If } e = 1 \Rightarrow \pi(1) = -\sigma c_1 - m\delta [p(1)]$$

The MNE will chose  $e^*(m) = 1$  if it can be rewarded for the effort in terms of profit, that is when:

<sup>13</sup>Limardi (2011) notes that an NGO's discovery of just one additional case of non-compliance with international labor standards by a multinational firm, implies a 20 per cent increase in private donations to that NGO

<sup>14</sup>NGO networks are able to link diverse groups under a common agenda (Rootes, 1999). The larger the NGO network working on environmental and social issues, the lower the monitoring costs.

$$\sigma c_1 \leq m\delta[p(1) - p(0)]$$

$$\Rightarrow m^* = \frac{\sigma c_1}{\delta[p(1) - p(0)]} \quad (2.3)$$

**Lemma 1:** With punishment, the monitoring intensity of the NGO, with the optimal decision of the MNE is  $e^* = 1$ , is  $m^* = \frac{\sigma c_1}{\delta[p(1) - p(0)]}$ ; while if  $m < \frac{\sigma c_1}{\delta[p(1) - p(0)]}$  the MNE will make zero effort.

**Proof.:** The NGO can increase the value of  $m$  by some arbitrarily small  $\epsilon > 0$  and increase its return without violating the incentive compatibility constraint. Specifically, the NGO can raise the monitoring level such that the MNE will choose  $e^* = 1$  when  $m^* = \frac{\sigma c_1}{\delta[p(1) - p(0)]}$ .

The optimal decision of the MNE depends on the cost of investing in CSR, the probability of being perceived as compliant, its reputation, the threat of being sanctioned and the degree of outsourcing. This result sheds light on the crucial parameters that influence an MNE's decision to invest in CSR as a response to an NGO external pressure. Empirical evidence shows how MNEs react in a different way to NGO campaigns. UNOCAL, a US oil and gas corporation, was attacked by activists and NGOs in 2000 for human rights violations during the construction of a pipeline and for involvement with the authoritarian regime in Burma.<sup>15</sup> Despite a huge campaign, UNOCAL did not concede to activists' demands (La Mure & Spar, 2003). Conversely, Novartis, a Swiss pharmaceutical company, decided to invest in CSR before any NGO attacks in 1999. During that period, several pharmaceutical firms were targeted by activists due to their market operations in poor countries (La Mure & Spar, 2003). A possible explanation for such contrasting choices between companies is that the cost of complying with social standards differs across industries.

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<sup>15</sup>Owned by The Chevron Corporation since 2005.

### 2.1.2 Watchdog NGO

The focus will now shift to the utility of the watchdog NGO given the optimal effort of the MNE. The NGO takes into account the optimal decision of the MNE, and maximizes its expected utility:

$$U_{NGO}(m) = p(e)V(e) - m[1 - p(e)]D - \gamma m \quad (2.4)$$

Two scenarios are compared : 1)  $m = m^* \Rightarrow e^* = 1$  and 2)  $m = 0 \Rightarrow e^* = 0$ . The NGO will choose  $m = m^*$  if the expected utility is higher than the expected utility of  $m = 0$

$$\underbrace{p(1) + m[1 - p(1)]D - \gamma m}_{m=m^*} \geq \underbrace{p(0) + m[1 - p(0)]D - \gamma m}_{m=0}$$

$$p(1) + m^*[1 - p(1)]D - \gamma m^* \geq p(0) \quad (2.5)$$

With the substitution of the value of  $m^*$  (equation 2.3) in 2.5, then it is optimal for the NGO to choose  $m = m^*$  if  $\gamma$ , i.e. the inefficiency of the NGO's monitoring, is low enough. In other words, when:

$$\gamma \leq \delta \frac{\Delta p \Delta p}{\sigma c_1} + [1 - p(1)]D \quad (2.6)$$

**[Insert Fig. 1 about here]**

**Proposition 1:** For any value of  $\delta > 0$ , if  $\gamma \leq \delta \frac{\Delta p \Delta p}{\sigma c_1} + [1 - p(1)]D$ , it will be optimal for the NGO to choose  $m = m^*$ , inducing the MNE to make a positive effort,  $e^* = 1$ . For a high level of  $\gamma$ , the optimal decision of  $m = m^*$  will depend on the level of  $\delta$ . When  $\delta$  is high enough, it will be optimal to choose  $m = m^*$  while for low level of  $\delta$ , it will be optimal to choose  $m = 0$ .

The intuition is that a more efficient NGO will not be affected by the reputation of the MNE

when making the decision to exercise a positive monitoring, whereas a less efficient NGO will be perceived as a credible regulator if the MNE has a high reputation. Therefore, the reputation of an MNE will determine the magnitude of the penalty and the level of the NGO's efficiency so that the threat becomes credible.

Figure 1 shows that for high  $\gamma$ , i.e. the level of inefficiency in monitoring, if  $\delta$  is low, i.e. low reputation, we are in region where  $m = 0$  and  $e^* = 0$ . For a low reputation value, an inefficient NGO does not affect the MNE's decision-making when administering a sanction. However, for the same level of inefficiency in monitoring, if  $\delta$  is high, we are in the region where  $m = m^*$  and  $e^* = 1$ . This would explain how an NGO chooses a target. Less efficient NGOs will choose an MNE with a high reputation, in order to exploit the MNE's aversion to having its reputation damaged. On the other hand, a more efficient NGO will take action against an MNE without pointing out its reputation. Conversely, when the degree of outsourcing increases (Fig.2), higher values of  $\sigma >$ , the region where it is optimal to monitor the MNE given its positive effort will be smaller. A large number of overseas subcontractors notably increases the MNE's costs of monitoring the social and environmental impact of its global suppliers, as well as indirectly affects the decision of the NGO to employ positive monitoring.

### 3 Warning

#### 3.1 Multinational Enterprise

Next, the warning regime is considered. When a violation by a Southern subcontractor is detected, the NGO sends a private message (a warning) to the CEO of the MNE explaining the outcome of its investigation.<sup>16</sup> The NGO's main objectives are to convince the MNE to continue working with the subcontractor and to encourage the correction of any wrongful behavior, in order for the company to comply with environmental and social standards.

Within this framework, the probability of the MNE being in compliance with environmental and social standards, will depend on the type of subcontractor. We assume that the subcontractor would be cooperative (or not) in correcting its behavior and that the NGO would receive an additional information at some cost,  $\omega \geq 0$  about the subcontractor type.<sup>17</sup> In this respect, a warning

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<sup>16</sup>Notice that the warning is not public.

<sup>17</sup>This additional cost can include the cost of implementing further controls, such as interviewing workers outside the

corresponds to the regime under which the NGO discloses some information to the MNE, which reduces the asymmetric information problem between the MNE and the subcontractor. Two states of the world are assumed,  $\Omega = 1, 2$ . In state 1 the subcontractor is not cooperative (i.e. the MNE's effort does not make a difference in reducing the probability of being perceived as non compliant). Conversely, the subcontractor is cooperative in state 2 (i.e. the MNE's effort makes a difference). We assume that with probability  $1/2$  we are in the state of the world 1, where  $p(e) = p$  for  $e \in \{0, 1\}$ , while with probability  $1/2$  we are in the state 2, where  $p(0) < p(1)$  for  $e \in \{0, 1\}$ . State of the world 1 is defined as  $S_b$ , i.e. the bad state, and state of the world 2 as  $S_g$ , i.e. good state.

The timing of the game is as follows:

1. (NGO) The NGO decides on the level of monitoring intensity and whether or not to disclose the information;
2. (MNE) The MNE decides the level of effort
3. The NGO receives information about the state of the world
4. If the MNE chooses  $e_1 = 0$ , then  $e_2 \in \{0, 1\}$  is decided
5. The outcome is realized and the MNE is penalized if perceived as non-compliant

The timing is summarized in Fig.6.

As in the previous case of immediate punishment, we will look for the subgame-perfect Nash equilibrium, and solve the game by backward induction. The choice of the MNE is considered first.

The MNE decides on the level of effort in stage 2. If the MNE chooses  $e_1^* = 1$ , the game ends with the realization of the outcome, as in the previous case.<sup>18</sup> If the MNE chooses  $e_1 = 0$  then a decision can be made to correct the behavior in stage 4, after a warning is received.

The NGO receives information about the state of the world in stage 3 at some cost,  $\omega > 0$ . The information is common knowledge once disclosed. At stage 1, the NGO decides on the level of monitoring intensity  $m$  and whether or not to disclose the information. In this regime the expected

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subcontractor factories, for instance, "at bus stop or at home, where workers might open up" about the actual work and safety conditions within the subcontractor ("Fast and Flawed Inspections of Factories Abroad", *The New York Times*, September, 1, 2013, ).

<sup>18</sup>Notice that if an MNE chooses  $e_1^* = 1$  it has already made the maximum effort and therefore, cannot make an additional effort in stage 4

outcome will be equal to:

$$E[p(e)] = \frac{1}{2}p + \frac{1}{2}p(e)$$

Notice that at stage 1, the NGO and the MNE do not know the state of the world. The probability of being perceived as compliant is defined as:

$$\text{if } e = 1 \text{ prob}\{\text{compliant}\} = 1/2p + 1/2p(1) = p'(1)$$

$$\text{if } e = 0 \text{ prob}\{\text{compliant}\} = 1/2p + 1/2p(0) = p'(0)$$

Importantly, the choice to disclose information is a commitment for the NGO; if the NGO decides to reveal any information at stage 1, it commits to telling the truth.<sup>19</sup>

When considering the case where  $e_1 = 0$  if  $S = S_b$ , i.e. the state of the world where effort does not matter, the profit of the MNE is:

$$\pi(1) = -\sigma c_2 - (1 - p)m\delta$$

$$\pi(0) = -(1 - p)m\delta$$

The MNE will chose  $e_2^*(m) = 1$  if there is a reward for effort in terms of profit:

$$-\sigma c_2 - (1 - p)m\delta \geq -(1 - p)m\delta$$

$$\Rightarrow e_2^* = 0 \text{ if } S = S_b$$

Therefore, in the case where  $S = S_b$ , it is never optimal for the MNE to make a positive effort. This condition generates a trade-off for the NGO about whether or not to reveal information.

If  $S = S_g$ , in the state of the world where effort matters, the profit of the MNE is:

$$\pi(1) = -\sigma c_2 - m\delta[1 - p(1)]$$

$$\pi(0) = -m\delta[1 - p(0)]$$

If  $S = S_g$ , the MNE will make an effort in stage 4, if the profit of making an effort is higher than the profit of zero effort:

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<sup>19</sup>The assumption is related to the fact that NGOs tend to build a reputation (Baron & Diermeier (2007), Baron (2012)).

$$\sigma c_2 \leq m\delta[p(1) - p(0)]$$

$$\Rightarrow m^{**} = \frac{\sigma c_2}{\delta[p(1) - p(0)]} \quad (3.1)$$

If the firm has already made an effort  $e_1 = 1$ , the game ends since the firm did its best. Therefore, in this case  $e_2^* = 0$ . The firm chooses  $e_1^* = 1$  if

$$\sigma c_1 \leq m\delta[p'(1) - p'(0)]$$

$$\Rightarrow m^* = \frac{\sigma c_1}{\delta[p'(1) - p'(0)]} \quad (3.2)$$

We assume here that  $c_2$ , i.e. the cost of making an effort ex-post (after the detection of violation and the warning), is higher than  $c_1$ , i.e. the cost of making an effort ex-ante (before the detection of a violation). This condition will generate a trade-off for the MNE, i.e. waiting for a warning and paying a higher costs or paying a lower cost ex-ante, given the uncertainty of detecting a violation.<sup>20</sup> This assumption will be relaxed in the next section and some comparative statics will be provided to see what happens when  $c_2 < c_1$ .

The decision of the MNE will be, as in the previous case (immediate punishment), whether or not to make an effort. The difference between the two regimes (immediate punishment versus warning) is that the MNE has a second chance with a warning and more information on the risks involved. The intuition is that if the MNE knows its effort does not matter to be perceived as compliant, this will reduce the incentive to make a positive effort ex-ante, since the MNE is working with a non-cooperative subcontractor.

### 3.2 Watchdog NGO

The NGO decides the level of monitoring intensity and whether or not to reveal information about the state of the world. If the NGO decides to disclose at stage 1, then it commits to revealing information at stage 3. The trade-off is that if the NGO reveals to the MNE that they are in a bad

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<sup>20</sup>This uncertain outcome depends on the probability of being discovered and the probability of operating with a cooperative (or not) subcontractor.

state (i.e. that effort does not matter) then the MNE will never make an effort. Therefore, the NGO would prefer to disclose information only under certain conditions. This scenario is explored in the remainder of this section.

The NGO takes into account the optimal decision of the MNE, and maximizes her expected utility.

$$E(U_{NGO}) = p'(e^*(m)) - [1 - p'(e^*(m))]D - \psi(m) - \omega$$

where  $\psi(m) = \gamma m$  are the cost of monitoring and  $\omega \geq 0$  is a cost of assessing the subcontractor type (cooperative or not cooperative). In the warning regime there are three possible scenarios, since there are three possible strategies for the MNE: 1) The MNE chooses to wait, i.e. make zero effort at stage 2 and positive effort at stage 4. In this case the NGO chooses an optimal level of monitoring and discloses the information; 2) The MNE decides to make zero effort before and after a warning, and the NGO does not employ any monitoring and does not reveal any information; 3) The MNE makes a positive effort at stage 2 and chooses no effort at stage 4. In this case the NGO chooses an optimal level of monitoring and does not reveal the information.

- 1)  $\{e_1 = 0, e_2 = 1\} \Rightarrow \{m^{**} \geq 0, R\}$
- 2)  $\{e_1 = 0, e_2 = 0\} \Rightarrow \{m^* = 0, NR\}$
- 3)  $\{e_1 = 1, e_2 = 0\} \Rightarrow \{m^* \geq 0, NR\}$

In Scenario 1, the NGO chooses a positive level of monitoring and decides to disclose the information:

$$E(U_{NGO}) = \underbrace{\frac{1}{2}p + (1-p)mD - \gamma m}_{probS_b} + \underbrace{\frac{1}{2}[p(1) + (1-p(1))mD - \gamma m]}_{probS_g} - \omega$$

In Scenario 2, the NGO chooses zero monitoring and does not reveal:

$$E(U_{NGO}) = 1/2p + 1/2p(0)$$



In Scenario 3, the NGO chooses a positive level of monitoring and does not reveal the information:

$$E(U_{NGO}) = \underbrace{\frac{1}{2}p + (1-p)mD - \gamma m}_{probS_b} + \underbrace{\frac{1}{2}[p(1) + (1-p(1))mD - \gamma m]}_{probS_g}$$

Scenario 1 (i.e. disclosing information) is compared with scenario 3 (i.e. not disclosing information) to analyze which conditions are optimal for the NGO to choose a positive level of monitoring and disclose the information about the risk, in order to persuade the MNE to make a positive effort. The NGO chooses a level of  $m = m^*$  and to reveal information if the expected utility is higher than the expected utility of not revealing information.

$$\frac{1}{2}p + \frac{1}{2}[p(1) + (1-p(1))m^{**}D - \gamma m^{**}] - \omega \geq \frac{1}{2}p + \frac{1}{2}[p(1) + (1-p(1))m^*D - \gamma m^*] \quad (3.3)$$

Let substitute the value of  $m^*$  and  $m^{**}$  (equations 3.2 and 3.1) in 3.3. This reveals under which condition it is optimal to choose a positive level of monitoring and to disclose the information about the risk in order to persuade the MNE to make a positive effort:

$$\gamma \leq \frac{(1-p(1))D}{\Delta c} (c_2 \Delta p' - c_1 \Delta p) - \delta \omega \frac{\Delta p \Delta p'}{\sigma \Delta c} \quad (3.4)$$

where  $\Delta c = c_2 - c_1$  is the difference between the cost of making an effort ex-post (after the warning) and the cost of making an effort ex-ante (before the warning). It is assumed here that  $c_2 > c_1$  and some comparative statics are provided to see what happens when  $c_2 < c_1$ . Meanwhile  $\Delta p = p(1) - p(0)$  and  $\Delta p' = p'(1) - p'(0)$ , can be defined as the marginal increase in the probability of being perceived as compliant given the positive effort.

**[Insert Fig. 3 about here]**

**Proposition 2:** For an MNE with a low reputational value, i.e. low  $\delta$ , even for a very efficient NGO it is optimal to disclose information about the risk of the outcome. There will be a value of  $\tilde{\delta}$  and  $\tilde{\gamma}$  above which it will be optimal to not disclose the information (Fig.3).

An MNE with little brand equity will have more incentive to conduct factory inspections of its global suppliers under the warning regime. Conversely, for an MNE with a valuable brand equity, disclosing information does not provide additional incentives.

The trade-off derives from the fact that if the NGO has decided the level of monitoring and to disclose information, it will commit to revealing the true information about the state of the world - the good as well as the bad. As this trade-off exists, it is preferable (or not) for the NGO to reveal the information only under certain conditions. The lower the reputation of an MNE, the greater the incentive to take advantage of a second chance increases. An MNE with a low reputation is less reluctant to make an effort if it knows it can actually reduce the probability of being perceived as non-compliant. This will be the case when the watchdog NGO provides the information about the subcontractor type. Any additional information concerning the risk of the outcome will affect then the MNE's decision to invest in CSR.

Some comparative statics are performed to determine to what extent the condition under which it is more effective to reveal information will change. Figures 4 and 5 show the results. If the degree of outsourcing increases (Fig.4) (a higher  $\sigma$ ), this will increase the region where it is more effective to share information about the subcontractor type with the MNE, for a level of  $\gamma < \tilde{\gamma}$ . This result relies on the fact that an MNE operating with a large number of subcontractors abroad has fewer incentives to monitor its global suppliers, since this will increase costs considerably. Moreover, this investment has an uncertain outcome due to the probability that the subcontractor will not comply with social and environmental norms despite internal monitoring. Therefore, the warning mechanism might provide more incentive to invest in CSR for an MNE with high degree of production dispersion. In the case where  $c_2 < c_1$ , i.e. when the cost of making an effort ex-ante is higher than the cost of waiting (i.e. making an effort after receiving a warning from the NGO), the region where it is more effective to reveal information increases significantly (Fig.5). In that case, the MNE, for any value of  $\delta$ , has an incentive not to make an effort ex-ante and to wait for a warning before correcting any wrongful behavior. The parameter that will determine the decision of the NGO to disclose (or not) the information is  $\gamma$ , i.e. the level of inefficiency in doing monitoring: low efficient NGOs will choose the warning mechanism. The difference between the two costs might be related to the industry in which the MNE operates. The MNE will internalize

those costs and decides whether or not to invest in CSR before any activist campaigns.

**[Insert Fig.4 and Fig.5 about here]**

## 4 Conclusion

This paper analysed two distinct strategies adopted by watchdog NGOs to monitor MNE compliance with environmental and social standards: *immediate punishment* versus *warning*. The theoretical model studied which regulatory strategy is more effective in persuading MNEs to invest in CSR, which allows an MNE to reduce the risk of sanction by an NGO, i.e. becoming the target of adverse publicity. Since NGOs differ in terms of efficiency and MNEs have varying reputational levels, the result is a mixed regime exists as a result. We showed that a warning is preferable to punitive action when the reputation of the firm is sufficiently low and the cost of doing effort ex-post (after the verification) is higher. An MNE with low reputation or a high degree of outsourcing will have a greater incentive to conduct factory inspections of its global suppliers under the warning regime. Conversely, when the visibility of an MNE is high, disclosing information does not provide additional incentives.

Thus, this paper shows how an MNE's response is equally dependent on the enforcement strategy adopted by an NGO (warning versus immediate punishment). While the present analysis provides new insights on how non-governmental enforcement shapes MNE behaviour, it also opens an avenue for future research. The non-governmental enforcement pattern is characterized by different types of NGOs that can separately and simultaneously monitor and inspect a firm. A first area for further research could be extending the approach of this paper by modeling the competition among watchdog NGOs, in order to study the extent to which competitive pressure can affect the strategies of a non-governmental regulator. Additionally, it might be interesting to analyze the interaction between a self-interested non-governmental regulator, that follows some private objectives when making enforcement strategy decisions, as well as a benevolent state regulator.

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Figure 1: Immediate Punishment

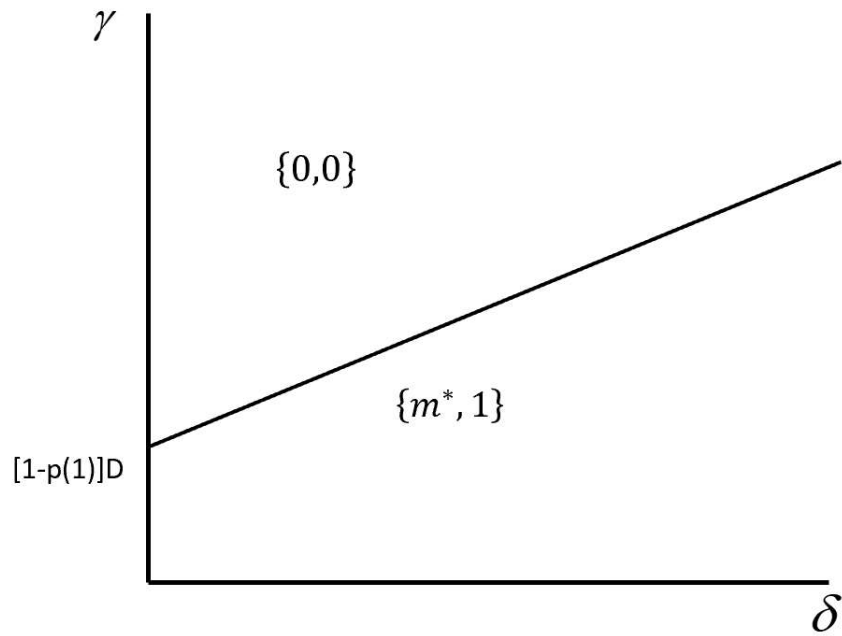


Figure 2: Immediate Punishment with higher degree of outsourcing

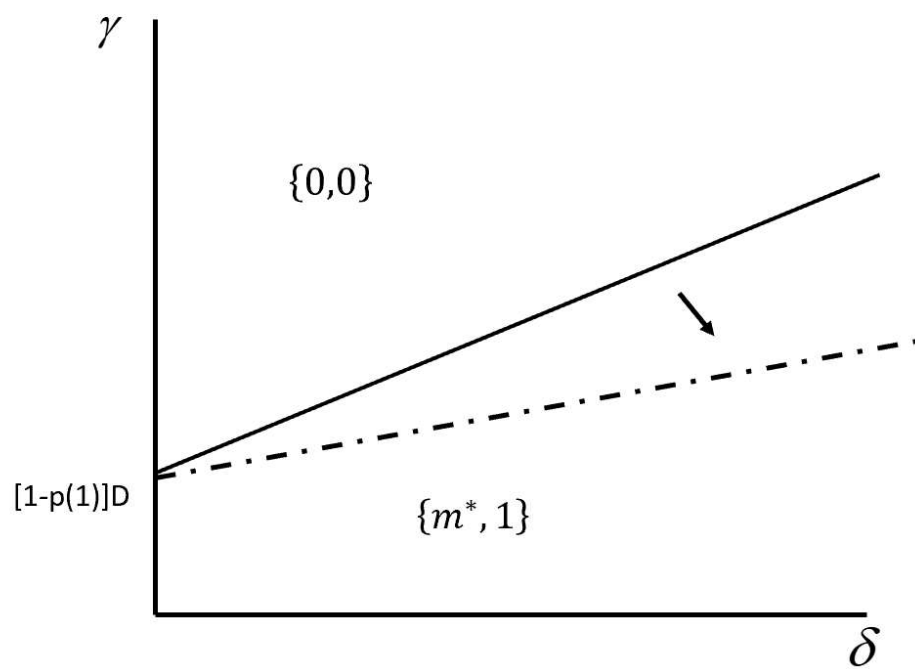


Figure 3: Reveal or not reveal information

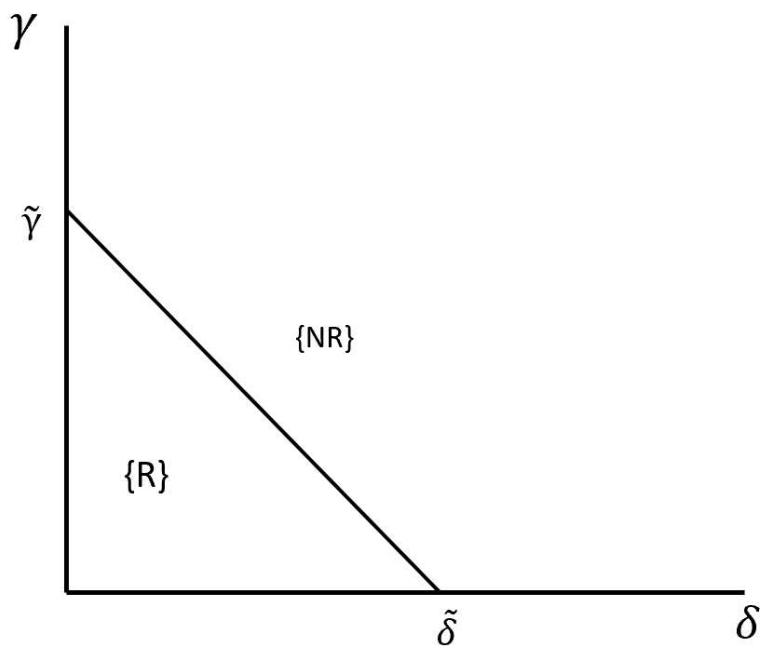




Figure 4: Reveal or not reveal information with higher degree of outsourcing

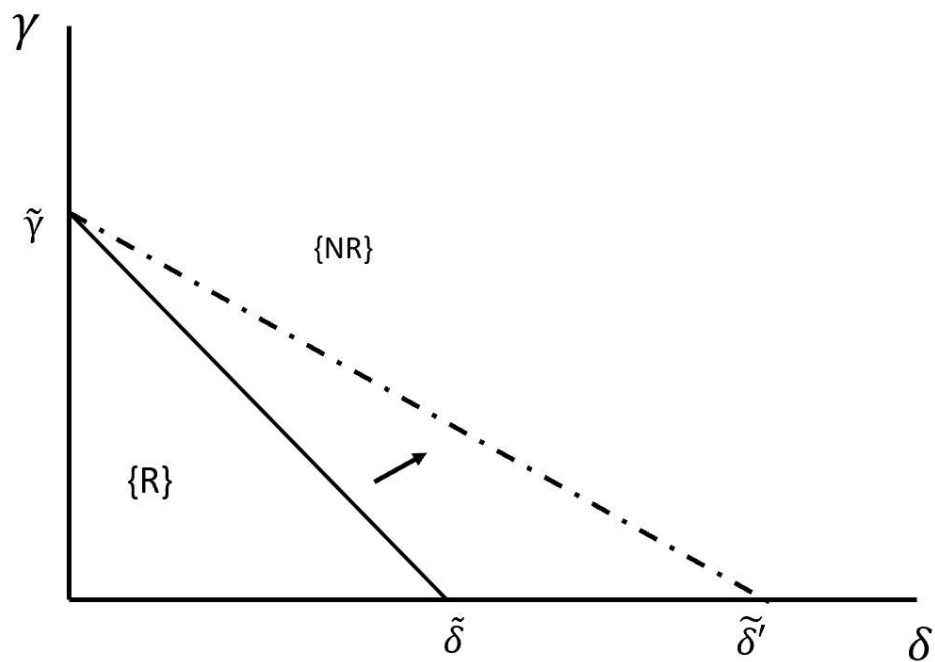


Figure 5: Reveal or not reveal information when  $c_2 < c_1$

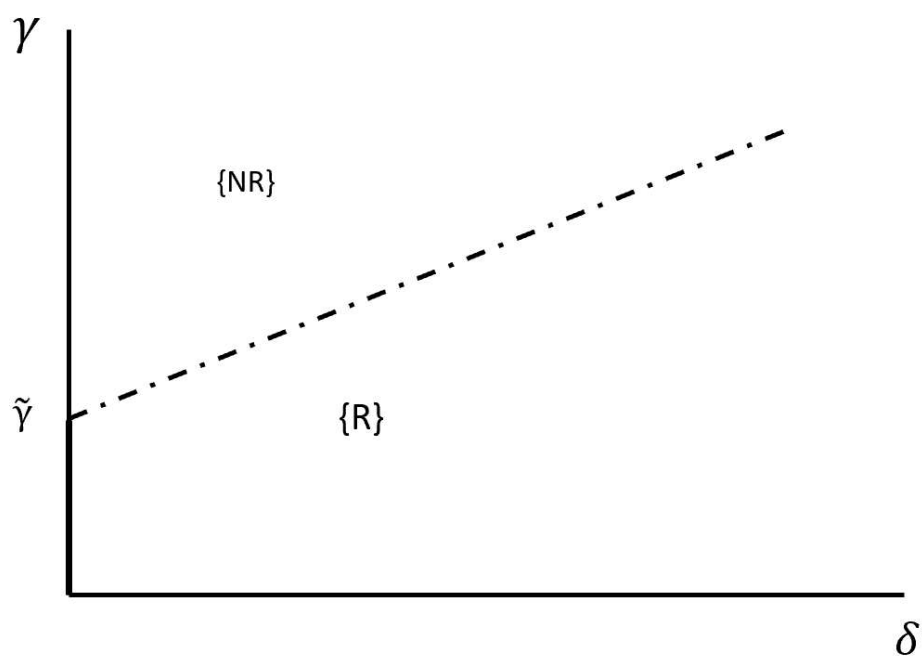


Figure 6: Structure of the game in the warning regime

