



Infringers' willingness to pay compensation versus fines

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Abstract

In many areas such as consumer law or competition law, legislators can opt between two alternative forms of sanctions to remedy wrongdoing: they can impose an infringer to pay either a fine or a compensation. There is a major research gap regarding the infringers' reactions to the different forms of sanctions. This paper reports an experiment that investigated infringers' willingness to pay compensation versus fines. Results show that regardless of victim characteristics (whether the victim is a company or an NGO), infringers are willing to pay higher amounts in compensation than in fines, view compensation as more fair and believe compensation is better able to restore their reputation. Compensation and fines did not differ in the extent to which they stimulated infringers' willingness to take precautionary measures. Participants who inflicted harm to a company rather than an NGO, surprisingly viewed their sanction as more fair, irrespective of the type of sanction in place. Our findings highlight some important strengths of compensation from a infringer's point of view that are to be weighed in the policy debate.

Keywords Compensation · Fine · Willingness to pay · Fairness · Reputation · Deterrence

JEL Classification D23 · C99 · K23 · K41 · K42

1 Introduction

There are quite a number of different types of sanctions in the legislator's toolbox when it comes to designing enforcement responses for legal violations. It is beyond doubt of utmost importance for legislators to know the effectiveness of different

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sanctioning regimes when they have to decide how to regulate a new type of violation or if they wish to evaluate and/or revise existing sanctioning regimes. The classic tool in public enforcement is sanctioning by way of fines, whereas compensation payments are the most traditional remedy in private law enforcement.¹ Increasing knowledge about the effect of these two most typical sanctions constitutes the starting point for the experimental study that this paper reports.

Various rationales have been proposed to help policy-makers decide on the appropriate sanctioning regime, ranging from legal rationales to economic ones. It is striking that within the literature on sanctions a lot of studies have been carried out on *ex ante*, deterrent effects of different sanction regimes (Andreoni, 1991; Becker, 1968; Garoupa, 2001; Levitt, 2004; Stigler, 1970). Yet when it comes to *ex post* behaviour, whereas there is some research into victim reactions to different types of sanctions (Desmet et al., 2010, 2011; Reinders Folmer et al., 2019), a major research gap remains the study of infringers' *ex post* reactions, i.e. their behaviour when having been sanctioned. Which type of sanction are infringers generally more willing to pay? Which sanction do they perceive as more fair? Which sanctions do they expect to have more favorable effects in terms of reputation repair? And moreover, which sanctions increase their willingness to take precautionary measures to prevent future misbehavior? These are questions that the literature does not yet have answers to and this is where our experimental study adds.

This paper will proceed as follows. First, we will identify some key legal areas where policy-makers are facing choices regarding the implementation of different sanction regimes. There, we will also discuss the different rationales used to implement two prototypical types of sanctions (fines and compensation). We then review existing research on the effects of different sanction regimes and formulate our hypotheses. After that, we introduce our experiment and finally, discuss its results and implications.

2 Fines or compensation

2.1 An open policy question

In recent years one can observe an ongoing experimentation with different types of sanctions in quite a number of policy areas. In EU consumer law, for example, the Union legislator has traditionally respected the different regimes prevailing in the European Member States that were either tuned more strongly to private law enforcement (with the primary remedy of compensation payments) or public law enforcement (predominantly making use of fines, Van den Bergh, 2007).² Countries

¹ The fine and the compensation payment are the classical sanctions that were selected for this study. However, other sanctions, like criminal ones (including imprisonment), injunctions etc. exist too of course.

² See for legal instruments respecting the different traditions: directive 2005/29/EC of the European Parliament and the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market and amending Council Directive 84/450/EEC, Directives 97/7/EC, 98/27/EC and

like Germany or Austria, where the private enforcement dimension was prevalent, could keep these systems in place at first. However, with the reform of the Consumer Protection Cooperation (CPC)-Network³ the Union legislator has taken a rather strong stance on the necessity to make public law enforcement available for certain consumer law violations. Art. 9 CPC Regulation sets out the minimum powers that the public authorities in the Member States need to have and clearly stipulates that fines have to be among them.⁴ This policy decision will without a doubt lead to a major change in countries where consumer law enforcement was traditionally only or predominantly done by way of private enforcement and, therefore, compensation as a main sanctioning tool. In European competition law on the other hand, one can observe the opposite development. Enforcement in that area has traditionally been carried out by public authorities (the competent authorities in the Member States and the European Commission itself) that had exhaustive powers to fine (Rodger & MacCulloch, 2015). More recently, the Union legislator also introduced overarching private enforcement powers for all victims of a competition law violation with the Antitrust Damages Directive 2014/104.⁵ Whereas in basically all European Member States the competition law enforcement was traditionally done by public fines, now another sanctioning regime has been added and one can see examples everywhere of fines being replaced with (or supplemented by) compensation. This bears the question as to what boundaries and rationales underly the choice for one sanction regime over the other.

2.2 Legal boundaries

In the legal literature, procedural law is generally regarded as having a serving function to substantive law (e.g., it may provide litigants with compensation). Law enforcement imposes the content of substantive laws upon individuals. The classical rationale for compensation payments is the need to fully compensate victims for the harm suffered. This idea envisions to put victims in the position they would have been in but for the legal violation. Directive 2014/104/EU, for instance, clearly expresses this in its Art. 3 (2) by saying that “Full compensation shall place a person who has suffered harm in the position in which that person would have been

Footnote 2 (continued)

2002/65/EC of the European Parliament and of the Council and Regulation (EC) No 2006/2004 of the European Parliament and of the Council, 11 June 2005, *OJ L* 149/22.

³ Regulation (EU) 2017/2394 of the European Parliament and of the Council of 12 December 2017 on cooperation between national authorities responsible for the enforcement of consumer protection laws and repealing Regulation (EC) No 2006/2004. This policy choice was already pertinent, but not advocated as strongly, with the predecessor.

⁴ See Art. 9 (4)(h) first sentence of the new CPC Regulation—Regulation (EU) 2017/2394 of the European Parliament and of the Council of 12 December 2017 on cooperation between national authorities responsible for the enforcement of consumer protection laws and repealing Regulation (EC) No 2006/2004, *OJ L* 345, 27.12.2017, p. 1–26.

⁵ Directive 2014/104/EU of the European Parliament and of the Council of 26 November 2014 on certain rules governing actions for damages under national law for infringements of the competition law provisions of the Member States and of the European Union.

had the infringement of competition law not been committed.” The actual harm suffered is, therefore, in the European Member States traditionally the upper limit of the compensation amount. Fines, on the other hand, belong to the category of penalties which as the name suggest have a ‘penalizing’ element. In other words, the actual level of harm suffered does not constitute a boundary for the amount payable. European Union law specifies generally that penalties shall be “effective, proportionate and dissuasive”.⁶ Hence, less than with the compensation payment there is need for congruency between the actual harm suffered and the size of the fine paid. It can, consequently, go beyond the level of harm suffered. European Member States currently operate without any form of punitive damages that would allow to stipulate a compensation payment above the level of the harm.⁷ Hence, the limit to any compensation payment is the actual harm suffered by the victim. This is not only true for violations of competition law but also of consumer law,⁸ in essence any violation of private law. It is the typical approach for civil law countries. The approach is very different from many of the common law countries in whose legal orders compensation may exceed the actual harm done (Koziol, 2008; Meurkens & Nordin, 2012; Vanleenhove, 2012). The European resistance when it comes to punitive damages is regularly challenged but proves to be persistent on a general level (one example would be the extensive discussion in the preparatory documents for the Antitrust Damages Directive 2014/104).⁹

Lastly, it is expressed more clearly with a view to justifying fines (‘dissuasive’) than with a view to justifying compensation that the prospect of a sanction can exert an effect on an individual’s behaviour *ex ante*—that is before potentially committing a wrong. This *ex ante* framework also lies at the basis of an economic approach to sanctions.

2.3 Law and economics rationales

2.3.1 Ex ante perspective

From a law and economics point of view sanctions serve to induce people to comply with substantive laws. According to this view it is the threat of enforcement that

⁶ See Art. 9 (4)(h) second sentence of the new CPC Regulation. It goes on “In particular, due regard shall be given, as appropriate, to the nature, gravity and duration of the infringement in question.”

⁷ This is, for instance, reflected in the Directive 104/2014/EU in Art. 3 (3) „Full compensation under this Directive shall not lead to overcompensation, whether by means of punitive, multiple or other types of damages”. The UK, that has now left the Union, was an exception to that rule.

⁸ See eg Art. 14 (2) Directive (EU) 2015/2302 of the European Parliament and of the Council of 25 November 2015 on package travel and linked travel arrangements, amending Regulation (EC) No 2006/2004 and Directive 2011/83/EU of the European Parliament and of the Council and repealing Council Directive 90/314/EEC; see Art. 14 (1) second sentence of the Proposal for a Directive of the European Parliament and of the Council on certain aspects concerning contracts for the supply of digital content on the ‘right to damages’ reading “Damages shall put the consumer as nearly as possible into the position in which the consumer would have been if the digital content had been duly supplied and been in conformity with the contract”.

⁹ See e.g. European Commission (2005), pp. 14, 35.

is mainly guiding people's behaviour or, more particularly, providing incentives to obey the law. The interplay between substantive laws and their actual enforcement shape the incentives and deterrents that induce law-abiding behaviour (Garoupa, 2001; Veljanovski, 1984). A law and economics perspective departs from an *ex ante* perspective where sanctions have a deterrent function. Two elements are typically considered to be paramount in these models of deterrence (Becker, 1968): (1) the size of the sanction (i.e. the size of the compensation payment etc.) and (2) the probability of detection and conviction. According to the model if this combined probability is lower than 100%, the amount of the sanction has to be increased above the level of the harm to compensate for the low probabilities and to, thereby, ensure that the expected sanction at least matches the infringer's potential benefit. These models of deterrence assume rationality: if the benefits of violating the law (e.g. producing cheap faulty products) are outweighed by the costs (as determined by the probability and size of a legal sanction) individuals will not violate the law. Hence, following deterrence theory the value of a sanction resides in its potential to dissuade potential wrongdoers from committing a legal violation *ex ante*. Note that the type of sanction is not seen as relevant in these models of deterrence as it is merely the quantity and probability of the sanction that is assumed to deter potential infringers. In order to achieve a desired level of deterrence, a policy-maker can choose to adjust parameters by increasing the size of the sanction and/or the probability of detection and conviction. The proponents of deterrence theory are very open to punitive damages because by raising a compensation payment beyond the level of the harm they allow to fine-tune the deterrent effect when probabilities of detection and/or conviction are low (Cooter, 1989). Over the years, several scholars have added refinements to deterrence theory. Stigler (1970), for example, introduced the concept of "marginal deterrence" by arguing that more severe crimes should receive more severe penalties. Andreoni (1991) along those lines sustains that sanction size may not be independent of the severity of the infraction. Garoupa (2001) stressed the importance of the interaction with the wealth of the individual infringer. Incentives for deterrence are found to crowd out intrinsic pro-social behaviour (Khadjavi, 2015; Schildberg-Hörisch & Strassmair, 2012). There is, furthermore, a rich empirical literature on deterrence theory (survey by Eiden 2000; lab experiments: Schildberg-Hörisch & Strassmair, 2012; Eisenberg & Engel, 2014; Satterwhaite, 2016; Feess et al., 2018; psychological experiment: Kurz et al., 2014).

2.3.2 Ex post perspective

According to deterrence theory harm can be prevented in the first place because by ensuring *ex ante* deterrence potential violators will decide to comply with the law rather than to breach it. Taking this understanding to the extreme the *ex post* stage is theoretically not reached. Notwithstanding the importance of deterrence, focusing on the *ex ante* perspective alone is insufficient for a number of reasons: (1) Deterrence may not always work as predicted by deterrence theory (e.g. simply because the parameters were put wrongly or it was too costly to ensure, for instance, the required probabilities of detection and conviction); (2) There are limits to the rationality assumption in deterrence theory. Whereas deterrence theory assumes that

occurrences of transgressions are the result of a continuous weighing of the costs and benefits of committing a transgression or taking the precautionary measures to avoid one, in many cases legal violations are single occurrences of involuntary, unavoidable acts, omissions or accidents. In those cases, it is crucial for policy-makers to not just consider *ex ante* deterrence alone but also look at *ex post* effects of a sanction system. For victims as well as the public, the extent to which they see losses compensated and/or infringers punished is an important driver of their trust in the system. Likewise, whether or not an infringer is willing to pay a compensation or fine may be important to know for policy-makers as it is not just an indicator of the infringers' willingness to comply with a given sanction and of their willingness to engage in a (costly) legal battle to evade their given sanction, but also because it may ultimately shape their trust in authorities and therefore stimulate or cripple compliance in the long run.

Research into *ex post* effects of sanctions exists but has mainly centered around victims' reactions to receiving compensation or to seeing an infringer punished (Darley & Pittman, 2003; Desmet et al, 2010, 2011; Reinders Folmer et al., 2019; but see Desmet & Leunissen, 2014). These findings indicate that whereas victims view compensation as an adequate response in case of unintentional harm, they desire more punitive responses and see those as more fair in case of intentional harm. There are good reasons why infringers too may view fines and compensation differently in terms of fairness and why their willingness to pay for them may be different, too. How infringers perceive and react to different types of sanction, however, remains empirically unclear to date.

2.4 Infringers' reactions to sanctions

Prior research shows that the perceived fairness of a sanction system is more important to sustain compliance than classic deterrence aspects, such as sanction size (Verboon & van Dijke, 2011, 2012). Fairness and legitimacy seem to help to generally increase the acceptance and, hence, the impact of a sanction. From an infringer's point of view, the fairness of sanction may therefore be an important driver of not just the willingness to pay a given sanction, but also of its deterrent effect in the long run (i.e. the extent to which it stimulates infringers to avoid future transgressions).

A pivotal difference between fines and compensation lies in the beneficiary of the sanction: compensation is paid to the victim itself, whereas a fine is typically paid to the state budget. Whereas this difference may not matter for deterrence theorists as long as the amount payable is exactly the same, from a fairness point of view, compensation regimes may be viewed as more fair by infringers as they restore more fairness for the victim compared to punishment regimes where fines are paid to the state budget. There is clear evidence that victims often show a preference for compensation (Feldman-Hall et al., 2014) yet whether infringers themselves prefer to pay compensation over, for instance, fines is still unclear. Indirect answers to this question can be found in a study by Lotz et al., (2011). These authors found that when third parties witnessed wrongdoing and were given the option to pay to compensate a victim or to punish an infringer, they had a higher willingness to pay for

compensation than for punishment. This finding that people have a higher willingness to invest in compensating a victim than in punishing an infringer, may signal that people in general view compensation as more fair than a punitive option, such as fines, potentially making infringers too more willing to pay compensation than fines.

Apart from differences in terms of perceived fairness, another reason why infringers may be more inclined to pay compensation than fines lies in reputation concerns. Raihani and Bshary (2015) observed how people treated third-party punishers and third-party helpers. What these authors found was that third parties that previously compensated a victim were treated much more favorably than third parties who previously punished an infringer. Likewise, Adams and Mullen (2013) observed that people were much more likely to vote for political candidates that had chosen to compensate victims than for candidates that had chosen to punish offenders. Taken together, these findings show that people who decide to compensate are perceived and treated more favorably than people who decide to punish. This may indicate that infringers too may anticipate their reputation to be more restored through compensation than through fines.

On the basis of the previous considerations, we formulate the following hypotheses, predicting that infringers will perceive compensation as more fair than fines and perceive compensation as better able to restore their reputation.

(H1) Infringers who have to pay compensation view their sanction as more fair than infringers who have to pay a fine.

(H2) Infringers who have to pay compensation believe their reputation will be more restored than infringers who have to pay a fine.

Moreover, because infringers perceive compensation as more fair and more able to restore their reputation, we also predict that infringers will be more willing to pay compensation than fines. We therefore formulate the following hypothesis:

(H3) Infringers who have to pay compensation are willing to pay more than infringers who have to pay a fine.

Finally, in addition to concerns regarding willingness to pay, fairness and reputation concerns another interesting question is the extent to which infringers are deterred from committing wrongdoing again. Whereas from a classic deterrence perspective fines and compensation may equally deter infringers, based on our argumentation above one could expect that because infringers are less willing to pay fines, view them as less fair and as less able to restore their reputation, they will be more inclined to avoid paying them again. Therefore, we formulate the following hypothesis:

(H4) Infringers who have to pay a fine will take more precautionary measures to prevent future transgressions.

3 The present experiment

Despite the relevance of studying infringer reactions to different types of sanctions, we are aware of only three studies that looked at infringers' willingness to pay a sanction. However, those studies looked at infringers' willingness to pay compensation in economic games where infringers had previous inflicted financial harm and/or they did not consider the willingness to pay compensation versus fines (Berscheid & Walster, 1967; Berscheid et al., 1969; Desmet & Leunissen, 2014).

In the present study we aimed to assess the willingness to pay compensation and fine in a richer, realistic context, where harm was the result of a single involuntary act. Therefore, we recruited managers as participants and used an experimental vignette in which they acted as managers of a fictitious organization who had to make decisions in the wake of an incident.

Vignettes have some specific advantages over lab experiments that make them suitable for the specific context we were interested in. They provide a richer context which allows us to incorporate the legal details needed for our study in a credible way, while they still preserve the internal validity advantages that lab experiments have. They are furthermore, more than lab experiments particularly useful for assessing perceptions and impressions about events, which was important because we were interested in a wider set of impressions, such as perceptions of fairness and reputation concerns. Across the social sciences, ample studies have demonstrated the validity of vignette experiments, replicating findings observed in the laboratory and the field (see e.g. Hainmueller et al., 2015; Petzold & Wolbring, 2018; Aguinis & Bradley, 2014; Eckerd et al., 2021). They are also not uncommon in the empirical legal literature (see e.g. Cardi et al., 2012; Martin, 2016; Klepper & Nagin, 1989; Thurman, 1989) and recent research on the willingness to pay compensation found consistent results across vignettes and laboratory experiments (Desmet & Leunissen, 2014).

We created four different versions of our vignette in which we first of all varied the sanction regime that was applicable to the incident (fine versus compensation). In addition, to increase the robustness of our findings we tested our hypotheses in two settings where the victim was either a company or an NGO.

3.1 Method

3.1.1 Participants and design

Participants were recruited through the online research platform Prolific Academic (<http://prolific.ac>, see Palan & Schitter, 2018; Peer et al., 2017). Online research panels provide access to a demographically diverse subject pool and the data quality often compares favorably to data obtained through university laboratories (Palan & Schitter, 2018; Porter et al., 2019; Buhrmester et al., 2011; Peer et al., 2017; Irvine Irvine et al., 2018). Prolific Academic also has the advantage of allowing researchers to easily screen for demographic and other participant characteristics. Because

Table 1 Experimental design and number of participants per treatment

		Sanction type		
		Compensation	Fine	Total
Victim type	Company	49	51	100
	NGO	50	52	102
	Total	99	103	202

our experiment used an organizational context in which participants had to act as managers in an organization, we recruited only participants that were employed and had a managerial role within their organization.

202 American participants were recruited (80 men, 122 women, mean age 37.98 years, $SD=9.89$).¹⁰ Participants worked on average 8.05 years for their organization ($SD=6.85$) and 5.85 years in their current position ($SD=5.85$). 67% of the participants worked for a company, 33% for an NGO. All participants were randomly assigned to one of the four conditions in a 2 (Sanction Type: Compensation vs. Fine) \times 2 (Victim Type: Company vs. NGO) between-subjects design (See Table 1).¹¹

3.1.2 Procedure

Participants were provided with a vignette in which they were asked to imagine that they were working as a CEO for a Canadian company that specializes in cleaning wastewater. They were told that their company was located near a river and that at a certain point, due to a maintenance failure of the pipe construction that channels the treated water into the river, wastewater containing high concentrations of toxic chemicals had leaked and polluted the river.

Participants then learned that although further down the river the concentration of chemicals decreased to negligible, harmless amounts, the leakage did poison and kill the entire stock of a salmon facility close by the company's plant. They were told that the damage amounted up to 100,000 Canadian dollars (CAD).

Depending on the victim type treatment, participants were told that this salmon facility was either a commercial salmon farm or a research facility for sustainable salmon farming, operated by an NGO. They were, furthermore, notified of the fact that the Canadian Water Agency is the main enforcer of Canadian water protection law and that it has the power to either order a violator to pay compensation to the

¹⁰ As it stands the European approach is in essence restricted by the unavailability of punitive damages. However, in order to be able to measure a different willingness to pay on the side of the infringer, it is necessary, to abandon the criterion that compensation payments may only compensate for the actual harm suffered. To ensure comparability, the perspective needs to be broadened in the sense that both, fines and compensation, could go beyond the level of the harm. Only if there is the same flexibility to pay for both, fine and compensation, can we actually find out how much infringers would be willing to pay *ceteris paribus* for each. Therefore, the subjects chosen were those familiar with punitive damages: American participants.

¹¹ We also administered 4 attention checks. Hypothesis testing with only participants who provided enough correct answers yielded results that were essentially the same as those presented in the text.

victim or to impose a so-called “clean river fine”—payable to the state budget. It was stressed to participants that the Canadian Water Agency could only opt for one type of sanction and that any action undertaken by the agency would bar all other legal proceedings against the polluter, for instance court procedures by the victims to obtain compensation.

Participants were then provided with a fictitious news article in which the decision of the Canadian Water Agency was communicated. This article varied depending on the sanction type treatment participants were assigned to (see Appendix A and B for two exemplary versions of the materials used). Depending on the sanction type treatment, in this article it was explained that the Canadian Water Agency had either decided to impose the participant’s company to pay compensation to the victim or to pay the “clean river fine” to the state budget.

3.1.3 Measures

Willingness to Pay To measure participants’ willingness to pay compensation or fines, participants were asked: “You receive a letter from the Canadian Water Agency in which they state that the fine (compensation payment) that they will impose can vary between 100,000 and 200,000 CAD, depending on the course of the procedure. They offer you a fast track procedure if you make them an acceptable offer for the fine (compensation payment). Please indicate what would be your final and highest offer to the Canadian Water Agency?”.

Fairness of Sanction Given To measure participants’ perceived fairness of the sanction, we asked them to indicate on a 5-point Likert scale to what extent they found it fair that they had to pay a fine/compensation (1 = Definitely not fair; 5 = Definitely fair).

Reputation Restoration We measured the extent to which participants believed their reputation would be restored by asking them on 5-point Likert scale “Do you think your reputation will be restored with the payment of your fine/compensation?” (1 = definitely not; 5 = definitely yes).

Precautionary measures for the future To assess participants’ deterrence of future wrongdoing, we asked them on a 5-point Likert scale “To what extent would you take additional precautions to avoid such type of leakages from occurring again in the future, even if these precautions are extremely costly?” (1 = definitely not; 5 = definitely yes).

Fairness of Alternative Sanction To check whether infringers perceived compensation as more fair regardless of the sanction they received themselves, we also measured participants’ perceived fairness of the possible alternative sanction, which was, depending on the treatment, a fine payable to the state or a compensation to the company/NGO (1 = Definitely not fair; 5 = Definitely fair).

3.2 Results

3.2.1 Willingness to pay

A 2×2 ANOVA with our victim type treatment, sanction type treatment and their interaction as predictors and participants’ willingness to pay as dependent

variable revealed a significant main effect of sanction type, $F(1,198)=5.50$, $p < 0.05$, $\eta^2=0.03$, confirming Hypothesis 3 that participants who had to pay compensation were willing to pay more ($M=131,949.49$, $SD=36,559.81$) than participants who had to pay a fine ($M=119,952.77$, $SD=35,788.37$). Neither the effect of victim type, nor the interaction effect was significant.

3.2.2 Fairness of sanction given

A 2×2 ANOVA with victim type, sanction type and their interaction predicting participants' perceived fairness of the sanction revealed a significant main effect of sanction type, $F(1,198)=25.85$, $p < 0.001$, $\eta^2=0.12$, confirming Hypothesis 1 that participants who had to pay compensation viewed their sanction as more fair ($M=4.41$, $SD=0.93$) than participants who had to pay a fine ($M=3.65$, $SD=1.20$). The interaction was not significant but a main effect of victim type was also observed, $F(1,198)=5.31$, $p < 0.05$, $\eta^2=0.03$, indicating that regardless of whether their sanction was to pay a compensation or a fine, infringers who inflicted harm to a company viewed their sanction as more fair ($M=4.20$, $SD=1.01$) than those who inflicted harm to an NGO ($M=3.85$, $SD=1.24$).

3.2.3 Reputation restoration

A 2×2 ANOVA with victim type, sanction type and their interaction predicting the extent to which participants believed that their reputation would be restored, revealed a significant main effect of sanction type, $F(1,198)=11.75$, $p=0.001$, $\eta^2=0.06$, confirming Hypothesis 2 that participants who had to pay compensation were more inclined to believe their reputation would be restored ($M=3.27$, $SD=1.00$) than participants who had to pay a fine ($M=2.76$, $SD=1.12$). No interaction effect, nor a main effect of victim type was observed.

3.2.4 Deterrence of future wrongdoing

A 2×2 ANOVA with victim type, sanction type and their interaction predicting participants' willingness to take precautionary measures revealed only a marginally significant main effect of victim type, $F(1,198)=3.55$, $p=0.06$, $\eta^2=0.02$, indicating that regardless of whether their sanction was to pay a compensation or a fine, participants who inflicted harm to a company were slightly more willing to take precautionary measures ($M=4.64$, $SD=0.66$) than participants who inflicted harm on an NGO ($M=4.44$, $SD=0.82$). No interaction effect, nor a main effect of sanction type was observed, indicating that both compensation payments and fines result in an equal willingness to take precautionary measures to avoid future wrongdoing. Hypothesis 4 is therefore not confirmed.

3.2.5 Fairness of alternative sanction

A 2×2 ANOVA with victim type, sanction type and their interaction predicting participants' perceived fairness of the alternative sanction revealed a significant main

Table 2 Means (SD) of perceived fairness of compensation and fine conditional on the sanction received

Sanction received	Compensation fairness	Fine fairness
Compensation	4.41 (0.93)	3.01 (1.27)
Fine	4.14 (1.01)	3.65 (1.20)

effect of sanction type, $F(1,198)=48.19$, $p<0.001$, $\eta^2=0.20$, indicating that participants who had to pay a fine viewed the alternative sanction as much more fair ($M=4.14$, $SD=1.01$) than participants who had to pay a compensation ($M=3.01$, $SD=1.27$). To see whether participants viewed compensation as fairer regardless of the sanction they received themselves we constructed two new variables: perceived fairness of compensation and perceived fairness of a fine. We subsequently conducted a 2 (sanction type received: compensation vs. Fine) \times 2 (fairness of compensation vs. Fairness of fine) Repeated Measures ANOVA with the latter factor being the within-subject factor. A significant main effect of the within-subject variable indicated that people perceived compensation as more fair than a fine, $F(1,198)=64.76$, $p<0.001$, $\eta^2=0.25$. Closer examination of this effect (*post-hoc* comparisons with Bonferroni correction) showed that regardless of whether they had to pay a fine or compensation, infringers perceived compensation as significantly more fair than a fine. We also observed a significant two-way interaction effect between fairness and sanction type, revealing that the difference in fairness depended on the sanction they received, $F(1,198)=15.45$, $p<0.001$, $\eta^2=0.07$: whereas regardless of the sanction received all participants viewed compensation as more fair, this difference was less pronounced, yet still significant for participants that received a fine. Table 2 displays the means and standard deviations for the perceived fairness of different sanctions.

4 Discussion

In line with our hypotheses participants who had to pay compensation were willing to pay more than participants who had to pay a fine (Hypothesis 3), viewed compensation as more fair than fines (Hypothesis 1) and believed their reputation would be more restored when paying compensation compared to fines (Hypothesis 2). We also find evidence that the higher perceived fairness of compensation exists regardless of the sanction regime they were assigned to. In contrast to our prediction in hypothesis (4), however, the type of the sanction did not matter in terms of the willingness to take precautionary measures in the future. Finally, victim characteristics did not influence the willingness to pay fines or compensation and the perception of reputational effects, yet participants who inflicted harm to a company viewed their sanction as more fair, and were slightly more willing to take precautionary measures, irrespective of the type of sanction. This finding may indicate that infringers may be somewhat more deterred from harming companies than NGO's and more accepting of sanctions as a result thereof. Below, we discuss the most important implications and limitations.

First of all, our findings contribute to the literature on the effects of sanctions. So far, research on the effects of sanctions has either taken a victim perspective, focusing on how victims perceive and react to infringers being sanctioned, or taken an *ex ante* infringer perspective, focusing on the deterrent effects of various sanctions. How infringers react to being sanctioned is, however, an important factor to consider for policy-makers. Whether or not an infringer considers his/her sanction fair and is willing to pay a compensation or fine may be important to know for policy-makers as it is not just an indicator of infringers' willingness to comply with a given sanction and of their willingness to engage in a (costly) legal battle to avoid their given sanction, but furthermore because it also shapes their trust in authorities and therefore ultimately may fortify or weaken their compliance in the long run. The findings, furthermore, feed into the claims of restorative justice proponents in as far as they put emphasis on the value of direct contact between infringer and victim (van Ness & Heetderks Strong, 2014).

The at first sight counter-intuitive result that infringers may take slightly more precautionary measures vis-a-vis the company rather than the NGO may be explained by the parameter of 'victim identifiability' (Small & Loewenstein, 2003). People are shown to be more willing to help identifiable victims, and in particular single identified victims. The ultimate victims in the context of the NGO—think of the donors—are potentially more dispersed and unknowable. Another possible explanation can be drawn from the experimental literature that studies how the willingness to help is bigger if the victim is perceived as belonging to the own in-group (Kogut & Ritov, 2007). There is more similarity between two companies rather than between a company and an NGO. Belonging to the same social group causes a feeling of greater closeness and responsibility, and increases emotional responses to the others' needs (tested among many others by Levine et al., 2002).

By showing that infringers attach more value to compensation in terms of fairness, reputation restoration and the amount they are willing to pay, we find that for infringers too, the fairness and reputation restoring potential of compensation is appreciated. Although our findings seem to suggest a clear advantage of compensation over fines in the policy debate, however, there are some important limitations to consider.

A first important limitation of our findings lies in the fact that we limited our study to an involuntary accident rather than an intentional act of wrongdoing. Unintentional transgressions, albeit quite common, may, more than intentional wrongdoing, instigate concern about the victim(s), resulting in more favourable reactions towards sanctions that have the victim(s) as their beneficiary. One could therefore wonder whether our findings would generalize to intentional wrongdoing. Previous research has indicated that infringers experience less guilt and are less willing to apologize for intentional wrongdoing compared to unintentional wrongdoing (Leunissen et al., 2013). The fact that an infringer willingly chooses to harm a victim in the first place would therefore also suggest that his/her willingness to restore the resulting unfairness will not be particularly higher than his/her willingness to pay a fine instead. Since such an infringer cares little about the victim, differences in reactions between fines and compensation are likely small. Future research may shed light on the question.

A second important limitation is to be considered when interpreting our findings on infringers' willingness to take precautionary measures to avoid future incidents. Because infringers are less willing to pay fines, view them as less fair and as less able to restore their reputation, we argued that they would be more inclined to avoid paying them again. To that extent we hypothesized that infringers would be more deterred from (i.e. take precautionary measures to avoid) committing wrongdoing again when they have to pay a fine. Our findings did not confirm that hypothesis. One could therefore think that in terms of deterrence of future wrongdoing, both sanction regimes are similar, hereby corroborating deterrence theory, which would predict similar deterrence levels as long as the sanction's size is the same. One has to be careful in interpreting our findings in that fashion though. We namely observed that scores on that item were rather high ($M=4.55$, on a 5-point Likert scale) suggesting a ceiling effect may be at play: the willingness to take precautionary measures was so high in both regimes that it is difficult for any differences to materialize. We may, furthermore, have primed participants by using the formulation "even if these precautions are extremely costly". To make stronger conclusions about different effects of fines and compensation in terms of deterring future wrongdoing, we therefore see two potential avenues for future research. First of all, future research could incorporate different measures that, for example, ask participants to make budget allocations and assign budget portions to precautionary measures. A second direction would be to conduct an incentivized multiple-round laboratory experiment to see whether fines versus compensation regimes lead to different effects in terms of observing repeated offenses.

Finally, because we used a vignette experiment and provided participants with a rich yet specific, fixed decision context, we caution against generalizing our findings across all organizational contexts. First of all, although we specified the sanction size in our study, we did not specify or vary its relative size to the company's budget. Future research could look into the effect of relative sanction size to see whether our observed effects of different sanction types hold for sanctions that vary in costliness. Second, we chose a managerial context and selected managers as the sole decision makers, given that they are ultimately the primary decision makers within companies. It could be interesting for future research to study how intra-organizational dynamics or organizational structures impact the decision process. For example, larger firms may have legal departments involved in the settlement process that may, next to the managerial influence, have a separate, different or similar impact on the settlement process. Future research could look at how the addition of more complicated decision structures affect settlement processes. Finally, another interesting avenue for future research would be to include fines that do not go to the general state budget, but are earmarked to benefit good causes such as, for example, an environmental fund. Although not having the victim as beneficiary, such a fine may be regarded as more fair by infringers.

5 Conclusion

The results of the reported experiment reveal a preference for compensation payments: we found that whereas infringers are not only willing to pay more compensation, such compensation payments lead to equally good results in terms of precaution

compared to fines and fare better as regards fairness and reputation. Some caution is necessary with a view to the deterrent effect of the two types of sanctions though. More research is needed before firm conclusions can be drawn. Overall, these new insights can inform the policy-maker and need to be weighted against other considerations when recommending to stipulate either compensation payments or fines. One consideration favouring compensation is, for example, the fact that victims prefer it. If victims are needed in the enforcement procedure as enforcers, the prospect of receiving compensation seems to be an important motivator. Another consideration concerns the fact that fines are typically easy to administer. In the case scenario discussed it was a public authority that was in charge of both—imposing the fine or the compensation payment. Such hybrid enforcement mechanisms—a public authority that imposes a typical private law sanction—are increasingly being experimented with in Europe.¹² They have the potential to assimilate the administrative costs of fines and compensation to some extent. A difference in administrative costs, however, may emerge as soon as there are several victims and the compensation payment unlike the fine that only has one recipient needs to be distributed.

The experiment was carried out in an environment in which individuals are familiar with punitive damages. The strong results found in favour of compensation payments even above the level of harm, may lead the European policy-makers to reconsider its dogmatic resistance against a punitive element when compensating.

Appendix A: Fictitious news article used in the company/compensation treatment



¹² See e.g. redress schemes at UK Financial Conduct Authority.

Appendix B: Fictitious news article used in the NGO/fine treatment



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Declarations

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