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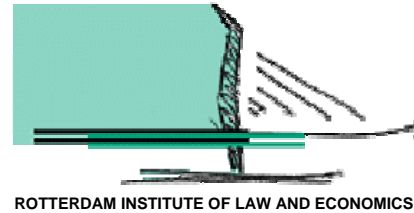
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Author

Oded, Sharon

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Sharon Oded

European Doctorate in Law and Economics (EDLE)

Rotterdam Institute of Law and Economics (RILE)

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Erasmus University Rotterdam

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Sharon Oded

Sharon.oded@gmail.com

European Doctorate in Law and Economics (EDLE)
Rotterdam Institute of Law and Economics
Erasmus University Rotterdam

Visiting scholar at the Boalt Hall School of Law
University of California, Berkeley

ABSTRACT

Corporate liability has two major social goals: (i) inducing corporations to internalize all social ramifications of their activity; and- (ii) inducing corporations to prevent, deter, and report their employee wrongdoing. Previous studies have questioned the virtue of the traditional strict liability and negligence liability regimes and suggested alternative regimes that may present a partial improvement over the traditional ones. Yet, thus far, the structure of an optimal corporate liability regime has remained an unsolved puzzle. Following a Law and Economics approach, this paper develops an innovative regime that may present an optimal corporate liability framework in most settings. The suggested regime is a two-layer strict liability regime, under which sanctions are bifurcated into two levels: (i) A default sanction which is determined by the total social cost caused by corporations' wrongdoings, *i.e.* the *social harm* coupled with the *variable enforcement cost* associated with the wrongdoing; and- (ii) A mitigated sanction that equals the *social harm* created by the wrongdoing, which replaces the default sanctions when self-reported violations are concerned.

Keywords: Law enforcement, self-enforcement, corporate liability, deterrence, regulation, compliance.

JEL Classification: G38, K14, K22, K42, L50

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1. INTRODUCTION

Being soulless and bodiless, corporations can actually act only through their employees (Friedman 1979, p. 173; Walsh and Pyrich 1995, p. 641). Therefore, it is commonly argued that ‘corporations do not misbehave; their employees do.’¹ Nonetheless, under contemporary laws corporations are held liable for wrongs committed by their employees within the scope of the employment.² The bedrocks for holding corporations vicariously liable pertain to the unique relationship between corporations and their employees: first, corporations are the actual *beneficiaries* of their employees’ conduct, and thereby ought to bear the cost of such actions undertaken on their behalf (Pitt and Groskaufmanis 1990, pp. 1563-4). Second, corporations are normally able to *control* their employees, and thereby ought to be motivated to disrupt and deter misconduct of their employees (Atiyah 1967, p. 15). That said, every desirable corporate liability regime targets at: (i) inducing corporations to internalize all social ramifications of their activity when making behavioral choices; and-(ii) inducing corporations to actively prevent, deter, and report employee misconduct.³ The central question from a policymaking perspective is: *How a corporate liability regime should be structured to efficiently achieve these twin goals?* This question lies at the heart of this paper, which uses the Law and Economics toolkit to overcome the shortcomings of the major liability regimes discussed thus far by the Law and Economics literature, and to develop an innovative liability framework specifically tailored to achieve the twin goals.

The remainder of this paper is structured as follows: the *second* section provides a short overview of the economic function of enforcement systems in producing incentives for compliance; the *third* section presents the unique challenges involved in controlling

¹ A famous quote in the same vein is attributed to Baron Thurlow, an eighteenth-century British jurist, describes the metaphysic nature of corporations as personal who have “*no soul to be damned, and no body to be kicked.*” See (Coffee 1981, p. 386, f.n. 1).

² Corporate vicarious liability is based on the ‘Respondeat Superior’ doctrine, which assigns responsibility to principals for tortious actions of their employees taken within the scope of their employment. Initially, the doctrine was used as the ideological ground for an imposition of civil corporate liability (See Restatement of Law (Third), Agency, §2.03(2)). At the beginning of the twentieth century the doctrine has expanded to the criminal context. Under current laws corporations are held criminally liable for offenses committed by their employees within the scope of employment, and at least in part with the motive to benefit the corporation. For a general discussion of the existing framework of corporate liability, See also (Walsh and Pyrich 1995; Kraakman 2009, 669-681; Weissman and Newman 2007, p. 412, 422; Huff 1996; Colvin 1995; Lacovara and Nicoli 1989; Laufer 1994; Hefendehl 2000).

³ See (Arlen and Kraakman 1997, p. 692): “*Where corporate liability is justified, it must accomplish two goals: it must induce firms to select efficient levels of productive activity (the activity level goal) and to implement enforcement measures that can minimize the joint costs of misconduct and enforcement (the enforcement goal)*”. See also (Kraakman 2009, p. 670 - 2)

corporate misconduct and the social goals of corporate liability; the *fourth* section canvasses the major corporate liability regimes analyzed thus far in the Law and Economics literature, none of which presents a socially optimal framework; the *fifth* section portrays an analytical framework for a systematic evaluation of corporate liability regimes. Having identified the potential perils of corporate liability regimes, in the *sixth* section, I develop an innovative regime structured as a two-layer strict liability. The proposed framework, labeled here as the *Compound Corporate Liability Regime*, hinges on sanction mitigation when corporations step forward. In particular, if corporations self-report their employees' misconduct, the applied sanction is reduced by the variable enforcement cost that the enforcement agency now does not need to incur. Such a compound regime, I believe, aligns the social and corporations' goals. The *seventh* section summarizes and concludes.

2. ENFORCEMENT AND COMPLIANCE

The point of departure of the Law and Economics literature in explaining the role of an enforcement policy is the well known *deterrence theory*. According to the theory, utility-maximizing agents decide whether to obey the law or to violate it according to a cost-benefit analysis (Spence 2001, p. 919); agents compare their expected compliance utility, *i.e.*, the payoffs expected to be obtained when they obey the law, with their expected violation utility, *i.e.*, the expected payoffs when they violate the law. Consequently, agents obey the law only when their expected compliance utility is greater than their expected violation utility (Becker 1968; Stigler 1970; Heyes 1998; Polinsky and Shavell 2000). This method of rational choices reveals the role of enforcement systems; these systems seek to induce market agents to obey the law by reducing the expected violation utility to the level in which market agents are better-off obeying the law, rather than violating it.

Enforcement systems can achieve an optimal level of deterrence by setting the *expected sanction* for misconduct at the level of the *total social costs* caused by the misconduct, discounted by the probability of detection; this way, agents are compelled to bear the social costs of their misconduct (Stigler 1970; Heyes 1998; Polinsky and Shavell 2000; Cooter 1984; Becker 1989; Block 1991).⁴ The scholarly literature has shown that

⁴ It should be noted that deterrence can be achieved also through a 'gain-based liability' which forces the infringer to disgorge the gains achieved due to the law violation – See (Becker 1968; Van den Bergh 2007, p. 196). However, when considering the possibility of courts' errors in estimating the gain and harm,

when considering the total social cost of a misconduct, one must take into account the *relevant enforcement costs*, which are the cost of enforcement actions associated with the specific misconduct.⁵ To identify the ‘relevant enforcement cost’ it may be useful to resort to the traditional distinction commonly followed by the Law and Economics literature between *fixed* and *variable* enforcement costs, sometimes referred to as the distinction between *general* and *violation-specific* enforcement costs:⁶

- A. ***Fixed/general enforcement costs*** include the costs of enforcement actions that do not depend on the number of individuals who actually commit harmful acts. These fixed costs associate with ongoing control, monitoring, and detection activities undertaken regularly by the government agency irrespective of any specific violation; for instance, the cost of periodic tests of river water carried out by the Environmental Protection Agency. Such enforcement activities are undertaken to verify that the law is obeyed and to detect any deviation from the law.
- B. ***Variable/violation-specific enforcement costs*** are enforcement costs that are contingent upon the number of violations. These variable costs include the costs of enforcement actions normally taken against a specific violation after a suspicion was raised; for instance, the cost of an investigation of specific red flags, evidence collection, litigation, and the imposition of sanctions against culpable actors. These costs are normally associated with enforcement actions undertaken against known suspects and against a specific misconduct.

Taken all together, to achieve an optimal level of deterrence, the sanction imposed by the enforcement policy must equal the ‘total social cost’ generated by the misconduct, discounted by the probability of detection. To evaluate the ‘total social cost’ one should take into account not only the costs of the *direct harm* generated by a misconduct, *e.g.*, the harm suffered by the direct victims of a pollution caused by an environmental violation, but also the *variable enforcement costs* produced by the misconduct (Stigler 1970, p. 533; Block 1991, p. 397; Polinsky and Shavell 1992).

‘harm-based liability’ may be superior to a ‘gain-based liability.’ For a comparative analysis of a ‘gain-based liability’ and a ‘harm-based liability.’ see, (Polinsky and Shavell 1994).

⁵ The importance of enforcement costs as part of the total social costs associated with misconduct was firstly introduced by George Stigler, who has shown that the goal of the enforcement agency is to minimize the sum of the damages created by the misconduct and the enforcement cost; see, (Stigler 1970, p. 533). See also (Malik 1990, p. 397).

3. THE ROLE OF CORPORATE LIABILITY

The organizational settings of corporations, under which various agents act on behalf of their corporations, pose some challenges to the enforcement system. Under the corporate setting, the assumption of a single entity that conducts a cost-benefit analysis when making behavioral choices is no longer valid. Behavioral choices of corporations are taken and executed in two inter-connected levels: first, *the central decision-making level*, in which the corporate administration shapes the corporate business activity by determining the sorts of activity, the technology to be used, and the overall level of activity; and second, the *execution level*, in which employees of different levels operate as an integrated team to execute the corporate policy. Under this complex structure, even when corporations decide to obey the law, violation may be committed at the execution level. Such violations may occur, for instance, due to an imperfect flow of information and commands within corporations; conflicts of interest between corporations and their employees; or simply due to corporations' limited ability to control their employees (Sykes 1984, p. 1239). Given the challenges above, an enforcement policy may fail to achieve an efficient outcome by treating corporations as monoliths; it cannot ensure corporate compliance by simply motivating the corporate "brain," the corporate management, to adjust the corporate activity to the regulatory requirements. An enforcement policy must take a further step and ensure that employees' actions taken within the scope of the employment are effectively monitored and controlled.

In an optimal world, deterrence could have been produced by holding the individual primary actors operating on behalf of a corporation personally liable (Arlen and Kraakman 1997, p. 695). However, such a liability scheme may fall too short to provide adequate deterrence for various reasons; at the outset, an individual liability scheme does not consider the agency relationship between corporations and their employees, and therefore may fail to provide appropriate incentives at both management and employees' levels (Sykes 1984; Kornhauser 1982; Sykes 1988; Kraakman 2009). Second, individual liability alone cannot provide adequate compliance incentives to employees, who are unable to modify procedures which are beyond their discretion. Third, corporate activity is normally carried out by a group of individual actors operating as an integrated team. Therefore, enforcement agencies may be challenged in detecting culpable individuals and identifying their personal level of culpability (Walsh and Pyrich

⁶ See, for instance (Polinsky and Shavell 1992). See also (Gilson 1990), who distinguishes between "ex-ante indirect enforcement" (screening and prevention) and "ex-post direct enforcement" (litigation and sanctioning); and (Coffee 2003), who distinguishes between 'ex-ante and ex-post enforcement costs.'

1995, p. 635; Kornhauser 1982, pp. 1370-1).⁷ On top of all that, challenges to individual liability schemes may arise with regards to the limited wealth of individual employees which may not suffice to cover the sanctions imposed by the enforcement system (Heyes 1998, p. 57; Sykes 1984; Kornhauser 1982; Shavell 1986; Shavell 1987). This judgment proof problem may be stringent when the optimal sanction is severe, for instance due to the rigorous harm resulted from the violating activity. Taken all together, it seems that an individual liability scheme alone may not suffice to achieve an efficient control of corporate behaviour.

Corporate liability, under which corporations are held liable for their employees' wrongdoing, comprises a useful policy instrument that seeks to induce corporate compliance. The assignment of liability to corporations for actions undertaken by their employees has been commonly supported by courts, policymakers, and legal scholars relying on two main lines of argument. The first line of argument perceives employees conduct within the scope of the employment as actions taken by '*organs in the corporate body.*' Therefore, as the argument goes, such actions ought to be attributed to the corporations themselves; after all, these corporations are the actual beneficiaries of their employee conduct taken within the scope of the employment (Walsh and Pyrich 1995, p. 637; Pitt and Groskaufmanis 1990, pp. 1563-4; Weissman and Newman 2007, p. 420). A related line of reasoning focuses on *corporate control over their employees*. As the argument goes, corporations are normally able to control their employees, and thereby ought to be motivated to disrupt and deter misconduct of their employees (Walsh and Pyrich 1995, p. 633; Atiyah 1967, pp. 15-6; Weissman and Newman 2007, p. 420; Brickey 1982, pp. 409-10; Huff 1996, pp. 26-7).⁸

These lines of argument are supported by the Law and Economics polemic literature. First, as implied by the deterrence theory, an efficient enforcement policy must induce all market players, including corporations, which are the beneficiaries of their employees' actions, to internalize the overall social cost of their activity. That way, market players are induced to make behavioural choices that maximize the social welfare.⁹ When corporate entities are concerned, by holding corporations liable for their

⁷ Compare also with (Holder, Eric, Deputy Attorney General June 16, 1999, §VI(B)): "*It will often be difficult to determine which individual took which action on behalf of the corporation.*"

⁸ This line of argument appears in various court decisions; see, for instance, *Commonwealth v. Proprietors of New Bedford Bridge*, 68 Mass. 339 (1854); *State v. Morris & Essex Railroad Co.* 23 N.J.L 360 (1852); *United states v. Hilton Hotels Corp.*, 467 F.2d 1000, (9th Cir. 1972), Para 28.

⁹ See Section 2 above.

employees' wrongdoing committed within the scope of the employment, the enforcement policy encourages corporations to internalize the social ramifications of their activities, and to adjust their activities - carried out by their employees - to the socially optimal standards of behavior. Second, an efficient enforcement policy must utilize corporations' ability to control their employees and ensure that they obey the law, especially when these corporations are able to control their employees better than the government agency. By holding corporations liable for their employees' wrongdoing, an enforcement policy may produce incentives for corporations to *self-enforce* the law, that is, to act in order to prevent, deter, and report their own misconduct, committed by their employee with the scope of the employment. This way, a corporate liability regime motivates corporations to become an 'active partner' in the battle against lawbreaking (Walsh and Pyrich 1995, pp. 620-1, 636, 678; Pitt and Groskaufmanis 1990, p. 1573; Huff 1996, p. 1263, 1295; Shavell 1997).

To understand the potential impact of self-enforcement actions on the social welfare, it may be worthwhile to distinguish between three types of self-enforcement activities that can be undertaken by corporations:

1. ***Ex-ante self-policing*** – this form of actions includes all education and prevention activities that may be undertaken by corporations *before* any lawbreaking occurs; *e.g.*, provision of detailed working procedures, guidelines, manuals, ethics codes, employees' trainings, and close monitoring. Given the vast amount of information possessed by corporations regarding the nature of their regulated activities, *ex-ante* self-policing actions may substantially reduce the number of regulatory violations committed by employees, and thereby, increase the social welfare.

2. ***Ex-post self-policing*** – this form of actions includes all deterrence activities that may be undertaken by corporations *after* a lawbreaking occurred. Within this category of actions we may consider, for instance, active detection and self-investigation of misconducts. As shown by the literature, corporations normally possess superior access relevant information, and thereby are most likely to detect employees' misconduct better than any government authority (Walsh and Pyrich 1995, p. 678; Kraakman 2009, p. 671; Shavell 1987, pp. 173-4; Khanna and Dickinson 2007, pp. 1728-9; Heineman April 2007, p. 89; Arlen 1994). Hence, when such *ex-post* self-policing activity is undertaken by corporations, rather than by government agencies, substantial enforcement cost may be saved.

3. **Self-reporting** – this form of actions includes statement or account made by corporations to the relevant government agency disclosing their own misconducts. As shown by the literature, self-reporting may relinquish substantial variable enforcement costs associated with detection of misconduct, evidence collection, and litigation of detected misconduct (Kaplow and Shavell 1994; Malik 1990).¹⁰

Having clarified the twin goals of corporate liability, the ensuing section canvasses the major corporate liability regimes adopted by the US Federal Court and policymakers, and discussed in the scholarly polemic.

4. MAJOR CORPORATE LIABILITY REGIMES

The approaches traditionally followed by the U.S. Federal Court concerning corporate liability can be crudely classified into two major liability regimes: a *strict corporate liability* regime, and a *negligence corporate liability* regime. Under the *strict corporate liability* regime corporations are held strictly liable for the misconduct of their employees committed within the scope of their employment, irrespective of the actions taken by these corporations to prevent, deter, or report misconduct.¹¹ By contrast, under a *negligence corporate liability* regime corporations are held liable for violations committed by their employees within the scope of their employment *only* if they failed to take due care in preventing violations, policing employee actions, and reporting self-detected violations.¹² *Which of these regimes suites best to achieve the twin social goals of corporate liability?*

¹⁰ The definitions above are slightly different from the definition of ‘policing measures’ used by Arlen and Kraakman (1997). There, policing measures are defined as measures taken by corporations before and/or after the wrongdoing occurs, which deter wrongdoing by increasing the probability that culpable agents will be sanctioned. This definition includes measures such as monitoring, investigating, and reporting actions altogether (Arlen and Kraakman 1997, p. 706). For the sake of isolating the impact of each sort of self-enforcement action on the social costs of regulatory violations, I find the detailed definition presented above useful.

¹¹ A strict liability approach has commonly implemented by the U.S. Federal Court in mid twentieth-century. A notable example is the case, *Dollar S. S. Co. v. United States*, 101 F.2d 638, 638-9 (9th Cir. 1939), where the court found that the corporation had taken ‘reasonable precaution,’ and nevertheless decided to hold it liable for its employee’s offense simply because it “*failed to prevent the commission of the forbidden act,*” stating that “[t]his resulting liability is like many others imposed upon an individual, regardless of his personal fault.” See also *United States v. Hilton Hotels Corp.*, 467 F.2d 1000, (9th Cir. 1972), Para 28. A similar approach was adopted by the British House of Lords. See for instance, *Tesco Supermarkets, Ltd. V. Natrass*, 1972 App. Cas. 153 (1971), p. 170.

¹² A negligence standard of liability has been applied, for instance, in *Faragher v. City of Boca Raton*, 524 U.S. 775, 118 S. Ct. 2275, 141 L. Ed. 2d 662, 157 A.L.R. Fed 663 (1998), and *Burlington Industries Inc. v. Ellerth*, 524 U.S. 742, 118 S. Ct. 2257, 141 L. Ed. 2d 633, 170 A.L.R. Fed 677 (1998), where the court

The Law and Economic literature has questioned the aptitude of both traditional liability regimes to achieve the twin social goals of corporate liability. As the argument goes, a *negligence* regime, under which corporations are relinquished from liability if they meet a due level of care, may fail to induce corporations to internalize the social ramifications of their behavior, for instance, with respect to the choice of their activity level (Arlen and Kraakman 1997). On the other hand, a *strict liability* regime, under which corporate compliance efforts are perceived irrelevant to the determination of corporate liability, may discourage such costly self-enforcement efforts, especially when the actions involved may result in an increased probability of detection by the regulatory authority (Arlen and Kraakman 1997; Arlen 1994).

In an attempt to identify improved corporate liability regimes, commentators have pointed at two major alternative liability frameworks: first, an ***adjusted strict liability regime*** that holds corporations strictly liable for their employees' misconduct, while insulating their expected liability from the effect of self-policing actions using measures such as immunity and privileges (Arlen and Kraakman 1997, pp. 719-26). Similarly to the traditional strict liability regime, the adjusted strict liability regime disregards the actions taken by these corporations to prevent, deter, or report violations. Nevertheless, unlike the traditional strict liability regime, this regime seeks to mitigate the possible perverse effects of self-enforcement actions arising under the traditional strict liability regime, which may, according to the authors, discourage corporations from engaging in self-policing.¹³ Second, a ***composite liability regime***, under which sanctions are set at different levels: one level contains high default sanctions that apply to all detected wrongs committed by corporations with suboptimal policing measures. The other levels include somewhat mitigated sanctions which are imposed on corporations that have satisfied (fully or partially) their self-policing duties (Arlen and Kraakman 1997, pp. 727-35). Similarly to the negligence regime, the composite liability regime takes into account corporations' self-enforcement actions, such as preventive, deterrence, and reporting actions, when determining corporate liability. Nevertheless, unlike the negligence regime

refused to impose civil liability on a corporation that 'exercised reasonable care to prevent and correct promptly any sexually harassing behavior.' See also *Montero v. AGCO Corp.*, 19 F. Supp. 2d 1143, 1146 (E.D. Cal 1998), judgment aff'd, 192 F.3d 856 (9th Cir. 1999); *Corcoran v. Shoney Colonial, Inc.*, 24 F. Supp. 2d 601 (W.D. Va. 1998). A similar approach was held with respect to criminal liability, see, for instance, *Holland Furnace Co. v. United State*, 158 F.2d 2, 8 (C.C.A. 6th Cir. 1946).

¹³ The adjusted strict liability regimes hold the corporations' expected liability insulated from the effects of self-enforcement measures in two alternative ways: (1) using rules of privilege or immunity to ensure that the probability that the corporation is sanctioned stays unchanged whether it self-enforces or not; (2) by adjusting the actual sanction to offset the increase in the probability of detection due to self-enforcement actions. See (Arlen and Kraakman 1997, pp. 719-26).

that *eliminates* corporate liability for corporations that met self-enforcement due level of care, the composite liability regime merely *mitigates* the default sanctions imposed on such corporations. The composite liability regime, which is followed by the U.S. Federal Organizational Sentencing Guidelines, can be seen as laying a negligence liability layer on top of a strict liability one.¹⁴ More particularly, at the base level corporations are held strictly liable for their employee's violation and incur a base sanction. On top of that, corporations may face additional layers of sanctions according to their culpability level, which is determined by the level of care undertaken in preventing, deterring, and reporting violations. Under such a regime, corporations that reasonably satisfy all their duties of care incur no additional penalty on top of the base sanction.

In their thorough study, Kraakman and Arlen (1997) illustrate how both the *adjusted strict liability* and the *composite liability* regimes may present a substantial improvement of the traditional liability regimes. Nevertheless, as acknowledged by the authors, none of these alternative regimes comprises a socially optimal regime at all times. Take, for instance, the *adjusted strict liability regime*; indeed, given the evidentiary privileges of compliance related material, corporations may be less reluctant to internally investigate their own violations. Nevertheless, similarly to traditional strict liability regime, under the adjusted strict liability regime as well corporations' self-enforcement actions, including prevention, deterrence, and even self-reporting, constitute neither an affirmative defense nor a mitigating factor of corporate liability. Therefore, under such a regime corporations have no incentive to step forward and report their own violations to the relevant government agencies.¹⁵

Similarly, a *composite regime* may reinforce corporations' incentives to undertake self-policing and deterrence actions. Nevertheless, this regime forces a heavier informational burden on courts and agencies, which are required to determine the due level of care *ex ante*, and evaluate corporations' internal enforcement activity *ex post*.¹⁶

¹⁴ See, (United States Sentencing Commission (USSC) 2009), available at: <http://www.ussc.gov/orgguide.htm>. For a general overview of the Organizational Sentencing Guidelines see, for instance, (Kaplan 2009; Maurer 1993; Clark 2009; Steer 2009; Nagel and Swenson 1993; Parker 1993).

¹⁵ See (Arlen and Kraakman 1997, p. 726): “*This regime can ensure optimal ex ante monitoring, but standing alone, it cannot induce optimal investigation and reporting, nor can it induce optimal monitoring if agents cannot verify their firms' monitoring efforts ex ante.*”

¹⁶ See (Arlen and Kraakman 1997, p. 730): “*Although increasingly elaborate strict liability regimes meld into composite regimes, composite liability always forces a heavier informational burden on courts, and hence imposes larger administrative costs.*”

Unlike strict liability, *duty-based liability frameworks* (negligence as well as the composite liability regimes) require courts and agencies to determine whether the duty to self-police has been duly met. Such liability systems are prone to fail due to the information asymmetry between law enforcers and the corporations, which may be strategically used by corporations to benefit from a liability reduction in exchange for ‘window dressing’ actions.¹⁷ More particularly, Kimberly Krawiec (2003, 2005), for instance, has shown that self-policing actions are easily mimicked by ‘window dressing’ ones, which are less costly for corporations. In these studies Krawiec has shown that courts and agencies do not always possess complete information and therefore they are not likely to adequately distinguish between effective and ‘cosmetic’ self-policing actions at all times. As a result, duty-based regimes may encourage corporations to adopt cosmetic self-enforcement actions, whereas by mimicking the effective actions, corporations may engage in privately profitable violations while benefiting from mitigated or eliminated sanctions.¹⁸ Therefore, although duty-based liability regimes, such as the negligence and the composite regimes could, in theory, induce corporations to self-police, they are fraught with the peril of opportunistic behaviour and “window dressing” self-policing.¹⁹

Hence, as suggested by Kraakman and Arlen (1997), the choice between the adjusted strict liability and the composite liability regimes is context dependent, and requires policymakers to weigh the comparative advantages of each regime in every given setting (Arlen and Kraakman 1997, pp. 730-5). Altogether, the scholarly literature has not identified a corporate liability regime that may satisfy the twin social goals of

¹⁷ The risk of “window dressing” self-enforcement activities is not merely theoretic. In several cases the court has actually found that the corporate compliance program was merely a “paper program;” See for instance, *United States v. Greyhound Corp.*, 370 F. Supp. 881 (N.D. III. 1974); *United States v. LBS Bank-New York, Inc.* 757 F. Supp. 496 (E.D. Pa. 1990); *Medical Slenderizing, Inc. v. State*, 579 S.W.2d 569 (Tex. Civ. App. Tyler 1979).

¹⁸ ‘Window dressing’ compliance programs are a major source of concern of enforcement agencies. For instance, a recent report promulgated by the British Office of Fair Trading (OFT) states: “*We consider that larger [penalty] discounts for compliance programmes would be undesirable for two reasons. First, the availability of a large discount might have an adverse impact on the deterrent effect of the potential financial penalties, perhaps even having an adverse effect on compliance activities. Second, such a policy could encourage the adoption of ‘sham’ compliance programmes in order to qualify for a discount.*” [Emphasis added – S.O.] See (Office of Fair Trading (OFT) 2010, p. 79).

¹⁹ For a similar approach see, for instance, (Gilson 1990, pp. 880-1): “*The problem with a subjective approach is error. Because of the difficulty of fact finding, a subjective approach can be simultaneously over and underinclusive, with costs resulting from error in either direction. But because a strategic plaintiff will have had the opportunity to shape the facts in a favorable manner, the dominant result is, again, underinclusiveness.*” See also (Perry and Dakin 2009, pp. 22-3). For a different approach see (Aviram 2005).

corporate liability in most settings. This is, I believe, the main contribution offered by this paper. Having canvassed the promises and the pitfalls of the alternative corporate liability regimes discussed in the scholarly polemic, in what follows I sketch the analytical framework for the development of an innovative liability regime, the *Compound Corporate Liability Regime*.

5. THE ANALYTICAL FRAMEWORK

The Law and Economics literature has thoroughly analyzed two major different structures of individual liability schemes, notably *strict liability* and *negligence*, weighing their comparative strengths and weaknesses.²⁰ The analysis in the individual actor's context focuses on the aptitude of different liability schemes to induce individuals to *internalize* the social ramification of their behavior. However, as shown above, when the corporate context is concerned, liability systems have an additional goal, that is, inducing corporations to engage in *self-enforcement* activities. Hence, the analysis of corporate liability regimes is based on a slightly different analytical framework. This section sketches an analytical framework which permits a systematic analysis of corporate liability regimes. Such a framework is designed to examine whether a given corporate liability regime may simultaneously achieve the twin social goals discussed above.

5.1. The General Settings

The point of departure for the analysis is that a precise standard of behavior is provided by regulations, *e.g.*, per-se prohibition of price fixing, or precise restrictions on pollution discharges.²¹ Given such regulations, suppose that by violating the regulation a corporation generates social harm, denoted as H ; ($H > 0$); that the government agency may detect such violations with a positive probability, denoted as P ; $P \in (0,1)$; and that corporations have a private gain generated by engaging in the regulated activity, denoted as G . Within this framework, the analysis relies on the following assumptions:

Assumption 1: corporations' *ex-ante* self-policing actions (education and prevention) reduce the probability that a violation occurs within these corporations;

²⁰ For a general discussion of the optimal choice between strict liability and negligence standards at the individual liability scheme see (Shavell 1980).

²¹ I assume away vague and ambiguous regulations, such as rule of reason regulations, whereas when the regulatory standard is fuzzy corporations only know a probability distribution of being liable at any level of care. See, for instance, (Van den Bergh and Schäfer 2000).

meaning that, if a corporation does not self-police *ex-ante*, the probability that a violation occurs is V^H ; $V^H \in (0,1)$. Alternatively, if a corporation self-polices *ex-ante* and bears the private costs of these actions, C_{ea} per violation, it reduces the probability that a violation occurs to V^L ; ($V^L \in (0,1)$; $V^L < V^H$).

$$\text{In summary: } \begin{cases} C_{ea} = 0; & V = V^H \\ C_{ea} > 0; & V = V^L \end{cases} \quad (0 < V^L < V^H < 1)$$

Assumption 2: corporations' *ex-post* self-policing actions (detection and investigation) increase the probability that corporations detect their own violations. If corporations do not self-police *ex-post*, the probability of self-detection is D^L ; $D^L \in (0,1)$. If alternatively, corporations self-police *ex-post*, and bear the private costs of *ex-post* self-policing, C_{ep}^P per violation, the probability of self-detection increases to D^H . ($D^H \in (0,1)$; $D^L < D^H$).

$$\text{In summary: } \begin{cases} C_{ep}^P = 0; & D = D^L \\ C_{ep}^P > 0; & D = D^H \end{cases} \quad (0 < D^L < D^H < 1)$$

Assumption 3: self-reporting can be undertaken with no significant costs for the corporation.

Assumption 4: self-reporting actions reduce the *variable* enforcement costs by saving some of the violation-specific enforcement actions, such as evidence collection and litigation.²² Note that this assumption coincides with the findings of the existing literature.²³ Given that I am merely interested in the *marginal* impact of self-reporting actions on the total social costs, for simplification purposes I assume that when a violation is self-reported the variable enforcement costs, denoted C_{ep}^S , are zero ($C_{ep}^S = 0$), and that when a violation is not self-reported, the variable enforcement costs are positive ($C_{ep}^S > 0$).²⁴

²² The notion of 'variable enforcement cost' is explained in Section 2 above.

²³ See the main text related to *supra* note 10.

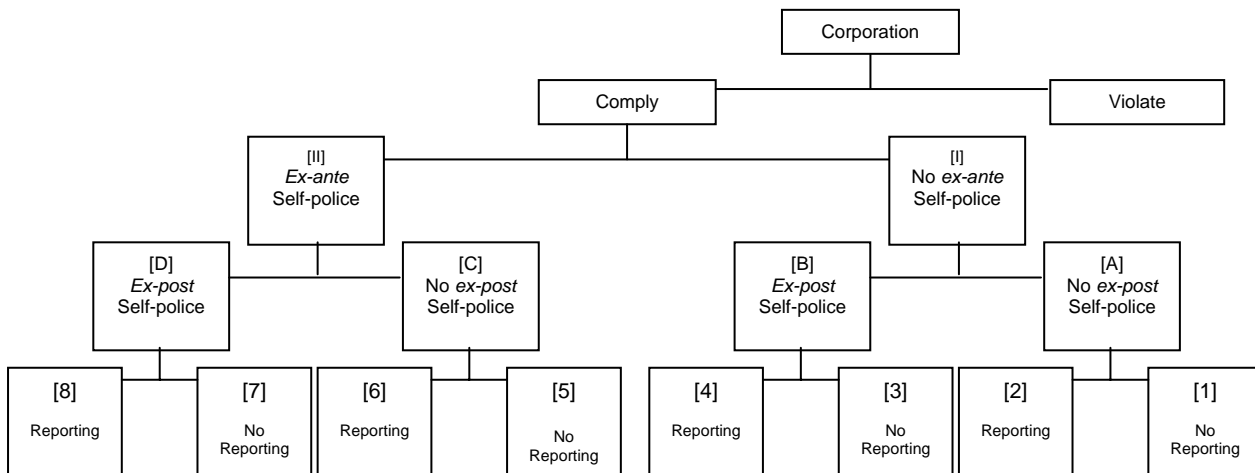
²⁴ I realize that even when violations are self-reported, variable enforcement cost may still be positive. Nevertheless, my focus here is on the marginal impact of self-reporting actions on the variable enforcement costs. Therefore, a similar result is reached if the variable enforcement costs of a self-reported violation have a positive value, say X , and the variable costs of a non-self-reported violation is $X + C_{ep}^S$. The only crucial assumption is that self-reporting actions reduce *variable* enforcement costs.

5.2. Corporate Compliance and Self-Enforcement Decisions

Compliance and self-enforcement decisions are made by corporations in subsequent stages. Each decision is made by comparing the corporations' expected utility under each of the alternative choices. Corporate compliance and self-enforcement choices are sketched in Scheme 1, which is followed by a discussion of such decisions.

Scheme 1

CORPORATE COMPLIANCE AND SELF-ENFORCEMENT DECISIONS



1. **Compliance decisions** – corporations have to choose whether to comply with the regulation, taking into account the sanction that would be imposed against violation of the regulation. This decision often includes choices which are related to the sort of corporate activity (*e.g.*, what to produce?); the level of activity (*e.g.*, how much to produce?); and the technology to be used (*e.g.*, how to produce?). When corporations opt for the compliance option, they have to adjust their activity to regulatory standards, *e.g.*, to secure a certain level of production that would prevent excessive level of pollution. However, as mentioned in section 3 above, even when the corporate management decides to comply with regulations, regulatory violations can still be committed by employees, even if against the explicit corporate policy. Therefore, when corporations decide to comply, they face the following subsequent decisions.

2. **Ex-ante self-policing decision** (decision: I–II in Scheme 1) – corporations have to choose whether to self-police *ex-ante*, *i.e.*, whether to act in order to educate their employees and prevent violations. When considering this decision, corporations take

into account: (i) the costs involved with *ex-ante* self-policing, $C_{ea} > 0$; and- (ii) the benefits which may result from these actions, namely, a reduction in the probability that a violation occurs in spite of the corporations' decision to comply. This reduction, which is attributed to the *ex-ante* self-policing, is captured by the difference between V^H and V^L , denoted as δV .

3. ***Ex-post self-policing*** (decisions: A-B / C-D in Scheme 1) – corporations have to choose whether to undertake *ex-post* self-policing actions, *i.e.*, whether to detect and investigate violations that have taken place within the corporation. When considering this decision, corporations take into account: (i) the costs involved with *ex-post* self-policing, $C_{ep}^p > 0$; and- (ii) the additional probability of self-detection of violations resulted from the *ex-post* self-policing actions. This increase, which is attributed to the *ex-post* self-policing, is captured by the difference between D^H and D^L , denoted as γD . Such an increased probability of detection facilitates more self-reporting, and therefore may be desirable for corporations that are motivated to self-report violations.

4. ***Self-reporting*** (decisions: 1-2 / 3-4 / 5-6 / 7-8 in Scheme 1): provided that corporations may self-detect their own violations, at the subsequent phase they have to choose whether to self-report these violations to the relevant government agency.²⁵

As mentioned above, utility-maximizing corporations make compliance and self-enforcement decisions using a cost-benefit analysis; they compare their net expected utility under each of the alternative choices and opt for choices that maximize their expected utility. Given the subsequent nature of corporations' decisions, the analysis that follows is made through a backward induction.

5.3. Optimal Decisions From a Social Perspective

Under which circumstances are corporate compliance and self-enforcement socially desirable? The answer to this question is provided by a 'golden rule,' according to which a certain action is socially desirable whenever the social benefits of such action equal or exceed the associated social costs. Put differently, a given action is socially desirable when the net expected social welfare is positive when such action is taken,

²⁵ It shall be noticed that some positive probability of self-detection may exist even when corporations decide not to self-police *ex-post*, for instance, when employees voluntarily report violations to the corporation. Hence, the self-reporting decision remains relevant whether corporations decided to self-police or not.

rather than not taken. Following this rule, let me now consider corporate compliance and self-enforcement decisions from a social point of view. The results of the analysis are summarized in Table 1, which is followed by a detailed explanation.

Table 1

THE SOCIALLY OPTIMAL CORPORATE COMPLIANCE AND SELF-ENFORCEMENT DECISIONS

| <i>The Condition For a Socially Desirable Action</i> | |
|--|---|
| Self-reporting | Always (<i>i.e.</i> , whenever a violation has been self-detected) |
| Ex-post self-policing (given self-reporting) | $C_{ep}^S \cdot V \cdot \gamma D \geq C_{ep}^P$ (“condition [1]”) |
| Ex-ante self-policing (given self-reporting) | $(H + C_{ep}^S - DC_{ep}^S) \cdot \delta V \geq C_{ea}$ (“condition [2]”) |
| Compliance (given conditions [1] and [2]) | $(H + C_{ep}^S)(1 - V^L) + V^L D^H C_{ep}^S \geq C_{ea} + C_{ep}^P$ (“Condition [3]”) |

Self-reporting – following the ‘golden rule,’ it is socially desirable that corporations self-report whenever the social benefit from self-reporting is greater than the social costs of self-reporting. Self-reporting, which can be done with insignificant costs (assumption 3 above), may generate a social benefit by reducing the variable enforcement costs (assumption 4 above). Hence, self-reporting is socially desirable, when:

$$\begin{array}{ccc} \text{Social benefit of} & \longrightarrow & C_{ep}^S > 0 & \longleftarrow & \text{Social cost of} \\ \text{self-reporting} & & & & \text{self-reporting} \end{array}$$

Given that by definition whenever the firm does not self-report its own violations the variable enforcement cost, C_{ep}^S , is positive (assumption 4 above), it is always socially desirable that corporations self-report every self-detected violation.

Ex-post self-policing – As mentioned above (section 5.2), *ex-post* self-policing actions (detection and investigation) may improve the probability that corporations detect their own violations. Moving backwards in the corporation decision scheme, given our earlier results, according to which self-reporting is always socially desirable, a social welfare evaluation of *ex-post* self-policing activity assumes that corporations report every self-detected violation. Such reports reduce the variable enforcement costs associated with the reported violations (assumption 4 above). Hence, *ex-post* self-policing is

desirable whenever the costs of such actions are lower than the variable enforcement costs which would have been invested by the government agency had the violation not been self-reported. Meaning that, corporate *ex-post* self-policing is socially desirable if condition [1] below is met, when V represents the relevant probability that a violation takes place:²⁶

$$[1] \quad \begin{array}{ccc} \text{Social benefit of} & \longrightarrow & C_{ep}^S \cdot V \cdot (D^H - D^L) \geq C_{ep}^P \\ \text{ex-post self-policing} & & \longleftarrow \text{Social cost of} \\ & & \text{ex-post self-policing} \end{array}$$

Ex-ante self-policing – *ex-ante* self-policing actions (education and prevention) may reduce the probability that a violation occurs. Hence, sticking to the ‘golden rule,’ such actions are socially desirable whenever their costs are lower than the total social costs of a prevented violation, *i.e.*, the social harm and the variable enforcement costs that would have been generated by the regulatory violation had the violation not prevented. Hence, *ex-ante* self-policing is socially desirable whenever condition [2] below is met:²⁷

$$[2] \quad \begin{array}{ccc} \text{Social benefit of} & \longrightarrow & (H + C_{ep}^S - DC_{ep}^S)(V^H - V^L) \geq C_{ea} \\ \text{ex-ante self-policing} & & \longleftarrow \text{Social cost of} \\ & & \text{ex-ante self-policing} \end{array}$$

Compliance – compliance with regulations is socially desirable whenever the total social cost caused by a violation is greater than the social cost associated with compliance. Assume, for instance, that conditions [1] and [2] above are met. Under these circumstances it is socially desirable that corporations comply with the regulation whenever the social *cost* associated with compliance, *i.e.*, the costs of self-enforcement, are lower than the social *benefit* of compliance, *i.e.* the total social costs saved due to

²⁶ When corporations self-police *ex-ante*, $V = V^H$; alternatively, when corporations do not self-police *ex-ante*, $V = V^L$ (see assumption 1 above).

²⁷ For every violation committed, the society bears a cost which equals the social harm caused by the violation and the variable enforcement costs $(H + C_{ep}^S)$. As we have seen, it is socially desirable that corporations report every self-detected violation. Hence, when considering the social condition for *ex-ante* self-policing through a backward induction, we should consider that corporations report every violation they detect with a probability D , and by that save DC_{ep}^S for every reported violation. Note that $D = D^H$ when corporations self-police *ex-post*; alternatively, when corporations do not self-police *ex-post*, $D = D^L$. As mentioned, *ex-ante* self-policing may reduce the probability that a violation occurs ($\delta V = V^H - V^L$). Hence, such actions are socially desirable whenever the social costs of the prevented violations $(H + C_{ep}^S - DC_{ep}^S)(V^H - V^L)$ are greater than the corporation’s cost of *ex-ante* self-policing, C_{ea} .

corporations' decision to comply and self-enforce. Hence, the condition for an efficient compliance is presented by condition [3] below:²⁸

$$[3] \quad \begin{array}{ccc} \text{Social benefit of} & \longrightarrow & (H + C_{ep}^S)(1 - V^L) + V^L D^H C_{ep}^S \geq C_{ea} + C_{ep}^P \longleftarrow \\ \text{self-enforcement} & & \text{Social cost of} \\ & & \text{self-enforcement} \end{array}$$

The next section relies on the analytical framework presented here in developing the compound liability regime.

6. COMPOUND CORPORATE LIABILITY REGIME

In this section I propose an innovative liability regime that may satisfy both social goals of corporate liability regimes in most settings. To this end, I look at a vital aspect that, in spite of its great importance, has not received enough attention in the previous literature analyzing the various structures of corporate liability regimes, that is, *the impact of corporate self-reporting on the total variable enforcement costs associated with regulatory violations*. This aspect, which has been thoroughly evaluated in an independent stream of literature, has been incorporated into the analytical framework presented above, which acknowledges that self-reporting actions reduce the variable enforcement costs associated with the reported violations (Kaplow and Shavell 1994; Malik 1990).²⁹ Considering the impact of self-reporting actions on the variable enforcement cost, I argue that an alignment of the corporations' incentives with the social interest can be reached if corporations' expected liability is adjusted to the social consequences of self-enforcement actions. More precisely, under the *Compound Liability Regime* suggested here, sanctions against corporate misconduct are bifurcated into two layers: *first*, a **default sanction** which equals the sum of the social harm and the variable enforcement costs caused by the violation, discounted by the probability of detection ($L^D = \frac{H + C_{ep}^S}{P}$); *second*, a **reduced sanction** which is set at the level of the social harm

²⁸ For the sake of simplicity I assume that compliance with regulations is not involved with positive costs except for costs of self-policing. Hence, if conditions [1] and [2] are met, and the a corporation decides to comply and self-police, the social benefit from these decisions are presented by the total costs which were saved due to the corporation's compliance $(H + C_{ep}^S)(1 - V^L)$, and the variable enforcement costs saved due to the corporation's self-policing $V^L D^H C_{ep}^S$. When such social benefit is equal or greater than the costs of compliance, $C_{ea} + C_{ep}^P$, compliance is socially desirable.

²⁹ For the purpose of this paper I concentrate on the impact of self-reporting actions on the variable enforcement costs and disregard their potential impact on the social harm. In fact, prompt reports of violations may, under certain circumstances, be crucial in restoring the harm and preventing its expansion (Innes 1999). This is, for instance, the case of drinking-water pollution. It is clear that a prompt detection of the discharges may be crucial in preventing a greater social harm.

caused by the violation ($L^R = H$). According to the compound regime, a reduced sanction shall be imposed instead of the default sanction against a misconduct that has been self-reported.

The compound regime can be seen as a two-layer strict liability regime, which holds corporations strictly liable for two different sorts of wrongs: (i) the regulatory violation committed (*e.g.*, pollution, price fixing); and (ii) corporations' failure to act in order to deter and report the regulatory violation. For each of these wrongs the compound regime ensures that corporations face an expected sanction which equals the social costs generated by the specific wrong.

To recognize the merits of the compound regime, it is important to notice that the total social costs associated with a regulatory violation are greater when corporations do not report, rather than report: when corporations do not self-report, the total social cost of the violation includes not only the direct harm generated by the violation, but also the variable enforcement costs, such as the cost of detection, evidence collection, and litigation. On the other hand, when corporations step forward and report their own violations, some of these variable enforcement costs are saved and the total social cost of the violation is lower. This variation in the social cost, which was left unrecognized by the liability regimes discussed in the existing literature, is mirrored by the compound regime when determining corporate expected liability. Under the compound regime the expected liability of corporations is greater when they do not report rather than report, while in both cases the expected liability equals the total social costs associated with the corporation's course of action.

To clarify the intuition underlying the compound regime, let me use a numerical illustration before turning to a more general model: suppose that a corporation exceeds the permitted level of pollution discharges and thereby causes a social harm of \$1,000. Further assume that if the corporation does not report, government agencies have to detect the culpable corporation, collect evidence, bring charges and litigate. Suppose that the variable enforcement cost associated with these actions is \$100 per violation. According to the compound regime, if the corporation does not self-report, it is expected to incur an actual sanction which equals the total social cost of the violation, discounted by the probability of detection, *i.e.*, $L^D = 1,100/P$. Hence, in that case, the corporation's

expected sanction equals the total social harm caused by the violation, *i.e.*, \$1,100.³⁰ Accordingly, when deciding whether to violate the regulations, the corporation internalizes the total social costs of the violation. Alternatively, assume that the corporation self-reports the violation, and therefore the \$100 variable enforcement costs are relinquished (*i.e.*, due to the corporate report there is no need for evidence collection, and possibly even not a complex litigation. Therefore the cost of evidence collection and litigation is saved). In this case, the total social cost of the violation is the direct harm caused by the violation, *i.e.*, \$1,000. According to the compound regime, if the corporation reports the violation, it incurs a reduced actual sanction which equals the social harm caused, \$1,000. This actual sanction also reflects the expected sanction, whereas when the corporation self-reports, the probability of detection is a unity ($P=1$). Therefore, when deciding whether to self-enforce, corporations internalize the variable enforcement cost; they are expected to undertake self-enforcement actions, *i.e.*, self-policing and self-reporting, whenever the costs of such actions are lower than the variable costs of public enforcement actions.³¹

Having clarified the intuition behind the compound regime, let me generalize the analysis of the compound regime by evaluating corporations' expected utilities under each of the decisions they face, using the analytical framework established above.

Self-reporting – as shown by the literature, to induce corporations to self-report an enforcement policy should allow those who report a violation to pay a sanction slightly lower than the certainty equivalent of the sanction they would face if they did not report the violation (Kaplow and Shavell 1994, p. 584). Under such circumstances, profit maximizing corporations find it rational to self-report their own violations (and bear the mitigated sanction), rather than being exposed to an expected liability, the equivalent certainty of which is greater. This is exactly the bedrock of the compound regime. Under the compound regime, when corporations self-report their own violations, they incur a

³⁰ The *expected* sanction equals the *actual* sanction to be imposed when the violation is detected, multiplied by the probability that the violation is detected.

³¹ As mentioned in *supra* note 24, self-reporting action not necessarily eliminates all variable enforcement costs. Often, even after a corporation report, enforcement agencies are require to verify the authenticity and accuracy of the report. The cost of such verification actions obviously are not relinquished due to the self-report and therefore should not be included in the penalty mitigation. Referring to the example above, suppose that a sum of \$20 out of the total \$100 variable enforcement cost is the verification cost. In such a case, the correct reduction of variable enforcement costs due to the report is merely \$80, and thus, the reduced sanction would be \$1,100 - \$80, or \$1,020. The crucial aspect of efficient penalty mitigation is that the size of the mitigation is determined by the size of the reduction in variable enforcement costs resulted from the corporation's self-report.

reduced sanction that equals the actual social harm caused by the violation, which is lower than the full social cost that would have been generated had the violation not reported. In other words, when corporations self-report a violation they face a lower expected liability ($EL^R = H$), than if they do not report ($EL^D = H + C_{ep}^S$).³² The expected utilities when corporations self-report, U^R , and when they do not self-report, U^{NR} , are given by the following expressions:³³

$$U^{NR} = G - V \cdot P \cdot \left(\frac{H + C_{ep}^S}{P} \right) \quad U^R = G - V \left[D \cdot H + (1 - D) \cdot P \cdot \frac{H + C_{ep}^S}{P} \right]$$

U^R is greater than U^{NR} .³⁴ Hence, under the compound regime, corporations have an incentive to self-report every detected violation. This incentive coincides with the socially optimal condition for self-reporting (see Table 1 above).

Ex-post self-policing – As we have seen, under the compound regime corporations prefer to self-detect their violations and self-report them, before such violations are detected by the agency. This way, corporations incur a reduced sanction, which is lower than the certainty equivalent of the expected default sanction. By *ex-post* self-policing (active detection and internal investigation) corporations increase the probability that they self-detect - and thereby increase the probability that they are able to report their own violations - before the government agency detects such violations. Therefore, under the compound regime corporations have an incentive to engage in *ex-post* self-policing. The expected utilities of corporations when they self-police *ex-post*, U_{ep}^{SP} , and when they do not do so, U_{ep}^{NSP} , are given by the following expressions:³⁵

³² If the corporation does not report, the actual sanction which includes the variable enforcement cost is $L^D = \frac{H + C_{ep}^S}{P}$, and the probability of detection is P . Hence, the expected liability is $EL^D = H + C_{ep}^S$. If, alternatively, the corporate self-reports, the actual sanction is $L^R = H$, and the probability of detection becomes a unity ($P = 1$). Hence, the expected liability is ($EL^R = H$).

³³ U^{NR} equals the gain of corporations from engaging in their activity, G , minus the expected sanction, $P \cdot (H + C_{ep}^S) / P$, multiplied by the relevant probability that a violation actually occurs, V . Similarly, U^R equals the gain of corporations from engaging in their activity, G , minus the relevant probability that a violation occurs, V , multiplied by the sum of the expected sanction when corporations detect and report, $D \cdot H$, and the expected sanction when they do not do so and the violations is detected by the agency $(1 - D) \cdot P \cdot (H + C_{ep}^S) / P$.

³⁴ U^R is greater than U^{NR} , when $V^H \cdot D^L \cdot C^H > 0$, which by definition is always the case.

³⁵ U_{ep}^{NSP} equals the gain of corporations from engaging in the regulated activity, G , minus the relevant probability that a violation actually occurs, V , multiplied by the sum of the expected liability when the corporation self-reports, $(D^L \cdot H)$, and when it does not report and the violation is detected by the

$$U_{ep}^{NSP} = G - V \left[D^L \cdot H + (1 - D^L) \cdot P \cdot \frac{H + C_{ep}^S}{P} \right] \quad U_{ep}^{SP} = G - C_{ep}^L - V \left[D^H \cdot H + (1 - D^H) \cdot P \cdot \frac{H + C_{ep}^S}{P} \right]$$

U_{ep}^{SP} is greater than U_{ep}^{NSP} whenever $C_{ep}^S \cdot V \cdot \gamma D \geq C_{ep}^L$. Meaning that, under the compound regime, corporations' incentives to *ex-post* self-police coincide with the social interest (condition [1] in Table 1 above).

Skeptics may argue that under the compound regime corporations may be discouraged from engaging in *ex-post* self-policing, whereas such actions may, under certain circumstances, have a perverse effect on corporations expected liability (Arlen 1994). However, the risk of such a perverse effect does not seem to pose substantial challenges to the compound regime; *first*, *ex-post* self-policing actions, such as internal investigation of employee misconduct, are a key instrument for corporations to improve and refresh their internal policies, and thereby to prevent recurrence of the misconduct. Therefore, even when facing the risk of a perverse effect at the short-term, corporations may still be motivated to self-police in order to minimize their long-term liability exposure. *Second*, when considering the potential impact of *ex-post* self-policing actions on corporate expected liability, one may juxtapose the '*potentially perverse effect*' against the '*potentially positive effect*' of such self policing actions expressed by a reduction in the probability of erroneous enforcement actions against an innocent corporation.³⁶ Such a positive effect may outweigh the potentially adverse effect of self-policing. *Third*, the discouraging impact of perverse effects may be overcome by insulating corporations' expected liability from the effect of self-policing actions by using measures such as immunity and privileges, as offered by the adjusted strict liability regime (Arlen and Kraakman 1997, pp. 719-26). On top of all that, the theory of perverse effect has yet to be supported by empirical evidence. Nevertheless, assuming that such an effect actually exists, it may obviously be relevant to some – but not all – self-policing

government agency, $(1 - D^L) \cdot P \cdot \frac{H + C_{ep}^S}{P}$. The U_{ep}^{SP} is calculated in the same way, with two main differences:

first, it deducts the cost of *ex-post* self-policing borne by the corporation from the corporate utility ($-C_{ep}^L$); *second*, it considers that when the corporation *ex-post* self-polices, the probability of self-detection is D^H , rather than D^L (See assumption 2).

³⁶ Suppose, for instance, that a lake surrounded by several facilities had been polluted, and that one facility initiated a prompt internal investigation to verify its potential involvement in causing the pollution. The internal investigation, which included prompt and extensive examination of the pollutants found in the water, confirmed that the corporate facility is certainly not the source of the pollution. The results of the internal investigation may serve the corporation in thrusting any erroneous accusation by the government agency, which may rely on less credible evidence. In fact, such 'acquittal evidence' may insulate the

measures that may be employed by corporations. Hence, choosing from a marketplace of available measures, corporations may decide to employ those measures that are less, if at all, vulnerable to a perverse effect.

Ex-ante self policing – As discussed in section 3 above, by *ex-ante* self-policing (prevention actions, ethics codes, employee trainings, etc.) corporations may reduce the probability that employee misconduct takes place against the corporate policy. Therefore, following the ‘golden rule,’ profit-maximizing corporations are motivated to engage in *ex-ante* self-policing to the extent that the marginal benefit of such actions (*i.e.*, the marginal reduction of expected liability resulting from the reduction of the probability that employee misconduct takes place) outweighs their marginal cost (*i.e.*, the cost of an additional unit of self-policing action). Given that, as seen above, under the compound liability regime corporations engage in efficient self-reporting and *ex-post* self-policing, the expected utilities of corporations when they *ex-ante* self-police, U_{ea}^{SP} , and when they do not do so, U_{ea}^{NSP} , are given by the following expressions:

- When corporations engage in *ex-post* self-policing and self-reporting: (*i.e.*, when condition [1], $C_{ep}^S \cdot V \cdot \delta D \geq C_{ep}^P$, holds):

$$U_{ea}^{NSP} = G - C_{ep}^P - V^H \left[D^H H + (1 - D^H) \cdot P \cdot \frac{H + C_{ep}^S}{P} \right]$$

$$U_{ea}^{SP} = G - C_{ep}^P - C_{ea} - V^L \left[D^H H + (1 - D^H) \cdot P \cdot \frac{H + C_{ep}^S}{P} \right]$$

U_{ea}^{SP} equals (or greater than) U_{ea}^{NSP} whenever $(H + C_{ep}^S - D^H C_{ep}^S) \cdot \delta V \geq C_{ea}$, *i.e.*, corporations’ incentive to engage in *ex-ante* self-policing is aligned with the social interest (see condition [2] in Table 1 above).

- When corporations do not self-police *ex-post*, but self-report (*i.e.*, when condition [1] does not hold, and therefore $C_{ep}^S \cdot V \cdot \delta D < C_{ep}^P$,):

$$U_{ea}^{NSP} = G - V^H \left[D^L H + (1 - D^L) \cdot P \cdot \frac{H + C_{ep}^S}{P} \right]$$

$$U_{ea}^{SP} = G - C_{ea} - V^L \left[D^L H + (1 - D^L) \cdot P \cdot \frac{H + C_{ep}^S}{P} \right]$$

corporation from the ‘list of suspects’ at a very early stage of the investigation, and therefore save reputation damages.

U_{ea}^{SP} equals (or greater than) U_{ea}^{NSP} whenever $(H + C_{ep}^S - D^L C_{ep}^S) \cdot \delta V \geq C_{ea}$, *i.e.*, the corporations' *ex-ante* self-policing is aligned with the social interest (see condition [2] in Table 1 above).

Compliance – given that under the compound regime corporations always face an expected liability which equals the social costs caused by their conduct, corporations' incentive to comply with regulations is aligned with the social interest. This result of the compound regime guarantees that corporations internalize the social ramifications of their activity. For instance, Assuming that conditions [1] and [2] for *ex-ante* and *ex-post* self-policing are met (*i.e.*, $C_{ep}^S \cdot V \cdot \gamma D \geq C_{ep}^P$; $(H + C_{ep}^S - D^L C_{ep}^S) \cdot \delta V \geq C_{ea}$). Corporations' expected utility when they comply, U^C , and when they violate the regulation, U^V , are given by the following expressions:

$$U^V = G - P \cdot \frac{H + C_{ep}^S}{P} \qquad U^C = G - C_{ea} - C_{ep}^P - V^L [D^H H + (1 - D^H)(H + C_{ep}^S)]$$

Corporations choose to comply whenever $U^C \geq U^V$, *i.e.*, whenever $(H + C_{ep}^S)(1 - V^L) + V^L D^H C_{ep}^S \geq C_{ea} + C_{ep}^P$. Meaning that under the compound regime, corporations' incentives to comply coincide with the social interest (condition [3] in Table 1 above). Hence, under the compound regime corporations are expected to comply with regulations whenever compliance is socially desirable.

Using the analytical framework constructed above, it is evident that the compound regime aligns corporations' incentives with the social interest. It does so, by compelling corporations to internalize the social costs associated with each of the decisions they make. When corporations violate the regulation 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 regulation but do not self-enforce, 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 variable enforcement cost. Given the complete alignment of incentives, the compound regime reaches both social goals of a liability regime simultaneously and is likely to induce efficient corporate compliance and self-enforcement activity.

The compound regime suggested in this paper acquires its merits from several sources: *first*, it provides corporations with the appropriate incentives to comply with regulations and to self-enforce them whenever such actions are socially desirable. This

outcome is generated due to the fact that the compound regimes accounts for the direct impact that self-reporting actions have on the overall social costs associated with regulatory violations; *second*, this regime minimizes the sum of the social harm generated by regulatory violations and the costs of enforcement actions; *third*, unlike duty-based frameworks (negligence and composite regimes), the compound regime does not require courts and agencies to evaluate the effectiveness and the trustworthiness of self-policing actions taken by corporations. Instead, it relies on a *verifiable* action, self-reporting, and therefore less, if at all, vulnerable to corporate opportunistic behavior; *fourth*, and closely related to the former strength, the compound regime provides a workable solution which does not involve substantial administrative and error costs. Under the compound regime policy-makers are not required to define the proper level of care. Such determination is expected to be done by each corporation when choosing the optimal self-enforcement actions to be employed given its specific circumstances; and *fifth*, the compound regime reduces the risk – to the extent it actually exists³⁷ – of judgment proofness by reducing the ‘end-sanctions’ incurred by corporations.³⁸

Before closing; *would the merits of the compound regime hold even when corporations have a private gain from employee misconduct?* One could argue that when corporations benefit from employee violations (e.g., price fixing), they may be reluctant to engage in self-enforcement. However, in fact, under the compound regime, corporation and social goals are being kept aligned even when corporations gain from employee violations. When applying the compound regime one must consider the effect of the corporate additional gains from the misconduct not only on the private utility of corporations, but also on the social interest. The net social cost generated by a violation is simply the difference between the total social cost caused by the violation and the gains earned by the corporation due to this violation.³⁹ Hence, under the compound regime even when additional gains are generated by a violation, corporations’ incentives and the social interest remain aligned.

³⁷ Some scholars have argued that the ‘judgment proof’ problem does not seem realistic: “*Individuals are rarely if ever fined an amount approximating their wealth, especially for activities which impose relatively small external costs*” (Polinsky and Shavell 1979).

³⁸ Scholars have shown that the sanctions often imposed upon corporations in reality are based not only on the harm to society, but also on the variable enforcement costs (Polinsky and Shavell 1992, p. 145). The liability framework endorsed by the compound regime recognizes instances that warrant a reduction of end-sanctions, and therefore mitigates the judgment proofness problem.

³⁹ See (Becker 1968, p. 173), which introduces “the social value of the gain to offenders” from their offense.

7. CONCLUDING REMARKS

To induce corporate self-enforcement, the expected sanction corporations face when self-enforcing must be lower than the expected sanction they face when refraining from doing so; if corporations are not rewarded for self-enforcement actions, they simply have insufficient incentives to do so, considering the costs involved with self-enforcement actions. Such a shortage of incentives to self-enforce is the major flaw of the strict liability and the adjusted strict liability regimes. On the other hand, if the mitigation of sanctions is determined by corporations' self-policing actions, an information asymmetry problem may result in an inefficient reduction of sanctions, which is triggered by cosmetic self-policing actions. The latter problem is the main failure of duty-based liability regimes, *i.e.*, negligence and composite regimes. The compound liability regime is centered on an idiosyncratic mitigation of the default sanction: (1) the mitigation of the sanction is triggered by verifiable actions, corporations' self-reporting; (2) the amount of the sanction mitigation is determined by the social gain generated by self-enforcement actions, *i.e.*, the reduction in the variable enforcement costs resulted from self-reporting actions. This way, the compound regime induces corporations to internalize the total social costs of their conduct, and at the same time, to self-police and report wrongdoings whenever such actions are socially desirable.

The analytical framework and the conclusions of the analysis may have several policy implications. First and foremost, the compound regime provides a workable liability framework that can be applied by most regulatory agencies simply by using their own enforcement data; suppose, for instance, that an agency knows that the average administrative cost of air pollution investigation and litigation is \$50,000, and that only one-third of pollution cases it examines result in detection and sanctioning. Further suppose that a certain pollution violation caused a \$500,000 social harm. Therefore, the default *expected* sanction in this case is \$550,000, and the default *actual* sanction is \$1,650,000.⁴⁰ To apply the compound regime, the agency simply has to offer corporations to pay a \$500,000 fine (instead of a \$1,650,000) if they self-report the violation. The reduction of the *expected* liability (from \$550,000 to \$500,000) reflects the reduction of the variable enforcement cost due to the self-reporting action. Such a liability scheme is expected to align corporate and social goals. In addition, the bedrocks

⁴⁰ The *expected* sanction equals the total social cost associated with the violation. See the main text related to *supra* note 4. To set the *actual sanction* the *expected* sanction has to be discounted for the probability of detection ($\frac{1}{3}$), in this case: $\frac{55,000}{1/3}$, or simply \$1,650,000.

of the compound regime may have several broader policy implications. For instance, one may use this framework in determining the size of a penalty mitigation in plea bargaining contexts, considering the reduction in variable enforcement costs resulting from the plea bargaining. Similarly, one could hinge on the incentive scheme provided by this regime to induce remediation, restitution, or restoration of harm caused by wrongdoers, through a liability mitigation that mirrors the reduction in public remediation, restitution, or restoration costs.

Lastly, this study has not investigated the role that corporate liability regimes may play in coping with agency problem between shareholders and managers. It assumes that corporations' managers are incentivized to maximize their corporation's profits. When a separation of ownership and control is introduced, corporate liability may play a substantial role in aligning shareholders' and managers' compliance incentives. The question as to which structure of corporate liability may be most efficient in aligning such incentives is left for future research.

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