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Working Paper

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SAFE Working Paper, No. 435

Provided in Cooperation with:

Leibniz Institute for Financial Research SAFE

Suggested Citation: Morell, Alexander (2024) : Should cartel sanctions be reduced in case the offender runs a corporate compliance program?, SAFE Working Paper, No. 435, Leibniz Institute for Financial Research SAFE, Frankfurt a. M., <https://doi.org/10.2139/ssrn.5005778>

This Version is available at:

<https://hdl.handle.net/10419/306362>

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Alexander Morell

Should Cartel Sanctions Be Reduced in Case the Offender Runs a Corporate Compliance Program?

SAFE Working Paper No. 435 | October 2024

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Should cartel sanctions be reduced in case the offender runs a corporate compliance program?¹

Alexander Morell

draft 9/2024

Abstract:

A bonus on the fine in response to the defendant running a corporate compliance program is superfluous because working leniency programs provide all the incentives necessary to implement efficient compliance. Others opposed to such a bonus argue that unreduced fines are sufficient to incentivize the adoption of effective corporate compliance programs. Proponents, on the other hand, argue that a reduction in fines conditional on running a corporate compliance program incentivizes more investments in compliance. Both arguments are incomplete. It is true that, generally, sanctions alone provide only suboptimal incentives to invest in compliance because some compliance investments (those in detecting infringements, i.e., “policing”) can increase the detection probability for cartels that remain. However, leniency programs provide an additional incentive to invest in compliance to find cartels in-house as all cartelists strive for being the first to report. Comparing the two effects shows that under plausible assumptions the latter dominates, rendering a bonus on the fine superfluous.

JEL-Codes: G34, L22, L41

Keywords: Corporate compliance programs, leniency programs, antitrust sanctioning, corporate governance

¹ I thank Sindri Engilbertsson, Andreas Engert, Hendrik Hakenes, Marvin McConvey, Rupprecht Podszun, Johannes Rottmann, Daniel Schellenberg, Nicolas Schutz, Daniela Seeliger and Wouter Wils as well as the participants at a SAFE Seminar, the FUELS-Seminar Berlin, ASCOLA Porto and MaCCI-Annual 2024 for helpful discussions or comments on earlier versions of the draft.

I. Introduction

By the beginning of this decade the so called “compliance revolution”² has finally reached antitrust. Our field was late to the party. In other fields, such as civil rights, mass torts, environmental crime and corruption, the revolution had constantly progressed for the last 20-30 years.³ One aspect of the revolution’s success is that in these fields, corporate compliance programs are rewarded with lower fines.⁴ Antitrust was different. The European enforcement agencies,⁵ led by the European Commission,⁶ did not reduce sanctions in case the offender had a corporate compliance program in place. The last time the Commission granted a reduction of a fine in response to a corporate compliance program in a cartel case was back in the nineties.⁷ Since then, the Commission and with it a large share of the European Competition Network has opposed such reductions.⁸ In the USA, the Department of Justice (DoJ) exempted antitrust from the general sentencing guidelines which demanded a reduction in fines if the defendant had run an effective compliance program.⁹ However, the ancient regime has begun to falter. In 2019, the DoJ scrapped the exception for antitrust.¹⁰ Now, having run an effective corporate compliance program at the time of the infringement can lead to significant reductions of fines in the field of antitrust, too.¹¹ In Germany, the legislator used the reform of the competition act in 2021 to ask the cartel office to reduce sanctions in response to the introduction of a working corporate compliance program¹² – a practice to which the cartel office had formerly been vigorously opposed.¹³ There are instances of counter-revolutions in antitrust compliance, too. The UK used to be among the countries that granted reductions of fines when observing effective compliance¹⁴ but switched back in line with the Commission – after Brexit in 2021.¹⁵ France obliged firms to run corporate compliance programs across the board and ceased to grant a bonus for fulfilling that duty.¹⁶ In the US, some deplore that agencies have run into a “compliance trap” by delegating the oversight of

² Armour et al. (2020, p. 1199); Chammas (2021, p. 667); Garrett and Mitchell (2020, p. 50).

³ Arlen (1994, pp. 839–840) on sentencing guidelines; Garrett and Mitchell (2020, p. 54).

⁴ Riley and Daniel Sokol (2015, p. 31).

⁵ Glöckner (2017, p. 911) on the German Cartel Office; Glöckner (2017, p. 911) on the French competition authority; Holzhäuser et al. (2020, p. 1234) on the German Cartel Office; König (2019, pp. 154–155) on the German Cartel Office; Matthey and Dittrich (88) on the German Cartel Office; Thepot (2018, p. 208) on the French competition authority.

⁶ Glöckner (2017, p. 911); Matthey and Dittrich (88); Thepot (2018, p. 198); Wagner-von Papp (forthcoming, p. 42).

⁷ European Commission (2021, p. 4); Wils (2013, p. 53).

⁸ European Commission (2021, p. 4); OECD (2021, p. 12).

⁹ Dittrich and Linsmeier (2014, p. 490); Riley and Daniel Sokol (2015, p. 45).

¹⁰ Galle and Rengier (2020).

¹¹ Abrantes-Metz et al. (2021, 48, 57).

¹² Section 81d I 2 No. 4, 5 of the German Competition Act.

¹³ Baur and Holle (2018, p. 15). See also footnote 5. But see Ost (2015) For ways in which corporate compliance programs can influence the fine in Germany.

¹⁴ Glöckner (2017, p. 911); Thepot (2018, p. 198).

¹⁵ Step 3 (2.17) in the Guidelines does not include corporate compliance programs anymore, Competition and Markets Authority (2021).

¹⁶ Sükösd (2022, p. 188); Thepot (2018, p. 208).

business activity to untested compliance programs that often turn out ineffective.¹⁷ There are indeed reasons to look at the compliance revolution in antitrust with some suspicion. At least in Germany, the promotion of the compliance revolution seems to be partly fueled by attorney lobbying.¹⁸ Law firms wish to sell corporate compliance programs to their clients and the client's willingness to pay for these programs will increase considerably, if clients can be sure to reap a well-defined benefit from these programs in case they are fined.

Today, the enforcement landscape is in revolutionary turmoil. Both the literature as well as the different enforcement agencies are divided over the question of whether sanctions should be reduced if the defendant had run an effective compliance program.¹⁹ OECD-wide, any consensus about how corporate compliance programs should be treated in antitrust, seems to be far away.²⁰

When I talk about corporate compliance programs in this paper, I mean organizational structures and rules implemented in an undertaking to prevent its employees to engage in cartelization of any kind. Such programs typically establish four things. They install what I call (1) "*prevention*". That is, they change incentives and culture to reduce the probability that employees engage in anticompetitive conduct. They implement (2) *training* to tell employees what is allowed and what is forbidden. They engage in repression by (3) finding employees who broke the law ("*policing*") and (4) *sanction* them.

II. Question and Outline

Should cartel sanctions be reduced in case the offender runs a corporate compliance program? The discussion about this question has produced an extensive literature. At its core, two arguments are pinned against each other.

Opponents of a bonus argue that a reduction of the probability to commit a competition law infringement will incentivize firms sufficiently to adopt a corporate compliance program because it reduces the expected fine.²¹ Proponents counter that these programs are beneficial, and the bonus therefore brings more of a good thing which they perceive as

¹⁷ Garrett and Mitchell (2020, p. 55).

¹⁸ Podszun (2021) reporting the efforts of a leading partner at Linklaters (Daniela Seeliger). The Studienvereinigung Kartellrecht, an association of attorneys, was also vigorously arguing in favor of incentivizing investments into corporate compliance: Studienvereinigung Kartellrecht (2020, 29). See also the arguments brought early on in 2016: Seeliger (2016). In Switzerland lawyers seem to have advocated for fine reductions in response to Corporate compliance programs even more vigorously than the undertakings themselves, Hüschelrath (2010, p. 500).

¹⁹ Geradin (2013, pp. 328–329); Thepot (2018, p. 198); Wils (2013, p. 76).

²⁰ European Commission (2021, p. 9).

²¹ European Commission (2012, pp. 9–10, 2021); European Court of Justice (2013, 142) citing the Commission and approving its position in para. 143-144; Holzhäuser et al. (2020, p. 1232); Ost (2015, p. 423); Pampel (2007, p. 1639).

desirable.²² A²³ supporting argument to the two main ones is also discussed. Promoters of a bonus naturally will be convinced that competition authorities can distinguish between effective and ineffective compliance programs at reasonable costs, so that only the “good” ones are rewarded. Indeed, proponents think that the authorities already do assess the quality of compliance programs in their day-to-day business, for instance when repealing debarments.²⁴ Some argue that any concern of the agency’s ability to assess a program’s quality can be dealt with by allocating the burden of proof of the effectiveness with the defendant.²⁵ Opponents of a bonus object that enforcement agencies will not be able to tell good from bad compliance programs, promoting window dressing by companies as a result.²⁶

The main arguments are incomplete. The purpose of this article is to show where they are and to provide the missing piece. The opponents’ argument is incomplete because indeed the mere reduction of the probability of an infringement generally may not suffice to efficiently incentivize investments in compliance. Firms may fear to inadvertently self-reveal unprevented infringements to the authorities their own corporate compliance policing efforts and conclude to only make curbing their investments. However, the proponents’ argument is incomplete, too, in that more is not always better. Creating incentives is about optimality and thus tradeoffs. Indeed, lenience programs, too, provide an incentive to invest in compliance. If fines are deterrent and the authorities offer a leniency program, all firms involved in the cartel want to report their cartel first. To do that, they must be informed. This provides them with an incentive to invest in uncovering infringements. The missing piece this article will provide is the analysis of the tradeoff between the disincentive to invest in compliance due to compliance programs’ potential to increase the detection probability and the incentive to invest in compliance that leniency programs provide. The article will argue that under all reasonable circumstances, the incentive by leniency programs will dominate.

In the following, I allow myself (as I already have up to here) to use the word “cartel” for any infringement of Art. 101 TFEU. I discuss cartels that are unwanted by the firm or at least by

²² Baur and Holle (2018, pp. 15–16); Holle (2020, 353, 357); Holzhäuser et al. (2020, pp. 1234–1235); Murphy and Kolasky (2012); Riley and Daniel Sokol (2015, 31, 39); Sükösd (2022, p. 192); Trüg and Ruppert (2020, p. 92).

²³ There are of course more arguments being made. They are, however, more peripheral. Proponents of a bonus on the fine also argue that the bonus is required to convince top management of the usefulness of corporate compliance programs: Riley and Daniel Sokol (2015, p. 36, 2015, p. 41). This is unlikely in most settings because, when setting up a corporate compliance program in companies with delegated management, managers can reduce their personal liability risk with third party funds, which they are very likely to find appealing: Holle (2020, p. 363). Proponents of a bonus also argue that bonuses are completely accepted in bribery law which they find similar to competition law: Geradin (2013, pp. 328–329); Parcu and Stasi (2016, p. 5); Riley and Daniel Sokol (2015, p. 31); Thepot (2016, 2018, p. 198).

²⁴ Baur and Holle (2018, p. 18); Dittrich and Linsmeier (2014); Eufinger (2018, p. 329); Geradin (2013, p. 335); Holzhäuser et al. (2020, p. 1234); Matthey and Dittrich (124); Riley and Daniel Sokol (2015, p. 41); Thepot (2016).

²⁵ Thepot (2016).

²⁶ Garrett and Mitchell (2020, pp. 59–61); Glöckner (2017, p. 907); Wagner-von Papp (forthcoming, p. 42); Wils (2013, pp. 66–68).

top-management.²⁷ A bonus for compliance programs is pointless if management would happily ignore, both, the full and the reduced fine because the benefits of cartelization would outweigh its risk. Even if management opposes cartels, there might be rogue employees or uninformed ones who are not reached by those firm-level incentives (their private incentives may lead them to cartelize, for instance, by simply fixing prices or quotas to save effort instead of working hard to acquire more business) or who do cartelize “by accident” (negligently talking about price relevant information with competitors, for instance). Explicitly, I only examine bonuses for corporate compliance programs that were implemented before any authority initiated the case (“ex-ante-programs”). I do not discuss programs that were implemented to resolve a case internally (“remedy-programs”) or those adopted after the firm has been caught cartelizing (“ex-post-programs”), for instance in response to a demand by the authority. The argument presented in this article does apply to these programs analogously.²⁸ The following argument will be based exclusively on the idea of optimal deterrence.²⁹ According to this approach, there is a reason to grant a bonus for running a corporate compliance program if and only if that bonus is required to compensate a private cost that should not matter from a public welfare point of view.

III. Underinvestment in compliance due to an increase of the detection probability?

The threat of a sanction for cartels may not suffice to incentivize optimal investment in compliance. Investments in compliance may create a private cost for the company that does not correspond to any public interest. This drives the firm’s actions away from the public interest unless it is rewarded by a bonus.

1. Why do sanctions target firms?

Firms cannot act. Individuals infringe the law. Corporations are liable for these infringements of competition law in line with the widely accepted principles of vicarious liability.³⁰ With notable exceptions,³¹ the law punishes (in criminal law) the company or holds it to be jointly and severally liable (in civil law), respectively, for any offense that its employees commit in the exercise of its business.³² This liability is strict in that the company itself (or in the person of its highest management) does not need to act negligently but instead the company is strictly liable for the negligence of its employee. Its employee, however, must often be proven to have acted negligently. Strict liability will regulate the activity level, liability for negligence will

²⁷ Wagner-von Papp (forthcoming, p. 8) writes that this assumption is “usually posited in the literature on the corporate governance of competition law sanctions”.

²⁸ They, too, may increase the expected fine by increasing the detection probability while at the same time increasing the probability to be the first to apply for leniency. In an ex-post-program, this is true for future cartels. In a remedy-program, this may be true for the current cartel, although leniency may only be partial because one is too late to be first.

²⁹ I cannot see why arguments based on “guilt” should matter for the fining of corporations.

³⁰ Arlen and Kraakman (1997, p. 689); Geradin (2013, p. 328); Thepot (2018, p. 179); Wils (2013, p. 69)

³¹ Germany, for instance, see: Glöckner (2018, p. 396); Matthey and Dittrich (99).

³² Kraakman (2009, p. 134). Specifically for European competition law see Biermann (2020, 125) with reference to the ECJ’s decision in Pioneer.

not.³³ If the principal lets the agent engage in a dangerous task but cannot control whether the agent will cause harm, the principal should at least reduce the task to a level, which is efficient for that degree of risk. However, the principal will only do this if he cannot exempt himself from liability by being careful.³⁴ Secondly, as liability for negligence would too, strict liability will induce efficient care by the principal.³⁵ Liability for negligence, however, will only do so if courts are able to assess and verify the principal's efficient policing.³⁶ As a corollary, strict liability also spares the effort to investigate negligence.³⁷ That may save a lot of costs, especially in complex organizations.

Vicarious liability is implemented for three reasons, typically. First, where agents are judgement proof, i.e., cannot pay the sanction, they are not marginally deterred by sanctions exceeding their budget.³⁸ A manager who is potentially liable for the harm resulting from cartelization may be insolvent regardless of whether the harm amounts to two million or two billion. Consequently, he will not invest in reducing the potential harm from two billion to two million. Here, vicarious liability can help. Holding the firm vicariously liable incentivizes her to guide the manager to reduce the harm efficiently.³⁹ Vicarious liability can therefore incentivize the firm to induce lawful behavior in their employees. The company can often set more effective incentives to agents with limited budget. It can incentivize by rewards instead of fines, for example. In antitrust law, in particular, the company can make antitrust violations less attractive to employees by foregoing certain forms of incentive pay, thereby alleviating the pressure on agents to meet certain profit targets. The firm will know best which incentives employees are most susceptible to and can thus sanction most cheaply.⁴⁰ It can also monitor employees so closely that, given the increased probability of detection, a comparatively low penalty has a deterrent effect, attenuating the problem of judgement proofness. To motivate the corporation to make use of such instruments, it must be exposed to an incentive through the threat of sanctions.

Second, firms will typically be better informed (and have an easier time informing themselves) about competition law than their employees. Vicarious liability incentivizes firms to educate their employees on which business conduct is legal and which is not.⁴¹ Where the distinction between legal and illegal behavior is blurred, as is the case in many antitrust cases, vicarious liability incentivizes the firm to reduce the blurriness as much as possible and to adopt a centralized strategy toward the residual antitrust risk both of which the central management can do at lower cost than spontaneous coordination among employees would require. Even if small businesses might often lack legal knowledge and need to invest significantly in obtaining

³³ Shavell (2007, pp. 143–147).

³⁴ Kraakman (2009, p. 136, 2009, p. 136, 2009, p. 141); Wagner (2016, p. 142).

³⁵ Shavell (2007, pp. 143–147).

³⁶ Wagner (2016, p. 142).

³⁷ Arlen and Kraakman (1997, p. 701); Kraakman (2009, p. 142, 2009, pp. 143–144).

³⁸ Shavell (1986).

³⁹ Kraakman (2009, p. 135); Shavell (2003, 4.2).

⁴⁰ Arlen (1994, p. 835); Arlen and Kraakman (1997, p. 700, 1997, p. 692).

⁴¹ Shavell (2003, 4.3).

advice, vicarious liability provides them with the incentive to search for that information, which they can certainly do at a lower cost than its individual employees.⁴²

Finally, the firm will typically be able to monitor compliance at a lower cost than enforcement agencies or courts.⁴³ Therefore, it saves costs to delegate monitoring compliance to the firm by incentivizing it via vicarious liability.⁴⁴ If the state can employ the firm to identify the violator, this will increase the probability of detection and complement state-imposed punishments.⁴⁵ The firm can sanction the offender by imposing sanctions or by exposing the offender to state sanction at lower costs. The state, on the other hand, can always turn to the firm and does not have to bother with finding the individual.⁴⁶ Internalizing the harm at the level of the company can ensure that the corporation will play out its informational advantage in enforcement. The firm may also react to state sanctions more rationally than an individual⁴⁷ and may be able to consider its employees' non-rational reactions more effectively than the state, who is not familiar with the employees' idiosyncrasies. The corporation will be risk neutral so that sanctioning it instead of the employee may save on costs of risk.⁴⁸ The firm's sanctions against the employee may also cause less costs of risk, because firm officials may be better positioned to tailor the system to the degrees of risk aversion found in the firm's employees or produced by the firm's culture.

In short, one expects from vicarious liability of the firm that it induces the firm to invest in compliance by creating an environment that provides the employee with incentives that are not undermined by judgement proofness (*prevention*), to educate the employee to know legal risks, to avoid them (*training*). The firm will also monitor (*policing*) and punish (*sanctioning*) unlawful behavior of employees who violate the law despite the law-abiding firm culture. These four aspects, prevention, training, policing, and sanctioning, characterize the elements of effective compliance programs.⁴⁹ Sanctions against the firm will induce the firm to invest in all these aspects of compliance.

2. Why firms may not invest efficiently in compliance although sanctions are deterrent

Do sanctions induce *optimal* investments, however? In principle, a regulator can always implement efficient deterrence by adapting fines. Efficient deterrence can be guaranteed if the expected costs of the act to be deterred is internalized by the agent. To guarantee internalization, the fine should be equal to the harm caused, multiplied with the inverse

⁴² Koenig (2017, p. 307).

⁴³ Arlen and Kraakman (1997, p. 703, 1997, p. 693, 1997, p. 706); Kraakman (2009, p. 140, 2009, p. 135, 2009, p. 136); Thepot (2018, pp. 164–165, 2018, p. 60); Wagner (2016, p. 133); Wils (2013, p. 58).

⁴⁴ Shavell (2003, part one 4.3).

⁴⁵ Arlen (1994, pp. 835–836, 1994, p. 835); Arlen and Kraakman (1997, p. 693).

⁴⁶ Kraakman (2009, p. 136).

⁴⁷ Kraakman (2009, p. 137).

⁴⁸ Kraakman (2009, pp. 136–137).

⁴⁹ Pampel (2007, p. 1637), who ignores training; although training is arguably the most important investment in compliance, Stefano and Stephan (2023, p. 412).

probability of detection.⁵⁰ When the firm maximizes profits and the harm of its antitrust infringements is internalized with the firm, it should invest in compliance optimally to reduce that harm. If one assumes that the authority has a rough idea of the probability of detection and of the harm such cartels cause, it could set a deterrent sanction.

As reported in the introduction, many enforcement agencies have committed not to consider whether the corporation has run a corporate compliance program at the time of the infringement, however. Therefore, firms with and without corporate compliance programs would *ceteris paribus* receive the same fine. Such sanctioning will cause a problem. The policing aspect of corporate compliance programs may affect the probability of detection. Taking measures to uncover the illegal acts for the purpose of deterring agents from infringing the law does not only reveal the infringement to the firm. As a sort of side-effect, these investigative measures will increase the likelihood that the infringement will be detected by the law enforcement agency as well.⁵¹ Compliance programs can increase the probability of detection in many ways. During the internal investigation, the company produces documents that can fall into the hands of the authorities and help with the investigation – be it because the documents are potential targets of dawn raids, be it that these documents are reported to enforcement agencies by a disgruntled employee turned anonymous whistleblower, or they end up with the enforcer by chance.⁵² The fact that more people know about the infringement due to compliance efforts may have a similar effect. If the authorities know that the company runs a corporate compliance program and think it is effective, the authorities may also know that the company will learn about offenses by their employees. The authorities may then ask the company for exonerating evidence and be justified to assume a violation if such evidence is not provided.⁵³

If agencies do not take the increase of the detection probability by policing into account, when assessing the sanction, they create a private cost to the firm that diverges the behavior of firms away from the investment in compliance considered optimal from a social point of view. The fact that fines will not be adapted to the increased probability of detection turns corporate compliance programs into a double-edged sword. Any additional investment in policing would decrease the probability of an infringement (due to deterring the employees).

⁵⁰ Becker (1968); Landes (1983) on antitrust in particular. For a brief discussion whether in fact full deterrence of any activity which is illegal under competition law is the goal of antitrust, see Koenig (2017, 194–196). In that case the fine should always be larger than the defendant's expected benefit from illegal behavior. The analysis would be analogous to the one presented here, only that instead of the expected harm, the expected illegal gains would be the measure of any effective sanction, Combe and Monnier (2021, p. 112).

⁵¹ Arlen (1994, pp. 836–846); Garrett and Mitchell (2020, p. 72); Stefano and Stephan (2023, p. 402); Thepot (2016); Wagner (2016, p. 143). This would not be a problem in the first best world. In the first best world where the state can adapt sanctions to the individual probability of detection, and investment in policing would increase the detection probability and decrease the level of the fine, the expected fine would be left untouched. At the same time policing reduces the frequency of cartels. Therefore, in the first best world the effect of additional policing is unequivocally positive.

⁵² Arlen (1994, p. 859, 1994, p. 848); Arlen and Kraakman (1997, p. 708); Garrett and Mitchell (2020, pp. 50–51).

⁵³ Grossman (1981); for an application to the German law of evidence see Morell (2022).

Through this channel, the investment *decreases* the expected fine. The investment, however, would also increase the probability of detection for any remaining infringement because more policing leads to more evidence, documentation and people learning about the infringement. In case of detection, however, the firm would still be sanctioned equally to one with an average detection probability. Through that channel, more policing *increases* the expected fine. Jennifer Arlen⁵⁴ recognized this problem back in the nineties regarding criminal sanctions against undertakings. Using a game theoretic approach, Chu & Qian elaborated the problem further with respect to civil liability and the difficulties to prove the agent's negligence.⁵⁵ I will call the private costs of policing stemming from the increase in the detection probability and diverging from the social cost "self-revelation cost". They express the risk that the cartel will self-reveal her crime as a side effect to her own policing. Of the four aspects of corporate compliance (prevention, training, policing, sanctioning) only policing features these two edges (increase and decrease of the expected fine). Investments in the other three will not be distorted by authorities not adjusting sanctions in response to corporate compliance programs. Changing the firm's culture to one not welcoming cartels and training employees in antitrust law will reduce the probability of unwanted cartels without a downside for the firm. Similarly sanctioning an employee for a cartel infringement will not cause the firm costs beyond the direct costs of issuing the sanction. In the discussion about what role compliance programs should play in sanctioning, only few contributions have taken self-revelation costs into account.⁵⁶

3. A bonus on the sanction to counter self-revelation costs of investments in corporate compliance

What can be done about the problem of underinvestment in policing due to self-revelation costs? Simply increasing the fine to incite more investment is not a viable remedy. Liability is meant to control the level of "care" and the level of "activity".⁵⁷ In the context of cartel compliance care corresponds to observable investments in compliance (training, audits, investigations...) and activity corresponds to legal or non-observable investments⁵⁸ in compliance (use of incentive pay that is legal but may push employees to take more antitrust risks, frequency of sending employees to meetings with competitors which are benign but where pricing might be discussed, number of contacts with competitors by agents at risk of cartelizing,...).

The double-edged character of investments in policing, brings the goals of optimal care and optimal activity into conflict. An increased fine may lead to optimal care but to suboptimal activity. If the fine is not conditioned on the individual detection probability but adjusted to firms not investing in policing, there will be an incentive for firms to make a positive but suboptimal investment in policing. Policing increases the expected fine, diverting the investment away from the optimum. The resulting expected fine will be over-deterring.

⁵⁴ Arlen (1994).

⁵⁵ Chu and Qian (1995).

⁵⁶ A notable exception is Wils (2013, pp. 75–76).

⁵⁷ Shavell (2007, pp. 143–147).

⁵⁸ Shavell (2007, p. 144).

Activity will, therefore, be suboptimal because facing an excessive expected fine, firms will be too cautious when calibrating their activity.

If in response to underinvestment in policing the agency would increase fines across the board to push firms to police optimally, firms would indeed react by investing more in policing – up to the efficient level. However, the agency would exacerbate the problem on the activity front: As the sanction that is overdeterrent is further increased, activity will be further reduced. The resulting investments into policing increase the expected fine even more. As a result, firms will be even more cautious when calibrating their activity.

If the authority does not react to the compliance-induced increase of the detection probability, it can either set sanctions high to induce efficient policing and, as a side effect, induce an excessive reduction of activity. Or it can set sanctions low to induce an efficient activity level and go with subdued policing. In the second-best world, one cannot set to the efficient level, both, policing, and the activity level by merely choosing one level of sanctions for all firms.⁵⁹

In principle the solution of the problem induced by self-revelation costs is straight forward. When a corporate compliance program doubles the probability of detection, the inverse probability of detection would be half the original one and the sanction should be halved accordingly, to preserve efficient deterrence. However, determining by how much a certain compliance program increases the detection probability will be excessively difficult. Calibrating the fine to the marginal increase in the detection probability of one particular compliance program is beyond any enforcement agency's capacities and therefore unrealistic.⁶⁰

Secondly, and more realistically, one can try to insulate the company's internal compliance system from state intelligence.⁶¹ Then, internal compliance measures no longer increase the probability of state detection. This can be achieved by subjecting the compliance officer and her team to a "legal privilege" akin to that of criminal defenders, so that correspondence with them is not subject to confiscation and they could be allowed to refuse testimony.⁶² This solution is the most undemanding one of the three and if it was established, any bonus on the

⁵⁹ Arlen (1994, p. 847); Arlen and Kraakman (1997, p. 710, 1997, p. 709).

⁶⁰ See Arlen (1994, pp. 847–849); Arlen and Kraakman (1997, p. 711). More specifically: probabilities are subjective but should be calibrated at observable frequencies. The "straight rule" demands subjective probabilities to be calibrated by the observed frequencies of events in the relevant reference class. It recommends choosing as a reference class the one that is the largest homogeneous class of events comprising the one in question. See Morell (2022, pp. 119–128) for an overview. Frequencies require a reference class. If many are available, one calibrates beliefs at the largest homogeneous reference class, which the relevant case is part of. A reference class is homogeneous if its elements do not differ in factors affecting the relevant outcome. Morell (2022, pp. 119–128). Accordingly, one would estimate the probability of detection from the frequency of detection of cartel infringements in the reference class of all firms running a corporate compliance program like the firm to be sanctioned. How these programs impact the detection probability, however, is idiosyncratic to firms so that the largest homogeneous reference class will only contain the specific firm in question. In a reference class of one, one cannot measure frequencies.

⁶¹ Arlen (1994, p. 865).

⁶² Arlen (1994, p. 865).

sanction would be superfluous. It comes with a catch, however. A legal privilege of that kind effectively installs a vault within the company in which it can safely withdraw any evidence on violations from official view. By such privilege firms could for instance keep documentation on cartels in files protected by legal privilege to shield them from dawn raids. That is bad, given that vicarious liability is adopted partially because the state needs to enlist the firm to investigate the offense which was too expensive to uncover for the state alone. Shielding evidence from investigations may destroy the firm's commitment to investigate as it may drastically decrease the baseline probability of detection and thus the expected sanction.⁶³ Depending on how well hidden the relevant offenses are from the enforcers' view, this may undermine the entire system of sanctions.

Third, one could acknowledge that we do not know how certain elements of policing impact the frequency of detection. Then all compliance programs that look reasonably implemented are epistemically indistinguishable. As we do not know how to cut that large reference class, we would treat it as one ("epistemically homogeneous reference class").⁶⁴ Sanctioned companies would be granted a lump-sum bonus on the sanction if an effective compliance system was in place. This introduces partial liability for negligence into a system of strict liability.⁶⁵ That would not abolish self-revelation costs: Any investment in a corporate compliance program increases a firm's detection probability compared to the other programs in the reference class but would leave the level of the fine unaffected. However, it would markedly improve the situation. By recognizing that investments in policing increase the detection probability when assessing fines, firms would at least not face self-revelation costs when moving from no policing to minimum reasonable policing. However, if a firm improves its policing beyond the average of firms running a corporate compliance program, it will still face self-revelation costs because this idiosyncratic increase in detection probability would not be considered when determining the fine. The bonus would thus partially offset the self-revelation costs which compliance creates for the company in terms of an increased probability of detection.⁶⁶ This is generally a convincing justification for granting a bonus on the fine, in case the defendant was running an effective corporate compliance program.

In summary, it seems that when opponents of a bonus on sanctions in return for running a corporate compliance program argue that deterrent sanctions alone will suffice to incite the adoption of efficient compliance programs, their argument is incomplete. It is true that sanctions motivate to initiate all relevant elements of an effective compliance program (prevention, training, policing, sanctioning); but when it comes to policing, they are insufficient. Policing will increase the detection probability of legal infringements, which the compliance efforts cannot suppress. If the fine is not adapted to this increase, investments in policing are a double-edged sword: They help (make infringements less likely) and hurt (increase the probability that any remaining infringement is uncovered) the company at the same time. This will lead to sub-optimal investments in policing and to sub optimal activity.

⁶³ Arlen (1994, p. 866)

⁶⁴ Morell (2022, p. 127).

⁶⁵ Arlen (1994, p. 864).

⁶⁶ Arlen (1994, p. 846, 1994, p. 864, 1994, p. 863).

But should enforcement agencies therefore react to compliance programs by a reduction in fines when sanctioning competition law offences?

IV. An incentive to invest in policing conveyed by leniency programs⁶⁷

Proponents of a bonus overlook important aspects, too. More is not always better. Bonuses can provide excessive incentives to invest in compliance and they can reduce the fine to non-deterrent levels.⁶⁸ More importantly, though, in antitrust enforcement the analysis from the last section may not apply in case a functioning leniency program is in place. Leniency programs set an incentive to invest in policing. If you can forego the sanction by being the first to report a cartel, you want to be informed about any cartel being formed in your firm.⁶⁹ That is what policing does for you and it may counter the self-revelation costs of corporate compliance programs.⁷⁰ I call this incentive the “snitching benefit”.

Anti-cartel enforcement is different from offenses against the environment, the tax code or securities regulation. Cartels are cooperative offenses, which necessarily involve more than one firm.⁷¹ This implies that the knowledge about the offense necessarily resides in at least two firms. Here, it is possible to play out one firm against the other in a way that one firm’s corporate compliance program increases its fellow cartelmembers’ probability of being sanctioned rather than its own.

Assume for a start that there are well working leniency programs in place, that all cartels are uncovered by leniency applications and remember that policing is an activity that will keep the firm itself informed about any cartel forming in-house (even though it may have side effects). Under these assumptions, leniency programs achieve a separation of the incremental increase of the detection probability by corporate compliance programs and the expected sanction: The detection probability is still increased by investments in leniency, but the expected fine is not. If firm A invests in the detection of its own cartels, this raises the probability of being able to successfully apply for leniency while increasing the expected fine for the *other* cartel member, firm B. For firm B investment by firm A is both increasing the probability that the cartel is detected and the probability that the firm B will *not* be first to report to the cartel authority. From the perspective of firm A, it is the compliance program of firm B, which increases the probability of it being sanctioned. Because accordingly one’s own

⁶⁷ Wils (2013, pp. 76–77) has seen the following argument, but did not develop it fully. With regard to the interaction of leniency programs and a bonus in return for compliance programs, he seems to be most concerned that granting a bonus without the condition of actually reporting the cartel (i.e. for merely running the program) counteracts the incentive to report that leniency programs are meant to create (pp. 69, 70, 76). He does, however, write that leniency programs provide better incentives to *detect* cartels (pp. 76, 77). I conjecture that what he had in mind was the dynamic I analyze here in depth.

⁶⁸ Wils (2013, p. 79).

⁶⁹ Ost (2015, p. 416) reports that the first leniency applications in Germany typically were produced out of findings from a leniency program.

⁷⁰ As any Tullock-contest, Tullock (1975), leniency programs tend to incite over-investment in policing. In contrast to the Arlen costs, this deviation from the optimum can be mitigated by adjusting the level of sanctions across the board.

⁷¹ Wils (2013, p. 77).

policing would never be harmful to oneself, leniency programs would blunt the second edge of the double-edged sword that corporate compliance programs are in other cases.

This analysis is simplified by the assumptions that all cartels are uncovered by leniency programs. However, this assumption is not so unrealistic in Europe. Here, between 2011 and 2017, 95 % of cartel proceedings were started by leniency applications.⁷² Nonetheless, the assumption will be relaxed in the next section because the share of cartels uncovered by leniency applications may be lower for national enforcers⁷³ and it is unclear if enforcement agencies may not at some point return to more independent investigations.

The analysis also hinges on the assumption that leniency programs are effective in incentivizing firms to report all or at least most of the cartels they find in-house. Recently, however, doubts have been raised regarding that assumption.⁷⁴ Leniency applications are declining since roughly 2014 when the cartel damages directive was enacted to facilitate claiming damages for cartel infringements.⁷⁵ Some mused that private damage claims are at least partly to blame.⁷⁶ Potential leniency applicants may fear that their application may trigger claims for damages. Indeed, leniency applicants usually do not challenge the decision, making them the first potential target of follow-on suits.⁷⁷ Because they do not challenge the decision, they do not have the opportunity to remove violations from the cartel authority's decision offering the full set of violations to follow-on suits by potential claimants of damages.⁷⁸ Ultimately, rather than applying for full leniency, the more attractive position could be to supply information second to reduce the fine by 50% and have all the options to challenge both the decision as well as potential damages claims.⁷⁹ If that was true, the leniency dilemma would indeed be broken: If no one aims at being first, there will be no one to report second.

However, leniency programs are still working fine. While the number of leniency applications has indeed declined drastically between 2014 and 2019 the number of leniency applications says little about the effectiveness of leniency programs.⁸⁰ The damages directive was enacted in 2014 but actions for cartel damages already increased after the *Courage* (2001) and *Manfredi* (2006) judgements. Wils writes that between 2005 and 2014 close to all infringement decision by the European Commission already led to follow-on suits in Germany, the Netherlands, or the UK.⁸¹ Between 2014 and 2019, leniency applications declined in all

⁷² Ysewyn and Kahmann (2018, p. 46) That may be different for national competition authorities. Take the example of the German cartel office which is said to uncover 50-60 % of cartels by leniency applications, Ost (2015, p. 416).

⁷³ In Germany it is not above 60 % for instance, Ost (2015, p. 416).

⁷⁴ Ysewyn and Kahmann (2018).

⁷⁵ See Marvão and Spagnolo (2023, p. 166); Monopolkommission (p. 164).

⁷⁶ Anger (2022). Zimmer (2022) has criticized this statement.

⁷⁷ Buccirossi et al. (2020, p. 336); Ysewyn and Kahmann (2018, p. 58).

⁷⁸ Ysewyn and Kahmann (2018, p. 58).

⁷⁹ Ysewyn and Kahmann (2018, p. 58).

⁸⁰ Monopolkommission (p. 172).

⁸¹ Wils (2023, p. 19).

parts of the OECD, making an explanation by the *European* damages directive yet more implausible.⁸²

Leniency applications may simply be in decline due to their own success. If leniency programs work, they will destabilize existing cartels and discourage new ones. The pattern of leniency applications to be expected was an increase of leniency applications in early years after the program's introduction when existing cartels are reported and a subsequent decline because less cartels are formed to be reported. While it remains unclear how long these periods are, the observed pattern matches the prediction: a steep increase until 2014 and a decline thereafter.⁸³ In fact, the literature on the effect of cartel damages finds that damages discourage cartels further.⁸⁴ The effect of damage claims on leniency applications could therefore be benign at least in part: If leniency applications fell because of the increase in cartel damage actions, it may be due to the reduction in the number of cartels rather than to the mere discouragement of leniency application.

In the last two to three years the trend has reversed shedding further doubt on the concern that damage claims harm leniency programs. In fact, in 2021 and in 2022 leniency applications were on the rise again in Europe.⁸⁵ While all this is far from conclusive proof that leniency programs are optimally calibrated, the evidence is in line with the leniency programs working fine.⁸⁶

As a result, under the realistic assumption that cartels are typically uncovered by a leniency application and leniency programs provide an incentive that cartels found in-house are reported to the authorities, investments in policing mainly serve the firm and impose costs on its fellow cartel members counteracting the problem of self-revelation costs. This leads me to the next section. In reality, both, public detection and leniency applications play a role. Regarding public detection, self-revelation costs prevent optimal investments in policing. Leniency programs, in contrast, tend to induce overinvestment in policing. Now, which effect dominates?

⁸² Monopolkommission (p. 165); Wils (2023, pp. 27–28).

⁸³ Bodnar et al. (2023, p. 30); Monopolkommission (pp. 164–165).

⁸⁴ Bodnar et al. (2023, 27, 46); Hinlopen et al. (2023, p. 116); Wils (2023, pp. 33–34).

⁸⁵ Wils (2023, p. 31).

⁸⁶ If indeed the incentive for cartelists to apply for leniency had declined, the handling of leniency programs could be improved with relative ease. A leniency dilemma can only work if the baseline probability of detection (i.e., the probability of detection independent of any leniency applications) is sufficiently high, Wils (2023, p. 30). Snitching on one's fellow cartel is only a dominant strategy if snitching makes one better off no matter what the other cartelists do. If the others snitched, it would certainly be better to snitch first. If they did not, however, snitching only pays off if it would save one from being detected by the authorities. If that detection probability was low, why uncover the cartel? At all times, therefore, competition authorities should make sure that they do not exclusively rely on leniency applications but that they also initiate a substantial share of cases by relying on other sources of information. Indeed, the Commission seems to attribute what appears to be a recent reversal of a declining trend to its reinvigorated ex-officio investigation efforts, Wils (2023, pp. 31–32).

V. The tradeoff between self-revelation costs and the snitching benefit – the latter dominates

If, both, public detection of cartels and detection by leniency application play a role, both effects can in principle play out. The investment in policing carries the cost that enforcers will detect all remaining cartels with a higher probability increasing the expected sanction (self-revelation costs). But investment in policing also has the benefit that forgoing a sanction through an early leniency application becomes more likely, thereby decreasing the expected sanction (snitching benefit). Which of the two effects dominates? To analyze their relative importance, I will first make some arguments on their absolute size in isolation (1). Then, I turn to the simple interaction of self-revelation costs and the snitching benefit assuming fixed shares of cartels uncovered by public investigations and leniency applications, respectively (2). Finally, I will assume that the players interact strategically influencing these shares by their investments in policing (3).

1. Absolute size of snitching benefit and self-revelation costs

In the presence of a working leniency program that establishes an incentive to snitch once a cartel is found, the benefit of in-house policing (snitching effect) will be considerable. Just imagine not investing in policing in a scenario with a high antitrust-risk duopoly (where agents of the firms may get involved in cartels despite the management's effort to prevent that), when the other firm does invest in policing, there is a significant detection probability (it is assessed to be between 10 and 20%);⁸⁷ and close to 100 % of cartel cases are initiated by leniency applications.⁸⁸ Not investing in policing then essentially means accepting the fate of a substantial expected fine in case a cartel forms. Investing in policing on par with the competitor may halve that expected fine.⁸⁹ That is a big effect.

In contrast, even if all cartel cases were initiated by official investigations, “self-revelation costs” appear hypothetical in most contexts. How exactly private investments into compliance increase the probability of detection by the enforcement authority (self-revelation costs) remains obscure (whistle blowing by disgruntled employees and finding documentation in dawn raids are the main examples I can think of). The baseline probability that there is whistleblowing or documentation found in a dawn raid will already be small.⁹⁰ Self-revelation costs describe only the incremental probability increase in this detection probability. The increase will be even smaller than the baseline probability.⁹¹

⁸⁷ Ormosi (2014).

⁸⁸ See footnote 70. The detection probability may be roughly 15%, Ormosi (2014).

⁸⁹ Under the assumption that no policing by firm 1 and positive policing by firm 2 means that the cartel is eventually found and reported by firm 2.

⁹⁰ The detection probability of cartels is assessed to be between 10 and 20 %, Ormosi (2014). 95 % of these detections are by leniency applications, see footnote 70. Based on a back of the envelope calculation, there remain 0.5 %-1 % of cartels that are found by whistle blowing or dawn raids.

⁹¹ The importance of, both, Arlen costs and of the snitching benefit is toned down by it only being relevant if there is a cartel. Policing reduces that probability of a cartel to arise, thereby reducing the relevance of, both, Arlen costs and the snitching benefit. Since this “toning down” affects Arlen costs and the snitching benefit, equally, it provides little help in deciding which of the two effects is more significant and I consequently ignore it here.

Self-revelation costs may have provided the single convincing argument for granting a bonus on the fine in return for the defendant running a corporate compliance program. In absolute terms, however, the snitching benefit seems to be larger than the self-revelation costs. Therefore, self-revelation costs appear to be offset – and probably outweighed – by the snitching benefit.

2. Mixing leniency programs with official investigations

Now imagine cartel proceedings were initiated in equal shares by official investigations and leniency programs. Both effects would be watered down somewhat by the presence of the other channel of uncovering cartels.

Consider the snitching benefit first. Investing in policing halves the full expected sanction in case all proceedings are started by leniency applications. If one half of all cases are started by official investigations, that half is no longer available for leniency applications. Investments in policing only affect the other half of cases. If a firm decides not to leave all these leniency applications to its competitor and therefore invests in policing on par, it will reduce the expected fine by only a quarter. The snitching effect is smaller than it would have been if all cartel proceedings were started by leniency applications.

Now, consider self-revelation costs. Without a leniency program, there is only one channel by which to uncover infringements: public investigations.⁹² This one channel is affected by self-revelation costs. The more documents produced on the infringement and the more people know about it, the more likely it is that public investigations will uncover infringements that compliance efforts failed to prevent. In contrast, when there is a leniency program, there are two channels by which infringements can be uncovered: public investigations and leniency programs. Self-revelation costs only play a role in one of the two. Some cases that would have been uncovered through the first where self-revelation costs are relevant will now be uncovered through the second where self-revelation costs do not play a role. Each infringement can only be uncovered once. So, any case going through the second channel cannot go through the first. This reduces the relevance of self-revelation costs.⁹³

While both watering-down effects are symmetrical in the mechanical dimension, they differ in their dynamics. Consider a fixed share of all cartels unveiled by public investigations (10 %, say). Now, add a leniency program increasing the detection probability (another 10 % of all cartels, say, are found that way, resulting in a total of 20 % of detected cartels). This will leave the self-revelation costs largely unaffected because they do not change how many cartels are found by leniency. If, before the introduction of the leniency program, self-revelation costs

⁹² I count among public investigations all policing that is independent from the will of the defendant. Accordingly, I count whistle blowing by disgruntled employees among public investigations.

⁹³ I assume here that the decisive piece of information is that the authorities learn about the cartel because then they can direct their resources precisely towards gathering information to prove the cartel in court. The prospects of a case arising after the authorities learn of a cartel are assumed to be comparable no matter whether the agency first learned about the cartel by leniency application or official investigations. I also assume that once there is a leniency application, no relevant further official investigations are needed to prove the cartel.

increased the probability of public detection by 20 % (2 percentage points), they will do the same after the introduction of the leniency program.

This is different for the snitching benefit. Imagine a certain share of cartels were uncovered through leniency applications (10 % of all cartels) and none through public investigations. Now, suppose the enforcement authority raises the detection probability by adding a share of cartels uncovered by public investigations (another 10 %, makes 20 % of all cartels in total). That would increase the expected fine for the firm. In a Tullock-contest like the race for leniency that increases the pie and thus incites the parties to invest more into the contest, further extending the cartels found by internal investigations and reported to the authorities.⁹⁴ Therefore combining public investigations and leniency applications waters down the self-revelation costs but its effect on the snitching benefit is ambivalent and the snitching benefit may even increase. In this perspective, too, the snitching benefit outweighs the self-revelation costs.

3. Strategic interaction of firms and its effect on self-revelation costs and the snitching benefit

Which share of cartels is uncovered by leniency applications and which by public investigations is relevant to how important the two effects are. If all cartels are uncovered by leniency, public detection does not play any role and accordingly neither do self-revelation costs. If, in contrast, all cartels are uncovered by public investigations and none by leniency application, self-revelation costs may be truly relevant. The last paragraph already revealed that the corresponding shares of proceedings started by investigations or leniency applications, respectively, are endogenous. That means agents (the defendants, the authorities) are not simply confronted with fixed shares but the agents' own strategic actions (investments in policing) impact the relative shares of cartels found by the authorities' investigations or by leniency applications, respectively. Agents then react to these shares, in turn unleashing an interesting dynamic.

Reaction by the authorities

Historically, the authorities relied on official investigations until leniency programs were adopted. Once there are leniency applications, the authorities can be expected to deliberately reduce the official investigations (where self-revelation costs are relevant) to deal with proceedings brought in by leniency applications. If sanctions are increased in return the expected sanction (and with it the incentive to apply for leniency) would be held constant. The agency could maintain a baseline total detection probability of, say, 10 out of 100 cartels by having 5 of 100 cartels reported through leniency programs and uncovering another 5 of those 100 cartels by public investigations. This natural reaction by the authority will, however, reduce the share of cartels found by public investigations and would thus further diminish the relevance of self-revelation costs. In contrast, the authorities' incentive to expand investments in public investigations appears limited. The authorities need to invest enough to guarantee a detection probability that keeps the leniency dilemma alive. However, as the level of fines can substitute for detection probability and agencies are run by public officials with little skin in

⁹⁴ The assumption is that all cartels found are reported to the authorities because cartels are unwanted by top management due to deterrent fines.

the game, it is unlikely that enforcement agencies will pursue the race for detection with the same determination as firm would.

Reactions by defendants

The relative size and the relative effectiveness of firms' investments in policing will have the strongest impact on whether cartels are mainly brought to the enforcers' attention by leniency applications or by official investigations. The firms will adjust their investments in policing to the shares they expect to arise from their interaction.

If firms invest heavily in policing and authorities do so only to the degree to keep the leniency dilemma alive, most proceedings will be started by leniency applications and self-revelation costs will be irrelevant. On the other hand, if authorities invest a lot and firms do not, the inverse can be true. By the law of demand,⁹⁵ firms and authorities invest more in effective policing if it is cheap (very effective per unit) and invest less the more expensive effective policing becomes. That means if finding cartels in-house is easy and finding them by public investigations is comparatively hard, then most cartels will be uncovered by leniency applications. If the inverse is true and finding cartels in-house is hard while finding them by public investigations is comparatively easy, more cartel proceedings will be initiated by public investigations and less by leniency applications.⁹⁶

This dynamic can be described as a race among the firms as well as between the firms and the authorities for finding cartels: If firms are faster, leniency applications will dominate leaving few cartels for the authorities to publicly investigate. In that scenario self-revelation costs will not play a role. However, if authorities are fast, too, more proceedings will be started through investigations and self-revelation costs may come into play.

Based on this analysis, we can assess the relative relevance of self-revelation costs and the snitching benefit. Common sense, along with the fact that nearly 100 % of proceedings are initiated by leniency applications, suggests that costs of inhouse policing are low compared to relatively high costs of uncovering cartels by public investigations. This gives firms an edge over the authorities in finding cartels.⁹⁷

That way, the following dynamic will unfold. Imagine again, not investing in policing in a high antitrust-risk duopoly⁹⁸ when sanctions are deterrent but "rogue employees" may form cartels at a certain probability. If neither of the two firms invests in policing and thus neither can find its cartels in due delay, any cartel formed may eventually be found by the authorities, leading to a deterrent expected sanction. If one firm invests in policing, it will with a high probability find the cartel first. In finding a cartel, it will have an edge over its competitor due

⁹⁵ Morell (2015, pp. 39–40).

⁹⁶ This is true if leniency programs work. Leniency programs will not work, if the probability of public detection is so low that the expected fines in cases of mutual non-snitching are reduced below any expected illegal benefit, depriving firms of any incentive to snitch. In such cases, the prisoners' dilemma that leniency programs aim to install turns into a coordination game where mutual non-snitching is an equilibrium. The authorities can fix the dilemma by either increasing fines, increasing the probability of public detection, or both.

⁹⁷ See footnote 70.

⁹⁸ Assume likelihood of a cartel to form is 50 %.

to its investment in policing and it will have an edge over the authority because finding cartels in-house is easier than finding it by official investigations. This move will drastically reduce the investing firm's expected sanction (it can expect to achieve leniency). The policing investment by the investing firm will also increase the detection probability. That increase however, will not establish self-revelation cost because it will not harm the investing firm. As finding cartels in-house is easier than finding them by public investigations, the firm will find the cartel before the enforcer does and report it, successfully applying for leniency. Policing will thus harm its under-investing competitor, who will be uncovered and sanctioned with higher probability, increasing its expected sanction.

The non-investing competitor, however, will not remain passive. Investing in policing on par with the investing firm will significantly reduce the (formerly) non-investing competitor's expected fine. Mutual non-investing in policing cannot be in equilibrium. Once both firms recognize the dynamic, they will engage in a contest style⁹⁹ race for detection just as much as they would race for reporting once the cartel is found, thereby mutually ratcheting up their investments in policing. Tullock-contests like these lead to substantial investment – often considerable overinvestment. In the model of symmetric two-party contests, the parties burn half of the pie (the expected fine, in the case of leniency program) in total, in the race for reaching it first.¹⁰⁰ This effect is turbo-charged in the example by the fact that the pie (the expected find) increases as firms mutually increase their competitor's expected fine by investing in policing.

If finding cartels in-house is easier than finding them by official investigations, or if self-revelation costs play only a minor role (because most cartels are found by leniency applications or because the inhouse material does not significantly support public investigations), the snitching effect will dominate. For self-revelation costs to play a role under a leniency program, two things must be true at a time: finding cartels in-house is hard *and* investments in in-house policing have a strong positive impact on the probability that a cartel is found by the authority. This is extremely unlikely. Why would the evidence of the cartel produced by the compliance program have an easier time finding its way to the authorities than to the principal of the compliance program? How badly must that program be run? That suggests that self-revelation costs do not play any relevant role in competition law under leniency programs because the snitching incentive dominates.

Consequently, self-revelation costs are smaller than the snitching benefit in all but the most unusual circumstances. Absent self-revelation costs, there is no reason to grant a bonus on the fine in return for running a corporate compliance program because the firm internalizes all advantages of the program.

VII. Summary

In summary, I have answered the question, whether sanctions should be reduced in case the defendant had run a corporate compliance program. The answer is they should not. It is true, in principle, that investments in compliance (in policing, more specifically) may be

⁹⁹ Tullock (1975).

¹⁰⁰ Tullock (1975).

disincentivized by them increasing the expected fine for the firm. Then, only a bonus on the fine could bring investments in policing closer to the optimum. However, leniency programs exert a strong incentive to invest in policing. When all cartels are uncovered by leniency applications, investment in policing does not increase the expected sanction of the undertaking but that of its fellow cartel members. When both effects are present because there are considerable public investigations too, the incentive from leniency applications will dominate because finding the cartel in-house is much easier than finding it through public investigations. Therefore, under leniency programs corporate compliance programs will not generate any considerable private cost that would prevent firms from investing efficiently in corporate compliance. This result applies to competition law leniency programs which induce a dilemma between two or more firms involved in a cartel. It does not easily extend to other areas of law because, there, leniency programs do not induce a dilemma between several parties. In tax law, the tax evader may be granted (partial) leniency if she self-report. However, she need not act faster than any other tax evader, so there is no race for leniency as the one generating the result of this paper. The borderline case may be bribery. Here, too, several parties are involved in the crime, the briber and the bribee. In this context, leniency programs may work in a comparable way as in competition law. Depending on whether they would be deemed equally effective, the results of this paper may also apply to bribery.

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