

# ENFORCEMENT STRATEGIES, COMPLIANCE PROGRAMS, AND THE INTERMEDIARY GATEKEEPERS

Sharon Oded\*

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## ABSTRACT

**A**lthough aiming at the same end, the deterrence and compliance approaches to regulatory enforcement follow entirely different philosophies. The scholarly literature identified various imperfections of each of the ‘stand-alone’ approaches, and used the analytical framework of the game theoretic prisoner’s dilemma to suggest mixed strategies to cope with these imperfections. This paper confronts the promises of the previously suggested mixed strategies with a major potential pitfall of these strategies, namely, information asymmetry between regulators and regulatees. It offers a combination of two innovative mixed strategies, *Corporate Compound Liability* and *Gatekeeper-Based Targeted Enforcement Strategy*, to cope with the information asymmetry pitfall while sustaining the promises of the previously suggested mixed strategies.

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## 1. INTRODUCTION

In many regulatory areas, two major enforcement approaches have commonly been advocated by scholars: the *deterrence* approach and the *compliance* approach. Although aiming at the same goal of regulatory compliance, the deterrence and compliance approaches follow entirely different philosophies. Crudely speaking, the *deterrence* approach perceives regulatees as ‘*rational agents*’ or ‘*amoral calculators*,’ who are willing to comply with the law only when - and to the extent to which - it

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\* Sharon Oded, European Doctorate in Law and Economics (EDLE), Rotterdam Institute of Law and Economics, Erasmus University Rotterdam, and a visiting scholar at the Boalt Hall School of Law, University of California, Berkeley; [oded@law.eur.nl](mailto:oded@law.eur.nl).

coincides with profit-maximization goals.<sup>1</sup> According to this line of thinking, enforcement systems should induce compliance through *punishment of misconduct*; by imposing a sanction for regulatory violations, the deterrence model seeks to manipulate the expected payoffs associated with subjects' behavioral decisions, and induce them to opt for compliance.<sup>2</sup> For that reason, the deterrence approach endorses penal, accusatory, and adversarial styles of enforcement, which go harsh on law-breakers; it warrants a close monitoring of potential violators, and endorses a careful investigation of all signs of violations. This approach adheres to the 'black-letter of the law' and concentrates on coercing the literal orders of laws.<sup>3</sup>

An alternative approach is offered by the *compliance* school, which departs from the pure welfare economic perspective and uses the valuable insights of behavioral studies to tackle the regulatory enforcement riddle from a different standpoint. Under the compliance approach, market agents are perceived as having a *law-abiding nature* which directs them to obey the law 'just because it is a law.'<sup>4</sup> According to this approach, law-breaking should not be solely explained by profit-maximization considerations. Instead, various alternative reasons, such as honest mistakes, accidents, and misinterpretation of the law should be considered.<sup>5</sup> Hence, the compliance approach promotes a conciliatory style of enforcement.<sup>6</sup> It rests on the belief that compliance can be best achieved by *persuasion* rather than by a *threat of sanctions*. The compliance approach accentuates cooperation rather than confrontation, and conciliation rather than coercion.<sup>7</sup> As such, this approach ascribes

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<sup>1</sup> According to the deterrence approach, regulatory subjects decide whether to obey the law according to a cost-benefit analysis; agents compare their expected compliance utility, *i.e.*, the expected payoffs when they obey the law, to the expected violation utility, *i.e.*, the expected payoffs when they violate the law. Consequently, agents will obey the law only when their expected compliance utility is greater than their expected violation utility. See, for instance, (Becker 1968; Stigler 1970; Kagan and Scholz 1984; Bardach and Kagan 1982, p. 44; Spence 2001, p. 919; Heyes 1998; Polinsky and Shavell 2000).

<sup>2</sup> See, for instance, (Stigler 1970; Heyes 1998; Polinsky and Shavell 2000; Cooter 1984; Becker 1989; Block 1991).

<sup>3</sup> See, for instance, (Johnstone 2003, p. 10; Baldwin and Cave 1999, p. 98; Pearce and Tombs 1991, p. 45; Pearce and Tombs 1990).

<sup>4</sup> See, for instance, (Kagan and Scholz 1984; Bardach and Kagan 1982; Hawkins 1990).

<sup>5</sup> See, for instance, (Bardach and Kagan 1982, p. 63; Spence 2001, pp. 931-936).

<sup>6</sup> See, (Shover, Clelland, and Lynxwiler 1986, pp. 127-9).

<sup>7</sup> See, (Gunningham 2007, p. 116; Hawkins 1984, p. 8).

to enforcement systems advisory and educative roles.<sup>8</sup> Here, enforcement is governed by *regulatory tolerance*: regulations are not enforced when they do not make sense; technical violations which do not involve substantial risk are overlooked; regulators take into account the particular circumstances of the observed violation; and voluntary measures adopted by subjects are accepted even if they do not present a literal compliance, given that they achieve the regulatory goals. Finally, prosecution is sparingly used and, as far as possible, left in the background as a matter of last resort.<sup>9</sup>

Given the discrepancy between these two approaches, at first glance they seem to contradict each other, in the sense that following one approach means abandoning the other.<sup>10</sup> Such a perspective generates an *enforcement dilemma*: ‘which enforcement strategy should inspire the design of the regulatory enforcement system?’ or, if a more pragmatic stand is taken, this enforcement dilemma can be boiled down to two distinctive choices faced by the regulator: first, what should be the *probability of detection*? And second, which *regulatory measure* should be imposed against regulatory violations? As for the first choice, a deterrence-oriented enforcement strategy may warrant close monitoring and frequent inspections of regulatory subjects, which lead to relatively high probability of detection, while a compliance-oriented strategy may take a softer stand on the matter. Similarly, the former strategy is more likely to endorse the use of meticulous prosecution and harsh punishment, while the latter may employ measures, such as guidance, persuasion, and other cooperative tools to induce voluntary compliance.

A survey of the existing literature on regulatory strategies reveals that the tension between the two schools is long-lasting.<sup>11</sup> Apparently, each approach is fraught with various perils that may prevent it from maximizing the social welfare at all times. The *deterrence approach* may be found counterproductive, for instance,

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<sup>8</sup> See, (Hawkins 1983, p. 36): “[I]f repair is the primary objective in a compliance system, in a sanctioning system it is retribution.”

<sup>9</sup> See, (Gunningham 2007, p. 117).

<sup>10</sup> Some scholars perceive deterrence and compliance approaches as opposing strategies. See for instance, (Shover, Clelland, and Lynxwiler 1986, pp. 127-9; Kelman 1981).

<sup>11</sup> See, for instance, the series of articles published in the British Journal of Criminology: (Pearce and Tombs 1991; Pearce and Tombs 1990; Hawkins 1990; Hawkins 1991).

towards subjects who are motivated by a sense of social responsibility.<sup>12</sup> In addition, it may create substantial social costs associated with the regulatory cat-and-mouse game.<sup>13</sup> On top of that, it may fail to cope with regulatory deficiencies such as inefficient and ambiguous regulations.<sup>14</sup> Similarly, the *compliance approach*, is vulnerable to some serious risks such as credulousness,<sup>15</sup> capture and corruption,<sup>16</sup> and may be abused by opportunistic regulatory subjects to the detriment of social welfare. Therefore, browsing through the existing literature it becomes apparent that the solution for the enforcement dilemma does not rest in any of the ‘stand-alone’ approaches. Such a conclusion is supported by the fact that in most regulatory contexts, market population is rather heterogeneous and encompasses of both law-abiding players and amoral calculators.<sup>17</sup> Clearly, any scholarly approach that assumes homogeneity of regulatory subjects is unlikely to address all regulatory subjects, and therefore unlikely to maximize social welfare.<sup>18</sup>

The insights regarding the imperfection of each of the ‘stand alone’ enforcement approaches have led scholars to acknowledge the need in reconciliation

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<sup>12</sup> Harsh enforcement practices may have a demoralizing effect; in the extreme cases, harsh and uncompromising enforcement may undermine the good will of actors who are motivated by a sense of responsibility; a strict and intransigent enforcement system may bring laws to lose their perceived legitimacy. In that case, the enforcement system is likely to produce the opposite behavior from that sought. See, for instance, (Pearce and Tombs 1991; Pearce and Tombs 1990; Hawkins 1990; Hawkins 1991; Tyler 1997; Casper, Tyler, and Fisher 1988).

<sup>13</sup> See, (Tyler 2006, pp. 22-23). Such ‘cat-and-mouse game’ cost may include the high administrative costs associated with the public enforcement system (Scholz 1984a, 207); high litigation costs (Ogus and Abbot 2002, p. 505); error costs (Heyes 1998, p. 55; Polinsky and Shavell 2000, p. 23); and evasion costs (Heyes 1998, p. 18; Malik 1990; Innes 2001).

<sup>14</sup> Some of the rulemaking deficiencies (such as inefficient and ambiguous laws) may be recovered by a prudent enforcement system which focuses on the substantial purpose of laws and endorses credible governance discretion. The formal style of the deterrence model may hamper the enforcement system’s ability to cope with such deficiencies. See, (Bardach and Kagan 1982, p. 34; Scholz 1984a; Scholz 1984b).

<sup>15</sup> When the regulatory subjects are assumed to be ‘good-apples,’ compliance approach may stimulate a policy which is unable to induce compliance among those who are not intrinsically socially committed. See (Gunningham 2007, p. 123). See also (Braithwaite and Ayres 1992, p. 25): “*The problem with the persuasion model, however, based as it is on a typification of people as basically good – reasonable, of good faith, motivated to abide by the law – is that it fails to recognize that there are some who are not good, and who will take advantage of being presumed to be so.*”

<sup>16</sup> See, for instance, (Faure 2009, p. 337): “*when cooperative strategy has failed and the administrative agency has to change its position to a deterrence style, the cooperation and strong links between pollute and the agency may have made it difficult or even impossible to change to a deterrence approach when necessary.*” See also (Bardach and Kagan 1982, p. 111).

<sup>17</sup> See, for instance, (Bardach and Kagan 1982, p. 60, 64).

<sup>18</sup> See, (Braithwaite and Ayres 1992, p. 24).

between the deterrence and compliance approaches.<sup>19</sup> Using the analytical framework of the game-theoretic prisoner's dilemma, commentators have suggested various mixed strategies, in which enforcement strategies from both approaches are used in harmony to cope with differently motivated regulatees. These mixed regulatory strategies lie at the heart of this study. The goal of this paper is to confront the promises of the existing mixed strategies against a major practical pitfall of these strategies, which has received only little attention in the existing literature, namely, *information asymmetry* between regulators and regulatees. Additionally, this paper aims to offer an enforcement framework that combines the two enforcement approaches while coping with the information asymmetry pitfall. To this end, the paper starts by canvassing the major mixed enforcement strategies suggested in the literature and their expected positive impact on social welfare (section 2). Next, it explores a major pitfall of the mixed strategies, namely, information asymmetry (Section 3). The following part (section 4) suggests an analytical framework that distinguishes between two regulatory choices faced by regulators: (a) the probability of detection, determined by the level of detection activities undertaken by the authorities; and (b) the gravity of regulatory measures employed against violators, determined by the level of sanctions imposed.<sup>20</sup> Using the analytical framework developed in this paper, section 4 further offers a combination of two innovative mixed enforcement strategies, *Corporate Compound Liability* and a *Gatekeeper-Based Targeted Enforcement Strategy*, that copes with the information asymmetry pitfall while sustaining the promises of the previously suggested mixed strategies.

## **2. RESTORING HARMONY BETWEEN DETERRENCE AND COMPLIANCE APPROACHES**

Conventionally, regulatees' motivations for compliance with regulations have been explained both by the *deterrence school*, according to which subjects are motivated by a sense of *rationality*, and by the *compliance school*, according to which

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<sup>19</sup> See, for instance, (Braithwaite and Ayres 1992, p. 25): "*To reject punitive regulation is naive; to be totally committed to it is to lead a charge of the light brigade. The trick of successful regulation is to establish a synergy between punishment and persuasion.*"

<sup>20</sup> To simplify the analysis, the paper focuses on monetary sanctions (fines), and disregards alternative sanctioning measures such as imprisonment and license revocation.

subjects are motivated by their *law-abiding nature*. As shown below, when using the game theoretic prisoner's dilemma as the analytical framework for the analysis, a third motivation may be revealed. Such a motivation, which follows from *reputation concerns*, involves the long-term impact that (non)compliance decisions may have on players' utility.

### 2.1. The Reputation Mechanism in the Regulatory Context

'Reputation' commonly refers to judgments of past performance of actors, used to anticipate their future behavior.<sup>21</sup> For many years the notion of reputation has been broadly used in explaining behavioral choices in both political science and economics.<sup>22</sup> As widely agreed, a good reputation may comprise an important asset for a firm, allowing it to attract customers, employees, and investors (and sometimes even to charge an extra premium for it).<sup>23</sup> By contrast, a poor reputation may impose a serious burden on a firm, discouraging other market players from interacting with it.<sup>24</sup> Therefore, market players are often attentive to the potential impact of their behavioral decisions on their reputation.

When considering the impact of (non)compliant behavior on regulated firms' reputation, and the function of reputation in the regulatory arena, it might be useful to distinguish between two reputational dimensions: the first, which I label here as '*horizontal reputation*,' involves the impact of a (non)compliant past behavior on the evaluations of the incumbent (and its future behavior) by **other market-players**. Consider, for instance, a recalcitrant firm that has been seriously fined for a severe regulatory violation. Acknowledging the severe legal risk faced by such a firm, potential trading partners, customers, employees, investors, and other stakeholders, may be discouraged from interacting with the firm due to the damage caused to its horizontal reputation. The second reputational dimension, labeled here as '*vertical reputation*,' is somewhat unique to the regulatory context, and consists of evaluations

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<sup>21</sup> See, (Miller 2003).

<sup>22</sup> See, (Axelrod 1984; Keohane 1984; Abreu and Gul 2000).

<sup>23</sup> See, (Shapiro 1983).

of the incumbent (and its future behavior) by the **regulatory agency**. That is, the regulatory agency may evaluate a regulated firm's past performance, and thereby estimate the firm's level of future commitment to compliance.<sup>25</sup> Firms that have proven to be responsible and adhering to the regulatory standards may benefit from a 'good vertical reputation,' which may indicate a relatively high future commitment to compliance. Other firms, which have repeatedly engaged in regulatory violations, may suffer from a 'poor vertical reputation,' which may indicate a relatively low future commitment to compliance. Such a vertical reputation may affect future regulatory responses by the agency towards the firm, and thereby affect the firm's future payoffs.

The impact of the *horizontal reputation* on firms' future payoffs is quite straightforward; firms that have a poor horizontal reputation among their business partners, potential customers, and other potential stakeholders, may suffer from a serious competitive disadvantage which may hamper their functioning in the market. In extreme bad reputation cases, firms may find themselves driven out of the market.<sup>26</sup> Hence, horizontal reputation considerations play an important role in motivating regulated firms to comply with regulations. In some cases, such potential reputation consequences induce firms to engage in voluntary regulatory programs under which they commit themselves to behavioral standards that are even stricter than the regulatory ones.<sup>27</sup>

Unlike the wide acknowledgment of the *horizontal reputation*, the conventional thinking of regulatory systems may be fuzzy with respect to the potential impact of the *vertical reputation* on regulatees' future payoffs. The next

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<sup>24</sup> See, (Scholz 1984b, p. 396).

<sup>25</sup> The paper looks at regulatory (public) enforcement systems where enforcement actions are taken by governmental agencies. Therefore, vertical reputation is assumed to be concerned with evaluations done by such agencies, as opposed to evaluations by potential victims or Non-Governmental Organizations.

<sup>26</sup> For the importance public image which result from (non)compliance with regulations, see, for instance, (Fisse and Braithwaite 1983).

<sup>27</sup> See, for instance, (Taschner 1998), who discusses the European Eco-Management and Audit Scheme, called EMAS, which is a voluntary scheme in which the participants are industrial sites that want to improve and publicize their environmental performance. For that purpose they have to adopt a company environmental policy which is aimed at reasonable continual environmental improvement. As

subsection seeks to lift the fog of the function of vertical reputation in the regulatory arena, and to present various models suggested in the scholarly literature, in which vertical reputation is used to determine the optimal regulatory response.

## 2.2. The Game-Theoretic Tit-for-Tat Integration

Applying the analytical tools of game theory, the Law and Economics scholarly literature suggests several enforcement strategies under which the deterrence and compliance approaches are combined. The aim of these mixed strategies is to produce a unique blend of deterrence and compliance strategic responses in a way that may remedy the flaws of any one approach by the strengths of the other. Essentially, these strategies attempt to go harsh on flagrant offenders while going soft on responsible players.

The cornerstone of the reconciliation between deterrence and compliance theories was laid by John Scholz (1984a, 1984b).<sup>28</sup> In his path breaking studies, Scholz analyzes the regulatory enforcement scene, applying the valuable tools of game theory. Scholz's contribution was immensely influenced by the pioneering work of Robert Axelrod, who had shown that a stable cooperation may emerge under the repeated prisoner's dilemma game if a reciprocal strategy, known today as the "*Tit-for-Tat*" strategy, was followed.<sup>29</sup> Scholz analysis of the regulatory enforcement scheme is done through the lances of the game theoretic prisoner's dilemma game:<sup>30</sup> under this setting, both parties have to choose whether to cooperate in the regulatory game; more precisely, the regulated firm has to choose whether to comply with the

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shown by the author: "*the real motives for participation are improved public image and pressure from customers.*"

<sup>28</sup> See, (Scholz 1984a; Scholz 1984b).

<sup>29</sup> See, (Axelrod 1984; Axelrod 1980a; Axelrod 1980b; Axelrod 1981). The Tit-for-Tat strategy involves a cooperative play on the first round and echoes the other player's previous move in next rounds. As shown by Axelrod, when a game is played between repeated players for an infinite or an unknown period of time, sustainable cooperation may be reached if one player starts by cooperating, and sticks to cooperation unless provoked by his counterpart defection. If provoked, the player shall retaliate in the next round of the game by defecting. In any case, the player is fast to forgive and will reciprocate cooperation by cooperating. It should be noted that according to (Axelrod 1984) both players are required to be concerned enough about the future payoffs, and thereby abstain from succumbing to the temptation of defecting in a single game. See also, (Scholz 1984a, p. 191).

<sup>30</sup> See, (Scholz 1984a; Scholz 1984b; Scholz 1991; Scholz 1997).

regulation or to evade, while the agency has to choose whether to employ a cooperative or a defective (deterrence) enforcement strategy. Applying Axelrod's Tit-for-Tat strategy to the regulatory ecology, Scholz shows that for a repeated game with an unlimited duration, both parties may determine cooperation as their dominant strategy;<sup>31</sup> if the agency adopts a Tit-for-Tat strategy and reciprocates firms' behavioral choices, it may generate a mutually beneficial regulatory cooperation.<sup>32</sup> More specifically, according to Scholz's analysis, the agency should set a minimal level of compliance, below which firms' actions are deemed defection. Regulatees that meet this minimal level of compliance are subject to a cooperative response by the agency; by contrast, those who do not meet the basic level of compliance incur a rigorous enforcement response.<sup>33</sup> Under these circumstances, regulatees are expected to realize that a non-cooperative move will be followed by future retaliation (deterrence strategy), whereby short-sighted gains may be outweighed by future losses. As a result, regulatees are likely to opt for compliance, and the regulatory game is likely to reach a cooperative equilibrium.

Another mixed regime which emerged in a series of alternative models is known as the "*state-dependent enforcement strategy*."<sup>34</sup> Similarly to Scholz's analysis, the state-dependent strategy relies on a bifurcated enforcement strategy which is determined by regulatees' past performance in a repeated regulatory game. In the simplest form of the state-dependent regime, the authority classifies subjects into two groups based on their past performance, *i.e.*, 'group C,' which includes corporations that were not previously audited or those who were audited and found *complying* with the regulation in the most recent inspection, and 'group V,' which includes those were found *violating* the regulation in the most recent inspection. According to the model, when a group-C-corporation is found violating the

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<sup>31</sup> As in Axelrod's context (see *supra* note 29), here as well, stable cooperation is contingent upon the discount parameter to be high enough. The discount parameter is the product the standard discount rate used to determine the current value of future payoffs, and the perceived probability in any given round that there will be another round (Scholz 1984a, p. 189).

<sup>32</sup> See (Scholz 1984a; Scholz 1991, p. 118).

<sup>33</sup> See (Scholz 1984b, p. 393).

<sup>34</sup> The mathematical model of state-dependent enforcement regime was first demonstrated in (Landsberger and Meilijson 1982). This model was extended later-on in a wide range of studies, including (Greenberg 1984; Harrington 1988; Russell 1990; Harford and Harrington 1991; Harford 1991a; Harford 1991b; Harford 1993; Raymond 1999; and Friesen 2003).

regulation, it is reclassified into group V, without bearing any additional sanction. By contrast, when a group-V-corporation is found violating the regulation, it remains in group V and bears the maximal possible sanction.<sup>35</sup> This model provides regulatees with a powerful incentive for compliance, using a method which is labeled by Harrington as “*penalty leverage*.”<sup>36</sup> When deciding whether to comply or violate the law, corporations take into account not only the direct sanction that would be levied, but also the significant consequences of their classification as compliant or non-compliant. More specifically, group-V-corporations should consider the *benefit* which may result from a certain violation, against the total *costs* which may result from violation detection (*i.e.* harsh punishment and frequent inspections, coupled with the present value of the lost opportunity to move to group C and enjoy a lenient treatment in the next period). Similarly, a group-C-corporation should consider the potential *benefits* of the considered violation and the *costs* which may result from violation detection (*i.e.*, the present value of the exposure to *harsh penalties* and *frequent inspections* in the next-period).<sup>37</sup>

A third example for a Tit-for-Tat-based regulatory strategy was introduced by Braithwaite & Ayres, in the form of ‘**responsive regulation**.’<sup>38</sup> The basic idea of this approach is the responsiveness of enforcement agencies to the conduct of those they wish to control.<sup>39</sup> Unlike Scholz’s strategy, which assumes rationality of agents, the ‘responsive regulation’ approach remains adjacent – at least at initial stages - to the point of departure of compliance models, and presupposes a ‘law-abiding nature’ of subjects.<sup>40</sup> In view of that, the responsive regulation approach promotes the use of ‘soft’ regulatory measures, such as persuasion and guidance, as the first enforcement measures to be used. Under this strategy, regulators should be attentive to the reactions of regulatees before escalating the regulatory intervention. At the heart of

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<sup>35</sup> The simplest form is based on (Harrington 1988), where the dynamic state-dependent approach is introduced with a varying *sanction* across different groups of regulatees. An alternative form of state-dependent enforcement regime may make individuals subject to varying *probabilities of detection*. See, for instance, (Landsberger and Meilijson 1982; and Greenberg 1984).

<sup>36</sup> Harrington refers to ‘*leverage*’ as the property of a firm having “*an incentive to comply with regulations even though its cost of compliance [in] each period exceeds the expected penalties for violation, or even the maximum penalty that can be levied in any period.*” See (Harrington 1988, p. 32).

<sup>37</sup> See, (Suurmond 2008, p. 91).

<sup>38</sup> See, (Braithwaite and Ayres 1992).

<sup>39</sup> See, (Braithwaite 2002, p. 29).

the responsive regulation approach lays the ‘*Enforcement Pyramid*,’ which illustrates an escalating enforcement strategy that an agency may follow.<sup>41</sup> The pyramid is composed of the least intrusive interventions at the bottom (*e.g.*, persuasive, advisory and conciliating measures), moderate administrative measures at the middle (*e.g.* warnings, civil sanctions), and harsh penalties at the top (*e.g.*, criminal penalties), with incapacitation sanction at the apex.<sup>42</sup> The method promoted by the responsive regulation approach comprises a different application of Axelrod’s Tit-for-Tat strategy with an escalating system of sanctions; enforcement agencies should initially adopt a compliance approach toward regulatory subjects, using a variety of persuasive and advisory tools. In case this approach fails to produce compliance, the agency should shift to a series of methods with a gradual increase in pressure, starting from soft practices (such as warnings), gradually escalating to administrative sanctions, and eventually aggravating to criminal penalties and incapacitation.<sup>43</sup> The escalation of *measures* should be responsive to the degree of uncooperativeness of the firm, and it should be coupled with an increase in the *probability of detection*, *i.e.*, in the frequency of inspection.<sup>44</sup>

The overview of the alternative mixed strategies suggested in the literature reveals the role of vertical reputation as a reconciling mechanism that takes the sting out of the enforcement dilemma; instead of choosing between deterrence and compliance approaches, regulators may rely on the reputation mechanism in order to adopt a mixed strategy, under which regulatory responses of both enforcement styles

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<sup>40</sup> See, (Braithwaite and Ayres 1992, pp. 21-7; Braithwaite 2002, p. 29).

<sup>41</sup> The argument that an enforcement pyramid may induce higher levels of compliance was firstly made in (Braithwaite 1985).

<sup>42</sup> The specific measures placed in the different layers are illustrative only and can be replaced by other measures which: (1) are gradually structured in their gravity; and- (2) headed by a credible peak measure which is sufficiently powerful to deter the most flagrant regulatory subject; See, (Gunningham 2007, p. 123; Braithwaite and Ayres 1992, pp. 35-6; Braithwaite 2002, p. 30). As suggested by the literature, the greater the gravity of the pinnacle sanction, the greater its capacity to induce regulatees’ compliance using persuasive measures at the bottom of the pyramid. See, (Braithwaite and Ayres 1992, pp. 40-1): “*the bigger the sticks, the less they use them.*”

<sup>43</sup> See, (Braithwaite and Ayres 1992, pp. 35-8; Braithwaite 2002, pp. 30-31).

<sup>44</sup> See (Braithwaite and Ayres 1992, p. 38). It should be noted that the applicability of responsive regulation has been questioned by some empirical evidence. (Mascini and Van Wijk 2009), for instance, have questioned the assumptions underlying the responsive regulation framework and showed that enforcement agents are often inconsistent when applying the different enforcement styles; they may be impeded in applying the most adequate regulatory response; and do not always account for the

are used intermittently to address differently motivated regulatees. It is important to notice that according to the mixed strategies suggested in the literature, the nature of the regulatory response employed in each case (*i.e.*, deterrence- or compliance-oriented response), applies to both dimensions of the regulators' choice; the *probability of detection* and the gravity of the *actual enforcement measure* to be imposed. In other words, compliance-oriented regulatory response may mean relatively infrequent inspections (low probability of detection) as well as guidance and persuasion responses (conciliatory measures). Deterrence-oriented responses, on the other hand, may include close monitoring and frequent inspections (high probability of detection), as well as strict investigation, prosecution, and sanctioning (legalistic measures).<sup>45</sup>

Summing up, each dimension of firms' reputation may generate a reciprocal response at two different levels: a firm's *compliant behavior* may generate both a good vertical and a good horizontal reputation, which, in turn, trigger *compliance* strategies by the regulatory agency, and *cooperative* responses by other market players, respectively. Similarly, a firm's *recalcitrant behavior* may generate a poor vertical as well as a poor horizontal reputation, which, in turn, trigger *deterrence* strategies by the regulatory agency, and *non-cooperative* responses by other market players, respectively. Having clarified the economic functions of the reputation mechanism in the regulatory framework, I turn now to consider the improvements of social welfare that such mixed strategies may offer.

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adverse consequences that their responses may have due to potential misperceptions of regulatory subjects.

<sup>45</sup> The studies discussing the mixed strategies often do not separate the application of compliance or deterrence strategies with respect to the *probability of detection* or the *actual enforcement measure to be imposed*. In most studies, the application of an enforcement strategy combines "monitoring and prosecuting activities in a single enforcement choice," see - (Scholz 1984a, p. 195; Scholz 1984b, pp. 387-8). With respect to responsive regulation see, for instance, (Braithwaite and Ayres 1992, p. 38): "[F]irms that resist initial compliance will be pushed up the enforcement pyramid. Not only escalating penalties, but also escalating frequency of inspection and tripartite monitoring by trade unions [...] can then negate the returns to delayed compliance"; with respect to state-dependent models see, for instance, (Landsberger and Meilijson 1982, p. 335): "Dynamic state dependencies can be introduced through both the penalties function or the method of detection."

### 2.3. The Social Gains Associated with the Mixed Strategies

Mixed strategies have three major positive impacts on the overall efficiency of the regulatory system:

***Achieving Stable Cooperation:*** the mixed strategies depart from any a-priori presumption regarding regulatees' nature, and employ strategic reciprocal responses. As a result, both players, *i.e.*, the regulator and the regulatees, who engage in repeated interactions, realize that a 'cooperative attitude' is the choice that maximizes their own benefit.<sup>46</sup> By that, the mixed strategies generate a *stable* regulatory cooperation which is socially beneficial.

***Inducing Internal Enforcement Mechanisms:*** over time, the application of mixed strategies encourages regulatees to be *pro-active* in securing self-control. As we have seen, the long term regulatory cooperation is privately beneficial for regulated firms. However, if a regulated firm is involved in various regulatory violations – even if inadvertent ones – its commitment to compliance may lose its credibility, and the firm may turn to non-cooperative interactions with other market players and with the regulator. Therefore, regulatees who wish to avoid the painful long-term consequences associated with non-cooperative interactions may find it privately beneficial to employ internal enforcement mechanisms that reduce the probability of inadvertent regulatory violations.<sup>47</sup> Such mechanisms, usually referred to as “compliance programs,” may include various control measures.<sup>48</sup>

***Targeted Enforcement:*** mixed enforcement strategies facilitate the application of targeted enforcement, under which enforcement expenditures are

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<sup>46</sup> See, (Scholz 1984a).

<sup>47</sup> See, for instance, (Bernstein 2001, p. 1764): “As the reputational penalty for breach of contract increases, more commercial commitments are transformed into self-enforcing obligations, and cooperation can emerge as a long-term equilibrium.”

<sup>48</sup> See, (Bardach and Kagan 1982, p. 133) who have shown that the threat from tough enforcement strategy have actually brought about substantial changes in firms deployment. Faced with the treat of a strict approach, “larger firms have scrambled to hire full-time experts to keep up with the regulations and to devise programs to ‘keep the company out of trouble.’” See also section 4.2 below.

allocated according to effectiveness considerations.<sup>49</sup> These strategies apply low-cost measures (*i.e.*, compliance-oriented responses) towards compliant regulatees, and high-cost measures (*i.e.*, deterrence-oriented responses) towards recalcitrant regulatees.<sup>50</sup> Additionally, as a result of the more efficient allocation of resources, the mixed strategies facilitate a *redistribution* of enforcement expenditures which allows more violations to be tackled by the regulatory system. More specifically, if enforcement expenditures are assumed constant and exogenous, then given that compliant regulatees are handled by a less expensive measure, some enforcement resources are freed and can be shifted to address additional recalcitrant regulatees.<sup>51</sup>

### 3. ASYMMETRIC INFORMATION: A PITFALL OF THE MIXED STRATEGIES

The Tit-for-Tat-based combination of deterrence and compliance strategies has been the subject of a growing prolific literature addressing the optimal reconciliation between the two schools of thoughts. The integration of the different styles of enforcement became an accepted truth depicting the optimal way of achieving regulatory compliance. Notwithstanding the significant social advantages of the mixed enforcement strategies, their well functioning is dependent upon regulators' possession of sufficient information regarding regulatees' behavior. *Information asymmetry* between regulatees and regulators, then, presents a major concern, which provides a good reason to look at this matter afresh.<sup>52</sup>

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<sup>49</sup> The targeted enforcement method has initially discussed in (Harrington 1988, 29-53), providing a plausible explanation for the Harrington Paradox. Various extensions to the theory offered later on by many scholars. See, for instance, *supra note 34* above.

<sup>50</sup> See, for instance, (Braithwaite 2002, p. 31-32)

<sup>51</sup> See, (Scholz 1984a, p. 214). To better understand this argument, suppose that the agency has a total budget of \$5,000, which can be used by investing \$500 against 10 violating firms. Further assume that the optimal mixed strategy implies \$100 of each compliance-oriented response, and \$500 for each deterrence-oriented response. Suppose that by using the reputational mechanism, the agency could identify 4 of the violating firms as compliant firms. Under such circumstances, by investing \$100 against each of the 5 compliant firms, the agency is left with \$4,500 which can be utilized against 9 recalcitrant firms. That way, more regulatory violations are treated by the enforcement system; more deterrence is provided at the same cost, and therefore the overall social welfare is enhanced. See, also (Braithwaite 2002, pp. 81-2).

<sup>52</sup> Note that the application of the Tit-for-Tat technique to the reconciliation between deterrence and compliance approaches may be questioned with respect to other assumptions of this technique, such as the assumption of infinite period of the game (see *supra note 29*), and sufficiently large discount rate (see *supra note 31*).

Following the standard setting of the prisoner's dilemma, the mixed strategies assume that when making behavioral choices, the players in the regulatory game have no information regarding the choices made by their counterparts; regulatory choices are made simultaneously; *e.g.*, regulatees decide whether to comply with the regulations without knowing the strategy of enforcement chosen by the regulator. Nevertheless, and most importantly, *after* a behavioral choice is made, each player is informed about the choice of the other player and the associated costs and benefits of the combination of such choices.<sup>53</sup>

A look into the reality of regulatory systems reveals that the assumption of information availability after the behavioral choice is made is not always met. In fact, direct information regarding past-behavior of single players is often unavailable.<sup>54</sup> Under the setting of a large industry that is monitored and controlled by a regulator with a limited budget, it is fairly unlikely that the regulator be knowledgeable about the level of past compliance of every single firm. Instead, firms' *regulatory-violation-records* are usually taken as a proxy for their past level of compliance. The use of this proxy implies that regulators "deny cooperation to any firm with a record of minor evasions exceeding some 'optimal' level of evasion."<sup>55</sup> Put differently, to estimate future compliance motivations of regulatees, regulators rely on subjects' regulatory records of a previous period; accordingly, subjects with fewer violations than a

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<sup>53</sup> See, for instance, the description of the game by (Scholz 1984a, p. 194): "[C]onsider the simple two-person game between one firm and one enforcement agency. In each (arbitrarily defined) time period, the firm chooses some level of compliance activity and the agency assigns some level of enforcement to the firm. Each player must choose without knowing what choice the other is making, **although by the end of the period, after it is too late to change the current round's choice, both know what the other has chosen and both know the costs and benefits imposed on them during that period.**" (The emphasis added – S.O.) See also (Harrington 1988, p. 34).

<sup>54</sup> See, for instance, (Scholz 1984a, p. 211): "[...] the large jurisdictions of these newer agencies hamper cooperation by increasing uncertainty in the firm-agency relationship;" (Gunningham 2007, p. 127), who discusses the information problem with respect to the enforcement pyramid of the responsive regulation model: "[...] where regulators make only occasional visits to mines (as may be the case with small companies, and in relation to contractors and sub-contractors in some circumstances), and where the reach of the state is seriously constrained, then the pyramid has more limited application;" (Black 2001, p. 20): "Tailoring the enforcement response to individual firms is also highly resource intensive; it demands skill, time and other resources that are likely to be in short supply. The strategy also requires certain structural conditions: at the least that the firm and the regulator are in a long term relationship that will enable the regulator to observe and assess the firm's actions over a period of time." See also (Russell 1990, p. 167), who shows that the advantages of a mixed enforcement strategy are greater, the more precise the monitoring method available to the public agency is.

certain threshold are deemed compliant, while those exceeding the threshold are treated as recalcitrant ones.

The reliance on violation records of regulatees may, indeed, provide regulators with some initial indication regarding the nature of past interactions with a specific regulatee. Nevertheless, such a proxy may not always be *credible* in reflecting regulatees' past levels of compliance. At the outset, violation records include only information regarding *violation* levels and not *compliance* levels. In addition, violation records provide information regarding *detected violations*, rather than all actual violations. This way, regulatees whose violations were not detected are defined as compliant agents. On top of that, violation records fail to reflect the heterogeneity of regulatees; for instance, they do not account for the differences in the level of activity; the risk exposure to regulatory violations; the portion that the violating activity comprises of overall compliance activity; the compliance technology they use; and the difficulties involved in detection. Suppose for instance, that two plants present the same risk of air pollution due to a toxic gas which may be emitted through their production process. The sole difference between these plants is that the gas emitted by one of them is dark and highly visible, while the gas emitted by the other is completely transparent. Other things equal, it is likely that the violation record of the latter is much "cleaner" than of the former, although in fact, both present a similar social risk. Given all the above, reliance on violation records may be misleading.

A partial solution for the uncertainty involved with evaluations of past compliance levels has been offered in the literature in the form of setting *optimal periods* of the regulatory game. More precisely, commentators suggested that the length of each period of the game shall be set long enough to allow the regulator to gather sufficient information that can be used to identify the firms' compliance motivation at some level of certainty.<sup>56</sup> Indeed, longer periods may improve regulators' evaluations by providing cumulative information regarding past

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<sup>55</sup> See, (Scholz 1984a, p. 212; Scholz 1991, p. 119).

<sup>56</sup> (Scholz 1984a, p. 212): "one way of introducing the problem of uncertainty into the model is to equate the game's enforcement period with the length of time required for the agency to know the firm's choice at some predetermined level of certainty." See also, (Scholz 1984b, p. 398).

performance. However, it is doubtful whether such a solution may guarantee the well functioning of the mixed strategies in all cases. To understand why, let me consider the different states of the world that may be reflected by using violation records. To simplifying matters, assume that violation-records are binary divided, that is, an amount of violations in the previous period which exceeds a certain threshold is deemed as a “bad vertical reputation,” while if such threshold has not been exceeded, the firm is treated as having a “good vertical reputation.” Under such circumstances, firms may be divided into three groups: first, *recalcitrant firms*, including those firms that were insufficiently motivated to comply with the law and therefore engaged in numerous violations, gaining a bad vertical reputation. Second, *compliant firms*, which are firms that were highly motivated to comply with regulations and were, therefore, involved with no (or only a few) violations. The third group includes *evading firms*, which due to poor past detection, benefit from a good reputation, although they were involved in similar levels of misconduct as the recalcitrant firms. The third group, then, represents the inherent failure of the violation records as a proxy for past behavior. Such a failure may not be remedied even if the periods of the game are determined as lengthy ones. To see the distortion caused by the misevaluation of regulatees’ vertical reputation, let me consider first the function of the mixed strategies in two subsequent periods of a regulatory game. For the sake of the analysis, I treat the choice of a regulatory strategic response as offered by the literature, as implying both a high/low *probability of detection* and a severe/soft *enforcement measure* respectively; that is to say, when a compliance-oriented response is employed, regulators inspect the firm relatively infrequently, and use conciliatory measures such as guidance and persuasion against detected violations. On the other hand, when a deterrence-oriented response is employed, regulators inspect the firm rather frequently and treat detected violations with prosecution and penalties.<sup>57</sup> As described in Table 1 below, the strategic response to be employed at a certain period  $t$  is determined based on the violation records of the previous period ( $t-1$ ); as suggested by the mixed strategies, firms whose reputation as derived from their record in the previous period is bad, are treated with deterrence oriented responses, while those with good reputation are treated with compliance-oriented responses. The

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<sup>57</sup> See, f.n. 45 above, and the related text.

same applies to the subsequent period ( $t+1$ ), in which strategic responses are determined relying on records established in period  $t$ .

**Table 1 : REGULATORY STRATEGIC RESPONSES  
DETERMINED BY VIOLATION RECORDS EVALUATION**

FIRM'S TYPE	REGULATORY EVALUATIONS AND STRATEGIC RESPONSE			
	(Period $t$ )		(Period $t+1$ )	
	Evaluation (relying on period $t-1$ )	Chosen strategy	Evaluation (relying on period $t$ )	Chosen strategy
<b>Recalcitrant firms</b>	Bad reputation	→ Deterrence	→ Bad reputation	→ Deterrence (unless the firm changes behavior)
<b>Evasive Firms</b>	Good reputation	→ Compliance	→ Good reputation	→ Compliance (even if firms stick to their behavior)
<b>Compliant firms</b>	Good reputation	→ Compliance	→ Good reputation	→ Compliance (even if firms changed their behavior)

As illustrated in Table 1, recalcitrant firms which are unmotivated to comply, and ‘earned’ their bad reputation by numerous detected violations in period  $t-1$ , are addressed with deterrence-oriented responses, which reflect an appropriate response from a theoretical point of view. However, given that deterrence responses in period  $t$  include increased frequency of inspections, it is very likely that such firms keep their bad reputation and trigger deterrence responses also in period  $t+1$ , as more inspections imply a greater probability of detection, and thus greater chances of having a poor record at period  $t$ . therefore, in order for a recalcitrant firm with a bad reputation to enter a cooperative interaction with the regulator it must significantly its behavior and to genuinely commit to compliance.<sup>58</sup> In that respect, relying on violation records may prove effective when it comes recalcitrant firms.

The problem with relying on violation records emerges mainly with compliant and evasive firms. Their good reputation which relies on undetected violations in

<sup>58</sup> In theory, under the aforementioned settings a recalcitrant firm may have incentives to engage in avoidance activities, *e.g.*, covering tracks and concealing evidences for violations, striving to reduce the probability of detection. Nevertheless, given the growing frequency of inspections, such a choice may turn-out to be not productive.

period  $t-1$ , leads to compliance-oriented responses in the subsequent period  $t$ , which implies lower frequency of inspections and conciliatory enforcement measures in that period. Such a regulatory response may adversely affect the social welfare with respect to both compliant *and* evasive firms, whereas the less intensive and the less frequent the inspections become, the less information the regulator is able to gather regarding past compliance levels, and the less credible become regulators' evaluations over regulatees' compliance behavior.<sup>59</sup> Under such circumstances, lenient enforcement and infrequent inspections may turn even a *compliant* firm into an *evasive* one: "if cooperative enforcement is so lax that evasive actions are seldom discovered, cooperative firms will have little incentive to avoid cheating."<sup>60</sup> In addition, such a strategy motivates evasive firms to stick to their uncooperative attitude while enjoying the benefit of soft regulatory responses.

If the lesson from the example above is generalized into an infinite repeated game, then even when the length of each period is generously determined, reliance on violation records may distort the function of the mixed strategies; under such settings, regulatory subjects are merely incentivized to 'keep away from trouble' in a certain period, and by that, to gain a good reputation in the next period; such a good reputation, which implies reduced monitoring and relatively infrequent inspections, is likely to maintain itself in the next periods. Obviously, such a result may be abused by regulatory subjects by delaying serious violations to the future periods in which the probability of detection is mitigated and therefore the expected private gains from such violations are higher.

The seeds for two additional solutions for the information asymmetry may be found in the literature. Russell (1990) explores the possibility of dealing with what he refers to as 'monitoring errors,' by alternating the structure of the game such that non-cooperative regulatory response should be triggered only after passing a number of audits in a row.<sup>61</sup> Put differently, instead of extending the determined length of each period of the game, policymakers may simply enlarge the number of violations recorded or the number of periods in which the corporation has to be found in a

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<sup>59</sup> See, (Johnstone 2003, p. 18; Gunningham 2007, p. 127).

<sup>60</sup> See, (Scholz 1984b, p. 397).

<sup>61</sup> See, (Russell 1990, p. 159).

violation, before establishing its bad vertical reputation.<sup>62</sup> Another possible improvement is pursued by Stafford (2008), who examined a regulatory model in which regulatory responses are determined by regulatees' self-reporting of regulatory violations.<sup>63</sup> According to Stafford, '*rewarding facilities that disclose with lower penalties and more lenient future enforcement increases the incentives to both audit and disclose.*'<sup>64</sup> However, it seems that none of these alternatives can sufficiently cope with the information asymmetry arising at the ongoing enforcement phase for the reasons illustrated above; even if we accept 'multiple-play' approach, or the 'self-reporting-based' approach, regulatory authorities may still fail to accurately determine corporations' commitment to compliance, simply because none of these techniques ensures information alignment between regulators and regulatees. In addition, both alternative methods are embedded with the risk of strategic behavior by regulated corporations: in the 'multi-play' framework – firm may start by engaging in the most profitable violations, followed by compliant behavior, knowing that a non-cooperative regulatory response is only expected after various violations in a row. Similarly, if a self-reporting-based approach is taken, firms may manipulate the agency by self-reporting minor violations, and 'earning' a reduced probability of detection for the more profitable violations.<sup>65</sup> Hence, an over reliance on violation records or self-reporting may hamper the mixed strategies and adversely affect the social welfare. It seems that in order to successfully apply mixed strategies, one may need to ascertain a mechanism which can restore the effectiveness of the reputation mechanism, that is, a mechanism that is capable of providing a credible indication over regulatees' commitment to compliance. Such mechanisms are discussed in the next section.

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<sup>62</sup> If considering the state-dependent enforcement model, for instance, than only if the corporation has been found violating the regulation in a number of inspections (or in a number of periods) in a row, than it should be reclassified as a group-V-corporation.

<sup>63</sup> See, (Stafford 2008, 934-951). In her paper, Stafford uses the term self-policing to describe situations in which corporations inform the authorities about their own regulatory violation.

<sup>64</sup> (Stafford 2008, p. 250).

<sup>65</sup> See, for instance, (Pfaff and Sanchirico 2004), who criticize the EPA's audit policy, by arguing that such policy has led mainly to reports of minor violations.

#### 4. A PRUDENT MIXED REGULATORY STRATEGY

As shown above, the information asymmetry between regulators and regulatees may erode the effectiveness of the reputation mechanism, and thereby may distort the well functioning of the mixed enforcement strategies. As suggested above, to ensure a socially desirable functioning of the mixed strategies, it might be beneficial to use a supportive mechanism which is capable of restoring the effectiveness of the reputation in the regulatory arena. This section seeks to suggest a possible way of coping with the information asymmetry embedded in the mixed enforcement strategies.

##### 4.1. Unbundling Regulatory Choices: ‘*Probability of Detection*’ and ‘*Regulatory Enforcement Measures*’

The analysis below treats the enforcement choice faced by regulators slightly differently than the conventional way taken by the literature. As we have seen above, the mixed enforcement strategies suggested in the literature consider both dimensions of regulators’ choice, *i.e.*, *probability of detection* and the *regulatory measures to be imposed*, as a single dimension; ‘monitoring and prosecuting activities are combined in a single enforcement choice.’<sup>66</sup> Such an approach may be very useful for the sake of simplifying the Tit-for-Tat-based combination of the deterrence and compliance enforcement strategies. However, it seems that the problem of information asymmetry embedded in the mixed strategies can be better tackled if these two dimensions are discussed separately.

The unbundling of regulatory choices regarding the *probability of detection* and the *regulatory measure to be imposed against violators* can be best explained by looking at the different enforcement stages where these two decisions are commonly undertaken: the *probability of detection*, determined by the level of monitoring and inspection activities, is linked to the *ongoing enforcement process*, and therefore is commonly taken *before* a specific violation has been detected. The *regulatory measure*, on the other hand, represents a separate choice normally taken by the

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<sup>66</sup> See, *supra* note 45.

regulatory agency *after* a certain violation is detected. As such, the two choices faced by the regulator should be analyzed separately with respect to the propensities of the information asymmetry raised at each relevant phase of enforcement. In the following subsections I shall discuss each of these enforcement phases separately. Before doing so, I would like to briefly introduce an important instrument that plays a central role in both phases; Corporate Compliance Programs.

#### 4.2. Corporate Compliance Programs

Corporate Compliance Programs, sometimes referred to as ‘Corporate Internal Enforcement Systems,’ are formal sets of policies and procedures that are established by corporations to define how organizations should be managed, pursuing the goals of comprehensive prevention, detection, disclosure, and expeditiously correction of regulatory violations.<sup>67</sup> Such programs may be tailored to promote compliance with specific regulations (*e.g.*, environmental or antitrust regulations), according to the specific characteristics of the firm.<sup>68</sup> From an economic perspective, the functions of compliance programs can be divided into three major categories: (1) *ex-ante self-policing*, which includes all prevention and deterrence actions that may be taken by corporations *before* a regulatory violation occurs, *e.g.* provision of detailed working procedures, guidelines, manuals, ethics code, employees’ training, and close monitoring. (2) *ex-post self-policing*, which includes all deterrence actions which may be taken by corporations *after* a violation occurs. Within this category of actions we may consider, for instance, active detection and self-investigation schemes of regulatory violations. And (3) *self-reporting*, which refers to a statement or account made by corporations to the relevant public agency describing their own violations.

Generally speaking, well functioning compliance programs may have two straightforward positive impacts on the social welfare:<sup>69</sup> first, they may *increase*

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<sup>67</sup> See, (Goldsmith and King 1997); internal enforcement systems exist in a wide range regulatory areas including environment, tort, safety, employment, antitrust, corporate and securities.

<sup>68</sup> Common features in such programs include: an initial regulatory risk assessment, internal policy establishment, communication of internal policy (*e.g.*, through ethical codes, employees training), internal responsibility assignment, ongoing monitoring and auditing and internal sanctioning. For a general overview see (Krawiec 2003; Coglianese and Nash 2001).

<sup>69</sup> See, (Oded 2009).

*regulatees' level of compliance*, for instance by ensuring that all employees within a regulated firm are aware of the regulatory standards, and by establishing internal manuals that accord employees' behavior with such standards. Second, they may *reduce the public enforcement costs*, for instance, by voluntary self-reporting of regulatory violations which relinquishes some enforcement costs of investigation, evidence collection, and litigation.<sup>70</sup> Beside these rather obvious effects, corporate compliance programs may play a crucial role in coping with the asymmetric information failure associated with the mixed enforcement strategies. Let me discuss each of the enforcement stages separately, starting with the *ex-post* phase, in which the choice of *regulatory measure* is made.

### **4.3. Tuning the 'Regulatory Measures' by a Compound Liability Regime**

As discussed above, the mixed strategies employ relatively strict (deterrence-oriented) regulatory measures against regulatees with poor vertical reputation, while employing relatively soft (compliance-oriented) measures against regulatees who have a good vertical reputation. As illustrated in section 3 above, when regulators suffer from a shortage of information regarding the compliance commitment of regulatees, a Tit-for-Tat-based imposition of regulatory sanctions may be socially detrimental. One possible solution for the information asymmetry that arises with respect to the actual regulatory measures may take the form of the '*Compound Corporate Liability Regime*.'<sup>71</sup> The compound regime has developed as a possible improvement to the traditional frameworks of corporate liability, namely *Strict* and *Duty-Based* Liability. Law and Economics scholars have concentrated their attention on the ability of such regimes to produce an '*appropriate level of deterrence*,' and showed that neither of the traditional regimes is socially optimal at all times.<sup>72</sup> A somewhat different dimension for the analysis may concentrate on the different '*enforcement styles*' employed by each one of the traditional regimes. Under a *Corporate Strict Liability regime*, firms are held strictly liable for every regulatory violation committed by their employees within the scope of their employment, irrespective of the actions taken by

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<sup>70</sup> See, for instance, (Malik 1990; Kaplow and Shavell 1994).

<sup>71</sup> The compound corporate liability regime is explained in details in (Oded 2009).

these corporations to prevent, police, or report the violation. By contrast, under the *Corporate Duty-Based Liability regime*, firms are held fully liable for violations committed by their agents *only* if they failed to take due care, namely, failed to meet a legal duty to prevent, police, and report the violations (*e.g.*, failed to operate an efficient Corporate Compliance Program).<sup>73</sup> Put differently, the *strict liability* regime employs a harsh, legalistic, and uncompromising enforcement style that can be identified with the ‘by-the-book’ style of the *deterrence approach*. The *duty-based regime*, on the other hand, goes softer on regulatees and rests on a prudent evaluation of the relevant circumstances of the case at hand – a style that can be identified with the conciliatory style of the compliance approach. According to this view, which can be identified with the *compliance approach*, harsh punishment should not be triggered as an automatic regulatory response. Instead, liability should be imposed *only* against regulatees that have previously failed to act responsibly to prevent, monitor, and report regulatory violations.

As mentioned above, the analysis of the traditional corporate liability regimes shows that neither regime presents an optimal corporate liability scheme at all times.<sup>74</sup> A major aspect which appeared to be central for the creation of an improved corporate liability regime is the *asymmetric information problem* embedded in all negligence-based liability regimes. As argued by Kimberly Krawiec (2003, 2005), self-policing actions are easily mimicked by ‘window dressing’ ones which are less costly for corporations; therefore, courts and agencies are not always capable of distinguishing between effective and ‘cosmetic’ self-policing actions.<sup>75</sup>

To cope with the problem of information asymmetry, a mixed strategy, namely the *Compound Corporate Liability Regime* has been suggested. Under this regime, sanctions against corporate misconduct are bifurcated into two layers:<sup>76</sup> *first*,

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<sup>72</sup> See, for instance, (Oded 2009; Arlen and Kraakman 1997).

<sup>73</sup> A clear example of a duty-based liability regime is the Corporate Negligence Liability, under which firms face no liability at all for violations committed by their employees *unless* they failed to take due care in preventing, monitoring, and reporting the violation. Other duty-based regimes mitigate (rather than eliminate) the liability of corporations which fulfilled prevention, monitoring and reporting duties.

<sup>74</sup> See, (Oded 2009; Arlen and Kraakman 1997).

<sup>75</sup> See, (Krawiec 2003; Krawiec 2005).

<sup>76</sup> See, (Oded 2009).

a default sanction which equals the sum of the *social harm* and the *public enforcement costs caused by the violation*, divided by the probability of detection; *second*, a reduced sanction which is set at the level of the *social harm* caused by the violation. According to the compound regime, the reduced sanction shall apply when corporations appropriately *self-report* their violations, given that by self-reporting, some of the public variable enforcement costs (*e.g.*, litigation, evidence collection, and error costs) are relinquished. Such a regime has been shown to align corporations' incentives with the social interest; under the compound regime corporations are compelled to internalize the social costs associated with each of the decisions they make. When corporations violate the regulations and appropriately self-enforce, they are compelled to bear an expected sanction which equals the social harm caused by the violation. Alternatively, when corporations violate the regulations but do not self-report, they are compelled to incur an expected sanction which equals the total social costs of their conduct, *i.e.*, the direct social harm caused by the violations and the social costs of enforcement actions. Unlike other duty-based liability regimes, the compound regime does not require courts and agencies to evaluate the effectiveness and the trustworthiness of self-policing actions. Instead, the mitigation of sanctions under the compound regime relies on a *verifiable action*, self-reporting, and therefore, it does not suffer from information asymmetry consequences.

The compound regime, which combines various aspects of both strict and duty-based liability regimes, may serve as a suitable framework to overcome the information asymmetry associated with the reconciliation of deterrence and compliance approaches with respect to the '*actual regulatory measures*' imposed. Adopting this line of thinking, instead of determining the severity of regulatory responses by looking at the violation records of regulatees, the actual measures imposed by regulatory agencies may be determined by *verifiable actions* taken by the regulatees to report their violations. Following this regime, softer measures shall be employed against regulatees who step-forward and report their misconduct to the regulator. Other violators shall be treated by the default deterrence-oriented enforcement measure. As offered by the compound regime, the mitigation of enforcement measures that results from self-reporting actions must be sufficiently large such that self-reporting actions become more beneficial for the firm than 'sitting

and waiting' for regulators' inspection.<sup>77</sup> Hence, the compound regime induces regulatees to avoid a passive attitude towards their commitment to compliance.

#### **4.4. Tuning the '*Probability of Detection*' by a Gatekeeper-Based Targeted Monitoring System**

As suggested above, a special attention should be paid to the information asymmetry at the *ex-ante* phase of the enforcement process, *i.e.*, when ongoing monitoring actions are taken *before* a certain violation is detected. At this phase, regulators' choices regarding the intensity of monitoring actions and the frequency of inspections determine the *probability of detection*. When applying the idea of the Tit-for-Tat technique to the choice of probability of detection, a regulatory policy is required to devote greater monitoring efforts towards recalcitrant (rather than compliant) regulatees. Put differently, under the mixed strategies recalcitrant regulatees ought to face a greater probability of detection than compliant firms. However, as shown above, a mixed strategy which relies on violation records or even self-reporting in determining the type of regulatees at the *ex-ante* enforcement phase may be distorted to the detriment of social welfare.<sup>78</sup> Therefore, a supportive mechanism should be established to identify regulatees' type, and accordingly, to better adjust the probability of detection.

This section suggests the use of *gatekeepers' surveillance* as a voluntary signaling mechanism that enables regulators to make prudent choices with respect to the probability of detection. In essence, it is proposed to adopt a ***Gatekeeper-Based Targeted Monitoring System***, in which regulators decide whether to employ a harsh (deterrence-oriented) monitoring system, or a softer (compliance-oriented) one, by relying on a voluntary appointment of a '*Licensed Professional Enforcer*,' (*LPE*) who is hired by the firm to oversee the functioning of company's corporate compliance program.

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<sup>77</sup> According to the compound regime the difference between the default and the reduce sanctions equal the public variable enforcement costs which may be relinquished due to self-reporting of the regulatory violation. Hence, regulatees may find it privately beneficial to adopt a compliance program, as part of which they will self report, whenever the cost of such a program is lower than the variable cost of the public enforcement system regarding the specific violation.

<sup>78</sup> See section 3 above.

#### 4.4.1. *Licensed Professional Enforcer*

In various occasions courts appoint professional third-parties to undertake certain legal actions or to monitor incumbents' behavior.<sup>79</sup> The use of such a professional third-party as an 'officer of the court' is very common in bankruptcy and corporate liquidation cases, in which courts wish to ensure that required actions are taken in a knowledgeable and accountable manner.<sup>80</sup> The use of professional third-parties has expanded in the last decades as part of the emerging practice of settlements before judgment between culpable firms and the regulatory authorities, known as Deferred Prosecution Agreements (DPA). According to these agreements, regulators that have already detected a corporate misconduct agree to defer/avoid prosecution if the firm agrees to undertake dictated structural reforms, to adopt a preapproved compliance program, and to appoint an external corporate monitor to supervise the corporate behavior.<sup>81</sup> Such monitors become responsible for supervising the compliance in the corporation and disrupt future misconduct; their powers differ from one case to another, ranging from merely advisory powers to most intrusive ones, including restructuring corporate internal processes, monitoring corporate behavior, and reporting any deviation from the desirable corporate behavior to the corporate and to the court.<sup>82</sup> The LPE suggested in this paper is inspired by the model of corporate monitors emerging from the practice of DPAs. The LPE is coined here to describe a 'stand-alone' professional third party, who is well trained in implementing compliance programs in a certain regulatory field, and who is hired by regulated firms to oversee their compliance programs. However, the LPE differs from the corporate monitor in various crucial aspects. Table 2 below presents a comparison between corporate monitors and LPEs. As illustrated there, the LPE is voluntarily appointed by the firm as a *gatekeeper*, as opposed to the corporate monitor who is usually perceived as a substitute sanction. Put differently, unlike the corporate monitor who is accepted by corporations as 'the lesser of two evils,' the LPE is designed to be

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<sup>79</sup> See, for instance, (Silberman 1975; Brazil 1986; Levine 1984)

<sup>80</sup> For a comparison of different appointed masters see (Khanna and Dickinson 2007, p. 1726).

<sup>81</sup> For the development and analysis of corporate monitors see, (Khanna and Dickinson 2007, 1713-1756). See also (O'Hare 2006)(discussing the use of corporate monitors in SEC enforcement actions).

voluntarily appointed by corporations to materialize their own wish to avoid misconduct and its adverse consequences. Furthermore, the LPE is appointed by corporations to secure *ongoing compliance*, as opposed to the corporate monitor who is appointed as a response to a corporate regulatory violation detected by the authorities. Another crucial difference between corporate monitors and LPEs is the *identity* of the person appointed to the office. Prevailing policies broadly require the authorities to select monitors on a merit basis, according to their qualifications, while avoiding conflict of interests. In fact, in most cases corporate monitors are former judges, prosecutors, or SEC attorneys.<sup>83</sup> By contrast, LPEs are designed to be controlled *ex-ante* through licenses provided by a public authority that functions as a clearinghouse in ensuring their expertise, trustworthiness, and judgment proofness. Lastly, unlike corporate monitors, LPE are designed to face personal liability for corporate misconduct.

Table 2: A COMPARISON BETWEEN CORPORATE MONITORS AND LPEs

	CORPORATE MONITOR <sup>84</sup>	LPE
<b>Basis for appointment</b>	Prejudgment as part of DPA	Voluntary
<b>Appoints by</b>	Court approves DPA between the regulator and corporations	Corporations
<b>Role</b>	Oversee the compliance program of the corporation (prevent misconduct, ensure compliance, monitor, and report irregularities)	Oversee the compliance program of the corporation (prevent misconduct, ensure compliance, monitor, and report irregularities)
<b>Identity</b>	Typically former judges, prosecutors, or public attorneys	Trained and certified compliance professionals
<b>Certification required for appointment</b>	Not required	Required – provided by a public authority
<b>Duration</b>	Typically 1-5 years	Unlimited

<sup>82</sup> See (Khanna and Dickinson 2007, pp. 1724-6); see also (O'Hare 2006), describing WorldCom's corporate monitor as the most powerful person in WorldCom, who was involved in every important corporate decision.

<sup>83</sup> See (Khanna and Dickinson 2007, P. 1722)

<sup>84</sup> Features regarding the corporate monitor are based on 257, esp. Table 2 at p. 1726.

	<b>CORPORATE MONITOR<sup>84</sup></b>	<b>LPE</b>
<b>Powers</b>	As determined by the DPA	As determined by the corporation
<b>Personal liability for corporate misconduct during time at the office</b>	No personal liability	Strict liability
<b>Economic function</b>	A substitute for a sanction	Gatekeeping and a signaling mechanism
<b>Rewards gained by appointing</b>	Sanctions for past misconduct are avoided	Accreditation (labeling) and a reduction in the probability of detection

As for the economic function of the LPEs, under the suggested setting, beside acting as a gatekeeper, LPEs' main function is to serve as a '*signaling mechanism*:' the discussion of the compound regime reveals that given that adequate incentives are provided by the enforcement system, business corporations are expected to act efficiently in preventing, monitoring, and reporting regulatory violations. Hence, the appointment of an LPE, in itself, is not assumed to improve the quality of compliance programs; theoretically, firms' compliance programs may be equally effective when administered by an equally professional *unlicensed* enforcer. In other words, the effectiveness of the compliance program depends on the actual expertise of the enforcer and not whether he/she is licensed. Hence, under the settings suggested here, the central function that an LPE may play is serving as a signaling mechanism which indicates the firms' genuine commitment to compliance. To see how the *Gatekeeper-Based Targeted Monitoring System* works, let me portray first the general setting for this system.

#### 4.4.2. *The General Setting*

The general setting of the Gatekeeper-Based Targeted Monitoring System is next described through three key pillars: the preliminary assumptions; the regulatory response offered by this system; and the personal liability imposed on the corporate gatekeeper.

***Preliminary assumptions*** - The analysis of the Gatekeeper-Based Targeted Monitoring System relies on two basic assumptions: first, it is assumed that regulated corporations as well as LPEs (who could also be incorporated as consultancy firms and serve multiple clients simultaneously) are *risk neutral*;<sup>85</sup> e.g., their utility stays unchanged whether they face an expected liability of \$100 (e.g., probability of .5 to be fined by a \$200 actual sanction), or a certain fee of \$50 coupled with an expected liability of \$50 (e.g., probability of detection .5 to be fined by a \$100 actual sanction). Second, it is assumed that *the market for LPEs is competitive*;<sup>86</sup> hence, LPEs' fees are determined as a competitive market price. Under this framework, the market-price for LPEs' fees is determined by the sum of marginal costs of overseeing the functioning of the compliance program coupled with the LPE's expected personal liability.<sup>87</sup>

***Regulatory response*** - According to the *Gatekeeper-Based Targeted Monitoring System*, a regulated firm that appoints an LPE signals its cooperativeness, that is, its motivation to comply with regulations. Such a signal is reciprocated by two regulatory responses: first, *labeling*, that is, the regulator provides the firm with a label which indicates that the firm has appointed an LPE, and includes the firm in a publicly accessible list of labeled firms. Such labels ought to signal to the firms' trading partners, potential customers, investors, and other stakeholders, the firms' commitment to compliance, and its relatively low exposure to regulatory sanctions. Such a signal is likely to improve the firms' horizontal reputation, and thus, it comprises an important asset for the firm.<sup>88</sup> Second, and at least as important, *reduced probability of detection*, that is, labeled firms (i.e., firms that appointed an LPE) shall face a lower probability of detection, which results from a controlled reduction in inspections frequency. Put differently, as a default, firms that failed to appoint an LPE

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<sup>85</sup> Risk neutrality of business corporations is a commonly assumption in the scholarly literature due to firms' ability to diversify their risks. See, for instance, (Russell 1990, p. 216; Kirstein 2000). As for the LPE, the risk neutrality assumption can be better understood when considering firms acting as third-party enforcers, as opposed to private individuals, see, for instance, (Kraakman 1986, p. 71)

<sup>86</sup> The idea of creating a market for professional third-parties appears already in the seminal work by (Gilson and Kraakman 1991). The authors observe that institutional investors may efficiently reduce agency problem in held companies by creating a market for professional outside directors.

<sup>87</sup> See (Kraakman 1986, p. 88): who shows that: "*imposing liability on gatekeepers increases the costs of supplying wrongdoers by the amount of the gatekeepers' expected sanction.*"

<sup>88</sup> Horizontal reputation refers to the impact that (non)compliant behavior of one actor in the past may have on the decisions of other market players to interact and to trade with such an actor in the future. See section 2.1 above.

shall face a high probability of detection (*i.e.*, a deterrence-oriented response); whereas, firms that appointed an LPE, shall benefit from a reduced probability of detection (*i.e.*, a compliance-oriented response). As such, the appointment an LPE is used here as a supportive mechanism to the establishment of a good vertical reputation, which indicates the firms' commitment to compliance; labeled firms are perceived as committed to regulatory compliance, while unlabeled ones warrant a closer supervision by the public agency.

***Gatekeeper Liability*** - The last pillar of the Gatekeeper-Based Targeted Monitoring System is the personal liability of LPEs. This pillar is crucial in order to ensure the accountability of the LPE, and thereby, the credibility of the Gatekeeper-Based System as a whole. Determining the LPE's liability, two important aspects should be taken into account: the *type of liability* (*i.e.*, strict vs. duty-based personal liability); and the *level of sanction* to be imposed when an LPE is held liable. As for the first aspect, under the Gatekeeper-Based System LPEs' liability is determined as a *strict personal liability*, meaning that LPEs are held liable for violations committed by the firm by which they were employed if these violations were detected by the regulator. Hence, whenever a firm that appointed an LPE is found violating the law, and the violation has not been self-reported by the firm or by its LPE, the *firm* and its LPE are liable for the violation. As for the *level of sanction*, under the Gatekeeper-Based System, LPEs' *expected* liability is set at the level of the *reduction in expected liability gained by the firm due to the appointment of LPE*.

To simplify matters, let me use a simple numerical example; suppose that the actual default sanction for a certain violation is \$200 (*i.e.*, the total social costs associated with the violations sum up to \$200) and that the default probability of detection is reduced for firms that appoint an LPE from  $P^0 = .5$  to  $P^L = .4$ . Accordingly, firms' expected liability is reduced from \$100 (that is,  $.5 \cdot \$200$ ) to \$80 (that is,  $.4 \cdot \$200$ ). Under the Gatekeeper-Based Targeted Monitoring System, LPEs' *expected* liability shall be set at the level of the reduction in the firm's expected liability gained due to the appointment of the LPE – in the example above, this reduction equals \$20 (that is,  $\$100 - \$80$ ). This implies that when the firm in this example is found in a violation that has not been self-reported, both the firm and its LPE incur sanctions: the firm incurs the actual default sanction of \$200; and the LPE

incurs a sanction that equals the LPE's *expected* liability divided by the probability of detection, i.e.,  $\$20/.4$ , or  $\$50$ .<sup>89</sup>

#### 4.4.3. *Licensed Professional Enforcer as a Signaling Mechanism*

The idea of the Gatekeeper-Based Targeted Monitoring System is fairly straightforward; this system encourages regulated firms to appoint an LPE and by that, to signal the regulator their genuine commitment to compliance. Such a signal, which is reciprocated by a special label and a reduction in the probability of detection, enhances firms' *horizontal reputation*, which as we have seen above, often presents an important profit-generating asset and a competitive advantage.<sup>90</sup> The improvement in firms' horizontal reputation may have two main explanations: first, the special label provided by the regulator signals the firm's commitment to compliance, and therefore, its lower risk of being subject to legal shocks (*e.g.*, heavy sanctions which may impede the activity of or even paralyze the firm). A labeled firm is likely to be perceived by its trading partners and other potential stakeholders as more stable and reliable, and therefore may benefit from advantageous competitive standing.<sup>91</sup>

One may be tempted to think that the reduction in the probability of detection resulting from the appointment of an LPE is the main incentive for firms to appoint an LPE. However, As mentioned above (subsection 4.4.2), under the Gatekeeper-Based Targeted Monitoring System, the reduction in the probability of detection is, in fact, fully compensated by the additional costs involved in appointing the LPE, and therefore, cannot be the main motivation for firms to appoint an LPE. To illustrate the overall function of the Gatekeeper-Based Targeted Monitoring System, let me return to the numerical example used in subsection 4.4.2, according to which, due to the

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<sup>89</sup> Note that the LPE is strictly liable for every detected violation committed by his employing firm. Hence, the relevant probability for the LPE's actual liability is the reduced probability ( $P^L = .4$ ), which is the relevant probability of detection of corporate misconduct if an LPE is appointed.

<sup>90</sup> See *supra* note 27 above, and the related main-text.

<sup>91</sup> The probability of detection has been proven to be a powerful factor in affecting regulatees' reputation, even more than the actual sanction imposed. In many cases a significant reputational loss is suffered by the firm just because a regulatory investigation has been initiated. Such a loss is not always reversible, even when the investigations yielded no regulatory sanctions (Karpoff, Lee, and Martin Forthcoming). In addition, for the stronger deterrence affect achieved by increasing the probability of detection, rather than the actual liability, see, for instance, (Cohen 2001).

appointment of an LPE, the firm's expected liability is reduced by a total expected amount of \$20 (\$100 - \$80). According to the Gatekeeper-Based System, the LPE's expected liability is set at the level of the reduction in firm's expected liability, and therefore, in this example that LPE's expected liability is \$20 as well. Given the presumptions of risk neutrality and competitive LPEs market, by employing an LPE the firm gains: (1) a reduction in its expected liability resulting from the reduction in the probability of detection (in the example above this reduction equals \$20). (2) a label provided by the regulator, which can be considered in term of horizontal reputation gains. On the other hand, the appointment of an LPE involves a payment of the LPE's fees, which equal the LPE's expected liability (in the example above these additional costs equal \$20). Hence, under the Gatekeeper-Based Targeted Monitoring System, the reduction in firms' expected liability resulting from the appointment of an LPE is exactly offset by the additional costs associated with the appointment of the LPE. As such, the Gatekeeper-Based System ensures an adequate level of deterrence whereas in any case, the firm faces regulatory related costs which equal the social harm; an expected liability of \$100 (if the firm did not appoint an LPE), or an *expected* liability of \$80 (if the firm appointed an LPE) plus additional fees of \$20 associated with the appointment of an LPE. However, in the latter case the firm enjoys an enhancement in its horizontal reputation, which in itself, provides the firm with an incentive to appoint an LPE.<sup>92</sup>

#### 4.4.4. *The Credibility of Licensed Professional Enforcers*

Finally, the Gatekeeper-Based Targeted Monitoring System heavily relies on LPE as a credible mechanism that signals the firm's genuine commitment to compliance. Skeptics may argue that under this system recalcitrant firms may profit

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<sup>92</sup> Note that the analysis above disregards the additional administrative costs involved with the Gatekeeper-Based System. These costs include, for instance, the cost of firms' labeling and LPEs' licensing. One possible way to include such costs in the analysis would be to impose them upon the corporations that appointed LPEs, by charging a fixed (constant) annual labeling fee. In that case, the expected liability of the LPE should be set at the level of the reduction in firm's expected liability due to the appointment of the LPE, net of the constant annual fee. For instance, if due to the appointment of the LPE the firm gained a reduction of \$20 in expected liability, and paid an annual fee of \$3, then the expected liability of the LPE should be set at the level of \$20-\$3, or \$17. Given that these additional costs are financed through constant annual fees, disregarding these costs in the analysis above does not affect my conclusions.

from mimicking compliant firms by appointing an LPE and bribing him/her to act as a ‘straw man.’ Thereby, recalcitrant firms may ostensibly benefit from a reduced probability of detection and a reputation-enhancing label, while benefiting from freely violating the law. Obviously, when the possibility of bribing the LPE exists, the Gatekeeper-Based System may be distorted to the detrimental of the public interest. However, as will be shown below, bribery of an LPE under the Gatekeeper-Based System is rather unlikely.

At the outset, the licensing system of LPEs plays a central role in diminishing the risk of a non-credible LPE; first, such a system enables the regulatory agency to employ an *ex-ante* controlling system, under which LPEs are screened, selected, and trained before being entitled to the license. Candidates who cannot demonstrate sufficient integrity and expertise are denied. Second, the licensing system allows the regulator to revoke licenses of LPEs who are found corrupted or unprofessional. Under such circumstances, LPEs have a strong incentive to avoid any corruption, which may lead to his/her license revocation; a ‘convincing bribe’ must be significant enough to outweigh the serious risk of losing one’s license.<sup>93</sup>

To be sure, the licensing system cannot, by itself, prevent any possible collusion. Nevertheless, in a world where regulations are socially desirable, a bribery of the LPE under the settings of the Gatekeeper-Based System is rather unlikely. To see why, let me briefly consider the propositions of the Gatekeeper-Based Targeted Monitoring System under the setting of socially desirable regulations:

1. *Socially desirable regulations* – socially desirable regulations are those that maximize the net social welfare.<sup>94</sup> Put differently, when a socially desirable regulatory standard applies, the potential private benefit that can be derived by a certain violator from violating the regulation (*PB*) is lower than the total social

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<sup>93</sup> See, (Kraakman 1986, pp. 67-8). See also (Bardach and Kagan 1982, pp. 61-2): “*Large corporations now have staffs of professionals concerned with regulatory matters – academically trained industrial hygienists, environmental engineers, toxicologists, safety experts, biologists, lawyers, occupational physicians, and specialists in administering affirmative action programs. These specialists are by no means uninterested in their corporation’s balance sheet, but they also have some loyalty to the standards of their profession. ‘I’m a licensed engineer, I’m not going to risk my license by lying to an agency,’ a corporate environmental engineering told us.*”

<sup>94</sup> See, for instance, (Bardach and Kagan 1982, p. 6): “*a regulatory requirement is unreasonable if compliance would entail costs that clearly exceed the resulting social benefit.*” See also (Baldwin and Cave 1999, p. 76; Scholz 1984a, p. 201).

cost associated with such a violation ( $TSC$ ). Otherwise, the violating behavior should be permitted by the regulations.

$$PB < TSC \quad [1]$$

2. *Firms' expected liability* – as mentioned above, under the compound liability regime, the firm's default expected liability ( $EL^0$ ) equals the total social cost associated with a regulatory violation ( $TSC$ ). That way, the compound regime ensures an optimal level of deterrence.

$$EL^0 = TSC \quad [2]$$

3. *Total regulatory costs of a firm which appoints an LPE* – as we have seen above, the main incentive provided by the Gatekeeper-Based System to appoint an LPE is the horizontal reputation gained by labeled firms. As for the private costs involved with this system, it is shown above that a firm that appoints an LPE benefits from a reduced expected liability ( $EL^L$ ), but has to bear the extra costs charged as fees associated with the LPE's expected personal liability ( $F$ ). Therefore, the overall regulatory cost of the firm which appoints an LPE equals the expected liability of a firm that fails to appoint an LPE.

$$F + EL^L = EL^0 \quad [3]$$

4. *Maximal bribe* – by appointing an LPE the firm benefits from the *label* provided by the regulator and the *reduced expected liability*. By bribing the LPE, the firm may gain an additional benefit that derives *from the regulatory violation*. Hence, a rational firm is willing to pay the LPE a bribe ( $B$ ) not greater than the one that completely erodes the benefit from the regulatory violation. In other words, the maximal bribe that a firm is willing to pay its LPE is the private benefit that the firm can derive from the violation ( $PB$ ).<sup>95</sup>

$$B < PB \quad [4]$$

Given all the above, it is easy to see that under the Gatekeeper-Based Targeted Monitoring System a firm has no incentive to bribe its LPE. As shown above, under

the Gatekeeper-Based System the firm's overall regulatory expected costs are greater than the total private benefit that may be gained by a regulatory violation:<sup>96</sup>  $F + EL^L = EL^0 = TSC > PB$ . Given that the firm's expected costs are greater than the potential benefit that can be derived from bribing the LPE (the potential gain from a regulatory violation), under the Gatekeeper-Based System with socially desirable regulations, the firm has no incentive to invest additional resources in bribing its LPE.

#### 4.4.5. *Summing Up*

The information asymmetry involved in applying the mixed enforcement strategies on the choice of *probability of detection* may distort regulators' choices and result in an inefficient level of deterrence. To benefit from a targeted monitoring system that concentrates scarce monitoring and detection resources to recalcitrant regulatees, regulators must be able to distinguish between normatively committed and recalcitrant regulatees. Whenever the information possessed by regulators is insufficient to determine firms' commitment to compliance, the application of targeted monitoring system may jeopardize the social welfare. The Gatekeeper-Based Targeted Monitoring System suggested above presents a workable solution for the information asymmetry embedded in the mixed strategies with respect to the probability of detection. Such a system provides regulatees with a signaling tool (*i.e.*, the employment of an LPE), through which a genuine commitment to compliance can be communicated to the regulator. In addition, it establishes a unique liability framework which generates separate equilibriums for normatively committed and for recalcitrant firms. More precisely, the liability scheme offered by the Gatekeeper-Based System provides only normatively committed regulatees with an incentive to appoint an LPE. By that the Gatekeeper-Based System allows regulators to identify

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<sup>95</sup> See, for instance, (Polinsky and Shavell 2001, 4), who show that an offender is willing to pay a bribe only if the "bribe payment to an enforcer for not reporting an offense" is lower than the "fine imposed on the offender if an offense is reported."

<sup>96</sup> Under the gatekeeper-based system, the firm's overall regulatory expected costs remain constant whether the firm appoints an LPE or not (expression 3 above). Such regulatory costs equal the total social costs of the violation (expression 2 above), which under the assumption of socially desirable regulation, are greater than the potential private benefit that can be extracted from a violation (expression 1 above).

regulatees according to their commitment to compliance, and to cope with the problem of information asymmetry.

## 5. CONCLUDING REMARKS

This paper tackled the failure of information asymmetry by looking separately at each of the choices made by regulators, relating them to separate enforcement phases: first, the *ex ante* enforcement phase, in which regulators choose the *probability of detection*. As shown above, the information asymmetry involved at this phase may be cured by a *Gatekeeper-Based Targeted Monitoring System*. Such a system enables normatively committed regulatees to signal their attitude to the regulator by appointing an LPE. Second, the *ex post* enforcement phase, in which regulators choose which *regulatory measure* to employ against detected violations. To cope with the information asymmetry embedded at this phase, it was suggested that a *Compound Corporate Liability Regime* may allow regulators to identify regulatees who are worthy of sanction mitigation, relying on verifiable (self-reporting) actions.

As a matter of fact, both *Gatekeeper-Based System* and the *Compound Liability Regime* share the same point of departure. Both frameworks acknowledge that regulators do not always possess all relevant information, and therefore the choice of regulatory responses must rely on a credible indication that allows them to distinguish between normatively committed and recalcitrant regulatees. Such an indication may be revealed by creating an incentive scheme that generates separate equilibriums, whereby differently motivated regulatees choose different ways of behavior. Frameworks for such incentive schemes were suggested here: whenever regulatees' self-enforcement actions are verifiable (*i.e.*, self-reporting actions), and therefore can signal regulatees' worthiness for a conciliatory regulatory response, the *Compound Corporate Liability Regime* warrants a mitigation of the regulatory measures imposed. Conversely, when self-enforcement actions are unverifiable (*i.e.*, ex-ante and ex-post self-policing), and therefore cannot, by themselves, signal regulatees' worthiness for a conciliatory regulatory response, the *Gatekeeper-Based Targeted Monitoring System* induces regulatees to employ an external signaling

mechanism (*i.e.*, employing an LPE) that transforms their unverifiable actions into verifiable ones. Finally, both frameworks suggested above encourage regulatees to undertake enforcement functions by reducing their expected liability; the *Gatekeeper-Based System* reduces the *probability of detection*, while the *Compound Regime* mitigates the *regulatory measures*.

In spite of the mitigation of firms' expected liability, both frameworks maintain an optimal level of deterrence at all times: the *Compound Regime* acknowledges that the total social cost associated with a regulatory violation is lower for self-reported violations than for non-reported ones. Accordingly, this regime reduces self-reporting-firms' expected liability by an amount equivalent to the social costs saved by the action of self-reporting. Therefore, whether the firm has self-reported its own violation or not, its expected liability always equals the actual social costs associated with the violation. Similarly, although the *Gatekeeper-Based System* reduces the expected liability of firms that appointed an LPE, it guarantees that such a reduction does not dilute the level of deterrence. As shown above, due to the personal liability imposed on LPEs, firms are expected to face total regulatory costs equal to the optimal expected liability required for an optimal level of deterrence to exist. Thereby, the *Gatekeeper-Based System* and the *Compound Liability Regime* alleviate the information asymmetry problem pertained with the application of the Tit-for-Tat-based enforcement strategies, while maintaining an optimal level of deterrence.

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