Public and Private Antitrust Enforcement: Does the EU Directive Preserve Leniency Incentives?

Miriam Buiten*

Working Paper
August 10, 2015

Abstract

The new EU Directive on Antitrust Damages Actions encourages private enforcement of competition law. Such private damages actions may undermine the effectiveness of public enforcement, which relies heavily on self-reporting by cartel members under the leniency program. The leniency program does not exempt applicants from damages claims. The Directive includes special liability rules to safeguard incentives to apply for leniency. This paper compares these rules on joint and several liability, contribution and punitive damages to the US system. Using a game theoretical approach, the paper finds that the US framework better safeguards leniency incentives than the European rules, by limiting civil liability for the leniency applicant as compared to the other cartel members.

Keywords: Antitrust, Cartels, Leniency, Damages

JEL Classification Numbers: K21, K40, K41

*Erasmus University, Rotterdam Institute of Law and Economics, e-mail: buiten@law.eur.nl
1 Introduction

In November 2014, the German rail operator Deutsche Bahn announced that it was suing Lufthansa for EUR 1.76 billion over the air cargo cartel in Germany.\(^1\) The damages action followed a lawsuit filed by Deutsche Bahn in New York, seeking a total of $370 million in damages from Lufthansa and other airlines for harm caused by the air cargo cartel. This world-wide price-fixing cartel, involving more than ten airlines, was revealed by Lufthansa in 2006 in exchange for immunity from fines under the leniency program. The public fines totaled almost EUR 800 million in the EU alone.\(^2\) A large amount, although, as the Deutsche Bahn case illustrates, civil damages claims are quickly rising to a multiple of it. This means that firms reporting a cartel under the leniency program, such as Lufthansa, by no means get away without having to pay a bill.

Leniency programs, however, are central to achieving deterrence of public antitrust enforcement. Cartel members devote considerable resources to keeping cartels a secret, making it difficult for competition authorities ("CAs") to detect cartels. Leniency programs have shown to be a successful tool to destabilize cartels, their attractiveness lying in the immunity from public fines (Hoang et al., 2014).

A tension thus exists between public and private antitrust enforcement. Clearly, reporting a cartel to the CA is less attractive for firms if they still face civil damages claims afterwards. Previous literature has explored this tension between public and private antitrust enforcement, finding that leniency programs that only exempt self-reporting fines from fines, not damages, are inefficient from a deterrence perspective (Spagnolo (2004), Silbye (2012), Buccirossi et al. (2015)).

Nevertheless, neither the US nor the EU has extended the leniency program to civil damages claims, since other considerations besides deterrence play a role as well. The EU has recently adopted a Directive on private antitrust damages actions ("Directive") with the aim to encourage civil damages claims in the EU.\(^3\) The Directive lays down minimum rules including the burden of proof, access to documents and liability, in order to make it easier for cartel victims to obtain compensation for harm.

---

\(^1\)See e.g. http://www.reuters.com/article/2014/11/30/deutsche-bahn-airlines-idUSL6N0TKOGK20141130.

\(^2\)See http://ec.europa.eu/competition/cartels/cases/cases.html.

Both the US and the EU frameworks stipulate specific rules for the leniency applicant that obtained immunity from fines (the "immunity recipient"), in order to safeguard incentives to apply for leniency. The policy makers made very different choices, however, on how to ensure leniency incentives while promoting private antitrust enforcement. This can be explained by the very different policy goals of private antitrust enforcement in the US and the EU. In the US private enforcement is meant to contribute to deterrence, whereas in the EU the only goal is compensation. Nevertheless, even the goal of compensation of harm would be undermined if private enforcement reduced the number of leniency applications, especially since most civil damages actions are follow-on cases.\(^4\)

Therefore, this paper addresses the question which set of rules, the US or the EU one, is preferable for preserving incentives to apply for leniency. In particular, the paper considers the effect on leniency incentives of the rules on joint and several liability, contribution and punitive damages. These rules specify under which conditions cartel members are liable for the entire harm of the cartel (joint and several liability), whether they can subsequently sue the other cartel members for their part in the harm (contribution), and whether the damages they are liable to pay exceed the actual harm caused (punitive damages).

This paper treats these rules as having the following effect on liability of a cartel member: the rule \(i\) increases the total damage payment of non-reporting firms, \(ii\) increases the share of damages paid by non-reporting firms and reduces the share paid by the immunity recipient or \(iii\) does both. Using a game theoretical framework, the paper analyses how these changes in liability affect the incentives of firms to report the cartel. Other than previous literature, the paper evaluates the effects of both an increase in liability, and the division of liability among the cartel members. The paper finds that a leniency program that shifts damages liability from the non-reporting firm to reporting firms is most effective to deter cartels.

The paper then studies which of the two sets of rules most effectively creates such a discrepancy between reporting firms and non-reporting firms. It is found that the US rules are preferable to the EU rules in this respect. The EU rules allow for contribution, rendering the rule on joint and several liability without effect - except in bankruptcy situations. The US rules prohibit contribution and additionally allow for punitive damages, except for immunity recipients. As a result, US firms that do

\(^4\)Follow-on cases are civil damages claims that are filed following a prosecution and fine by the antitrust regulator.
report face a much lower expected liability than non-reporting firms, while in the EU this difference is not substantial.

The remainder of the paper is organized as follows: Section 2 discusses the rules regarding liability and punitive damages in the US and in the EU, followed by a literature review in Section 3. Section 4 introduces a game theoretical model, which’ results are interpreted in Section 5. Section 6 concludes.

2 Liability Rules

2.1 United States

In the US antitrust system, private antitrust litigation plays a central role, as illustrated by the fact that 90 per cent of all antitrust proceedings are brought before the courts by individuals or entities, and by the high damages awarded as mentioned above.\footnote{Sourcebook of Criminal Justice Statistics, table 5.41.2004. See also Terhechte (2011), p. 26.}

The possibility of private antitrust enforcement was first introduced in s.7 of the US Sherman Act of 1890.\footnote{Act to protect trade and commerce against unlawful restraints and monopolies, ch.647,26 Sta, 730 (1914) [current version at 15 U.S.C. paragraph 1 and further (1996)] (Sherman Act).} The Sherman Act provision has been superseded by the Clayton Act of 1914, which is similar in content.\footnote{Act to supplement existing laws against unlawful Restraints and Monopolies, and for other purposes, ch.323, 38 Stat. 730 (1914) [current version at 15 U.S.C. paragraph 12 (1996)] (Clayton Act).} Every US state has passed an antitrust statute that is comparable to the Sherman or Clayton Act.

In relation to liability of cartelists, three rules are particularly relevant. First, the US system allows injured parties to obtain punitive damages: three times the damages an injured party actually sustained, therefore called \textit{treble damages}. Treble damages are automatically awarded by US courts, providing an enormous incentive for private litigants.\footnote{Scharaw (2014), p. 355. See also Dabbah (2010).} The second relevant aspect is the rule on \textit{joint and several liability}: any infringer can be sued for the entire harm of the cartel. In combination with the treble damages rule, this means that a cartelist faces a liability of three times the harm of the cartel. On top of that, defendants do not have a right to claim contribution from the other cartel members. If they are the unlucky firm to be sued by injured parties, they also end up paying for the entire amount of damages.
Importantly, immunity recipients are exempted from the rules on treble damages and joint and several liability: they are only liable for single damages based on their own sales.\(^9\)

### 2.2 European Union

#### 2.2.1 Background of the Directive on Antitrust Damages Actions

In the EU, antitrust enforcement has so far primarily relied on public enforcement. Private claims have hardly played a role - only 60 damages actions are reported in total until 2004, compared to almost 700 cases in the US in only two years.\(^{10}\)

In its aim to encourage private claims, the European Commission has launched the Directive on Antitrust Damages Actions. The underlying idea is to ensure full compensation for victims of competition law infringements.\(^{11}\) The process of adoption of an EU legal framework for private antitrust damages claims started with the Courage v. Crehan (2001) judgement, in which the European Court of Justice (ECJ) held that victims of anti-competitive behavior should have the right to seek compensation for the harm resulting from that behavior. In the absence of EU legislation on the matter, the ECJ held that it was up to each member state to set up a legal framework allowing for damages claims.\(^{12}\)

A study conducted by Ashurst in 2004 on request of the European Commission concluded that those legal frameworks were of an "astonishing diversity" and in "total underdevelopment".\(^{13}\) The Ashurst Report was followed by a Commission Green Paper in 2005, in which the Commission proposed a number of options to address the procedural and legal obstacles that, in the view of the Commission, currently hampered damages claims. The subsequent White Paper stipulated specific mechanisms and rules to facilitate claims and to balance private claims with the leniency program. The process towards an EU framework facilitating private damages claims was accompanied by extensive debates in the literature on the desirability of private enforcement of competition.

---

law.\textsuperscript{14} Many of the concerns were based on the experience in the US, where private claims ensures compensation of harm but resulted in undesirable effects as well, such as frivolous suits and litigation favoring attorneys rather than the injured parties. The challenge in the EU, it was argued, was to encourage private damages claims while avoiding these pitfalls.

\textbf{2.2.2 Access to documents}

In the meantime, a substantial rise in the number of private antitrust damages actions was observed in particularly the United Kingdom, Germany and The Netherlands. Some of these cases led to preliminary reference cases at the ECJ, mainly related to questions of access to leniency statements. The ECJ held in the Pfleiderer case that no rule of EU law prohibited a private claimant from having access to a leniency application by the infringer.\textsuperscript{15} The ECJ ruled that it was up to national courts to determine the conditions under which damages claimants can be granted access to leniency documents. In the later Donau Chemie judgement, the ECJ affirmed that national courts need to balance the interests of leniency programs and compensation of harm when making this assessment for each specific case.\textsuperscript{16} The national court was thus to decide about disclosure leniency statements, leaving considerable uncertainty for potential leniency applicants. This uncertainty was resolved with the adoption of the Directive on Antitrust Damages Actions ("the Directive") in December 2014. Article 6 paragraph 6 of the Directive stipulates that national courts cannot at any time order a party or a third party to disclose leniency statements and settlement submissions.

This rule is one of the mechanisms included in the Directive to strike a balance between ensuring effective compensation of antitrust harm on the one hand, and preserving the effectiveness of the leniency program on the other. By protecting leniency statements from disclosure to damages claimants, a leniency application cannot serve as evidence for private claimants. Without the protection, leniency applicants would potentially find themselves in a worse position than their co-infringers in private claims.

\textsuperscript{14}See for example Wils (2003), Wils (2009) and Maier-Rigaud (2014)

\textsuperscript{15}Judgement of 14 June 2011, Case C-360/09, Pfleiderer AG v Bundeskartellamt.

\textsuperscript{16}Judgement of 6 June 2013, Case C-536/11, Bundeswettbewerbsbehörde v Donau Chemie AG and others.
2.2.3 Liability rules for immunity recipients

The Directive also stipulates special liability rules for immunity recipients, albeit the EU Commission made markedly different choices from those made in the US.

**Joint and several liability** Article 11 of the Damages Directive lays down the rules regarding joint and several liability. The general rule regarding joint and several liability mirrors the US system: infringers are liable for the entire harm of the cartel and the immunity recipient is only liable towards its own direct and indirect purchasers. An injured party can thus sue any of the infringers for the entire harm, except for the immunity recipient, which can only be sued by its own purchasers for its own harm. However, the Directive specifies exceptions to this exception.

First, small and medium-sized firms are exempted from joint and several liability. It is deemed unfair if such small firms would have to pay for the entire harm of the cartel, and it is feared that this might lead to bankruptcies.\(^\text{17}\) The second exception specifies that the immunity recipient is still liable for all harm caused by the cartel if injured parties are unable to obtain compensation from the other cartelists (Article 11, paragraph 4 under b). The rationale is to ensure full compensation of harm for injured parties. Under the EU system the immunity recipient thus does not enjoy absolute protection from joint and several liability for the entire harm of the cartel. The Directive does not specify how the ability of co-infringers to compensate claims will be determined. At least two scenarios come to mind in which the immunity recipient still remains liable for the entire harm:

1. If the co-infringers have gone bankrupt, possibly after having paid the public fine.\(^\text{18}\)

2. If the co-infringers are cleared from involvement with a cartel on appeal. It is even possible that an appeal court rules that there is no proof to establish

\(^{17}\)This exception is not treated in this paper. Analysing the impact of this rule in a setting with asymmetric firms would be a possible extension of the model discussed in section 4.

\(^{18}\)Fines are regularly reduced on grounds of bankruptcy concerns. This was for example the case for five of the seventeen firms involved in the bathroom equipment cartel. See the EU press release "Antitrust: Commission fines 17 bathroom equipment manufacturers EUR 622 million in price fixing cartel" (IP/10/790). See also (Fabra and Motta, 2012). However, the apparently real risk of bankruptcy as a result of antitrust fines should raise concern of bankruptcy following antitrust damages, as those are often substantially higher than the fines. Bankruptcy can therefore not be disregarded as a negligible risk.
the cartel at all, and annuls the decisions addressed at the co-infringers. This would make it impossible for injured parties to claim from the co-infringers - which then technically are not infringers. They can then claim from the immunity recipient, who becomes jointly and severally liable for all harm. The immunity recipient cannot deny its involvement after having admitted the infringements to the CA, even though the cartel did not exist as a matter of law or fact (Geradin and Grelier (2014), Akman (2014)). The immunity recipient, namely, admitted its infringements to the Commission or a national competition authority, and their decisions are binding in civil courts (Article 9 of the Directive).

**Contribution** The EU rule on contribution is opposite to the one prevalent in the US: The Directive allows for contribution, which is in accordance with member states’ legal systems. According to paragraph 5 of Article 11, infringers may recover contribution from co-infringers based on their relative responsibility for the harm caused. Discussion is ongoing about the precise meaning of responsibility for the harm. It is unclear whether it should be interpreted as sales or market share, or rather to the role of the firm in the anticompetitive behavior. This is likely to result in disagreement and lengthy proceedings, where considerable resources will be spent by both the firm suing for contribution and the defendants in those proceedings. Ultimately, however, the possibility of proceedings should lead to an outcome where each firm pays for its share of the harm, which is markedly different from the US.

**Punitive damages** Again contrary to the US, the Directive does not allow for punitive damages. Article 3 paragraph 3 specifies that "Full compensation under this Directive shall not lead to overcompensation, whether by means of punitive, multiple or other types of damages". Punitive damages are not common in Europe, where most countries allow only for compensation of actual harm. In the few states that allow for the award of punitive damages, such as the United Kingdom, Ireland and Cyprus, they are rarely awarded (Scharaw (2014), p. 355, Ashurst study 2004, p. 84).

### 2.3 Comparing liability rules

Table 1 and the graphical illustrations summarize how the rules applicable in the US and the EU compare.
<table>
<thead>
<tr>
<th>Table 1: caption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint and several liability</td>
</tr>
<tr>
<td>Yes (Exception: immunity recipient)</td>
</tr>
<tr>
<td>Contribution</td>
</tr>
<tr>
<td>Punitive damages</td>
</tr>
</tbody>
</table>

**Figure 1:** Joint and several liability

**Figure 2:** Contribution
3 Literature

3.1 Critique on the Directive

Several contributions have highlighted that the liability rules in the Directive may not achieve an optimal balance between compensation and the leniency program. Geradin and Grelier (2014) point out that the immunity recipient may have a higher expected liability under the Directive than its co-infringers. It may be the primary target for litigation, since it is likely to be the only infringer not to appeal the Commission decision, and in the case its co-infringers are cleared from involvement on appeal it has no way of escaping liability for the entire harm of the cartel. Kortmann and Wesseling (2013) expect defendants to be reluctant to settle with claimants early on, because the rules in the Directive leave them exposed to contribution claims from co-infringers after settling. This, they argue, would be to the detriment of claimants as well.

Critique on the impact of the rules in the Directive on civil claims also targets the rules on access to documents. Migani (2014) argues that protection of leniency statements from access by claimants contradicts the aim to ensure full compensation. She proposes to generally grant access to leniency statements and deny it solely in specific circumstances, when the claimant can easily obtain evidence otherwise. In practice, however, one may question whether access to leniency documents is crucial to claimants when the decision of the Commission or CA already serves as proof in civil court.

Various authors criticize the ambiguity in some parts of the Directive, potentially complicating civil damages claims. Peyer (2015) notes that the exception of joint
and several liability for small and medium sized companies causes uncertainty, since defendants will initially not know whether this exception applies to them. Wisking and Herron (Wisking and Herron) criticize the ambiguity regarding the liability of the immunity recipient: is it liable towards its own direct and indirect purchasers for all their harm, or is it liable towards them only with respect to its sales to them? These uncertainties may form an obstacle to settlements, and leave room for interpretation. From an economic perspective, this raises the question which interpretation of these rules would be preferable to find the optimal balance between leniency and damages.

3.2 Interaction leniency and damages

The contributions studying the interplay between leniency and damages have shown that leniency programs that only exempt self-reporting firms from fines are inefficient, seen from a deterrence perspective (Spagnolo, 2004). Colluding firms will have low incentives to report the cartel if they still face substantial damages claims. Spagnolo shows that in order to maximize deterrence using a leniency program, it is optimal to minimize the liability for damages for the first reporting firm. Similarly, Green and McCall (2009) propose to extend leniency to civil liability. Silbye (2012) finds that even if CAs can adjust leniency programs in response to a higher damage level, private actions may enhance the scope for collusion rather than deter collusion. This is the case if CAs are not allowed to reward self-reporting firms, which is the applicable rule in most jurisdictions. Cauffman (2011) proposes to adopt the Hungarian approach, in which the immunity recipient can only be sued in case victims cannot collect their claims from other undertakings being held liable for the same infringement. This approach would also allow the disclosure of leniency applications while preserving incentives to report the cartel. Buccirossi et al. (2015) analyse the rules in the Damages Directive regarding liability and access to documents and conclude that these are outperformed by the alternative chosen in Hungary, in line with Cauffman’s suggestion.

A related stream of literature studies the effect of different contribution rules. Hviid and Medvedev (2010) find several advantages of the no-contribution rule, in that it encourages settlement and fosters information revelation. However, in their setting where cartelists obtain low settlements in exchange for evidence against the other infringers, the leniency applicant who already shared all information with the CA is worst off. As such, the no-contribution rule is found to undermine the leniency
program, in particular in combination with a joint and several liability rule. Some earlier theoretical literature on contribution in antitrust litigation emphasizes on risk-aversion. Easterbrook et al. (1980) find that a rule of no contribution provides greater deterrence of anticompetitive behavior than any rule of contribution. From a broader welfare perspective, however, they see disadvantages of a no contribution rule, mainly because of risk aversion and of legal error. Polinsky and Shavell (1981) reach more nuanced results regarding the deterrent effect of a rule of no contribution. They conclude that the risk that the no contribution rule puts on innocent parties may discourage firms from engaging in socially beneficial activities, while failing to deter firms behaving anti-competitively.

4 Basic leniency model

Let there be two symmetric, risk neutral firms who have formed a cartel and are each contemplating whether to report it to the Competition Authority (CA). Each firm’s decision is based on the public enforcement policy set by the CA, the liability for damages it can expect and the future gains of collusion it would forego by reporting.

When the firms decide on reporting, the CA has set a fine $F$ for collusion as well as a reduced fine $F_R < F$ for firms that report the cartel. To be eligible for the leniency program, a self-reporting firm must hand over all evidence it has of the cartel. In exchange, the firm gets a reduced fine or total immunity from the fine. No rewards can be given to firms revealing a cartel ($F_R \geq 0$).

Moreover, the leniency program does not protect the self-reporting firm against private damages claims by injured parties. The law in fact facilitates such claims by providing that CA convictions have binding force in private actions. As a result, private damages claims are assumed to be awarded by the court with certainty and in their entirety. The injured parties can claim damages up to the overcharge of the cartel. For now only actual damages can be claimed - the effect of allowing for punitive damages is discussed further below. It is assumed that the court makes no errors in quantifying the harm. Additional assumptions are that all claims filed are follow-on claims, and that following a CA decision all injured parties file their claim.

\[\text{\footnotesize \textsuperscript{19}}\text{Courts are thus assumed not to make errors in quantifying the harm.}\]

\[\text{\footnotesize \textsuperscript{20}}\text{Note that the deadweight loss caused by the cartel is thus not covered by the damages, which corresponds with reality. For simplicity, the model excludes claims for interest and lost profits.}\]

\[\text{\footnotesize \textsuperscript{21}}\text{Stand-alone claims are thus excluded. In reality, the vast majority of antitrust damages actions follow a decision of a public authority ("follow-on actions").}\]
The firms also include future cartel profits in the decision whether to report the cartel to the CA. It is assumed that firms employ a trigger strategy, so that collusion breaks down permanently after a firm has reported the cartel. Similarly, collusion is assumed not to be continued after the cartel has been detected by the CA. Self-reporting thus comes with not only the costs of fine and damages, but also of foregone cartel profits for all future periods.\textsuperscript{22} As a result, the payoffs of not reporting include future profits, whereas reporting means to forego these future profits. When not reporting, firms will collude infinitely or until they are detected so that their total payoff is based on detection probability $p$. For simplicity it is assumed that firms do not discount the future.\textsuperscript{23}

The timing of the model is as follows. First, the firms decide upon engaging in a cartel or not. Secondly, each firm decides non-cooperatively upon self-reporting. Since self-reporting requires handing over all evidence of the cartel, it is assumed that when at least one firms self-reports the CA can punish the cartel with certainty. If only one firm self-reports, it pays the reduced fine $F_R$ and the other firm pays the full fine $F$. If both firms self-report, each firm obtains immunity with probability $\frac{1}{2}$.\textsuperscript{24} Third, if no firm self-reports, the cartel is detected and convicted by the CA with probability $p \in (0, 1)$ in each period.

Both firms thus face the choice whether to report, and pay a reduced fine and damages with certainty, or not to report, and possibly pay a full fine plus damages, namely when the other firm reported or when the CA detected the cartel. Harm, and consequently damages, increase with the periods that collusion has lasted. For now this means that a reporting firm faces damages $D$, while a non-reporting firm faces a potential damage claim of $\overline{D}$ in the future, if the cartel is detected. This Prisoners’ Dilemma game, introduced by the leniency program, is solved as a simultaneous move game. Payoffs are as follows:

\textsuperscript{22}This is different from (Motta and Polo, 2003), (Aubert et al., 2006) and (Hviid and Medvedev, 2010), who assume that firms return to collusion in the period after detection and conviction. The assumption used here appears realistic, considering the usually very long duration of both public and private proceedings related to cartels. Appeals against the CA decision can take years, as do the various procedural issues arising in private proceedings such as jurisdiction, disclosure of evidence and damage quantification. During these proceedings it seems unlikely that firms could start colluding again, so that at least for the foreseeable future after revelation of a cartel the firms compete with each other.\textsuperscript{23}

\textsuperscript{23}As long as firms have the same discount factor and the same MC, it is conjectured that the qualitative results would continue to hold.

\textsuperscript{24}The EU policy also allows for fine reductions to second and later reporting firms, provided that they can offer the CA new evidence of added value. By assumption, as in Silbye 2012, the first firm offers sufficient evidence to prove the cartel so that the other firm can no longer offer evidence of added value.
As discussed above, payoffs of non-reporting firms include future cartel profits, taking into account that the cartel is expected to last infinitely or until they are detected.

It can readily be seen that \((NR,R)\) and \((R,NR)\) are not Nash equilibria, as the non-reporting firm in those cases can improve their outcome by also reporting (since \(F_R < F\)). The pair \((R,R)\) is a Nash equilibrium regardless of the values of the parameters.

The payoff of non-reporting firms can be rewritten as

\[
\frac{\pi}{2p} - F - D
\]  
(1)

The pair \((NR,NR)\) is a Nash equilibrium whenever

\[
\overline{D} - D \leq \left(\frac{1}{p} - 1\right)\frac{\pi}{2} - F + F_R
\]  
(2)

Hence, neither firm will report if the profits of collusion are sufficiently large, and the discount to the fine as well as the probability of detection are sufficiently low. When both equilibria can be sustained, it is assumed that the cartel coordinates on the pay-off dominant equilibrium - i.e. the equilibrium giving highest expected value.\(^{25}\) The pair \((NR,NR)\) is payoff dominant if

\[
\overline{D} - D \leq \left(\frac{1}{p} - 1\right)\frac{\pi}{2} - \frac{F - F_R}{2}
\]  
(3)

Comparing this to equation 2, it can readily be seen that whenever \((NR,NR)\) is a Nash equilibrium, it is also payoff dominant. Note that either equilibrium only occurs when it yields a positive profit for the firms. If the profit of the most attractive strategy is negative, the firms will not collude in the first place and earn zero profits.

\(^{25}\)Compare Silbye (2012).
In other words, in that case the policy has achieved its goal of deterring cartels. The participation constraint for firms to collude and enter the reporting game is thus that payoffs are positive. This requires, for the equilibria $(R,R)$ and $(NR,NR)$ respectively, that

\[ \frac{\pi}{2} > \frac{F + F_R}{2} + D \]  

(4)

and

\[ \frac{\pi}{2} > \frac{F}{p} \left( F + \hat{D} \right) \]  

(5)

In the remainder of the model it is assumed that the participation constraint is met, unless specified otherwise. The next sections consider the effects of an increase in damages faced by non-reporting firms, a higher share in damages faced by non-reporting firms, and a combination of both.

### 4.1 The non-reporting firm pays higher damages

Let $\lambda > 1$ be an increase in the damages to be paid by a firm that did not report.

<table>
<thead>
<tr>
<th>Report (R)</th>
<th>Not report (NR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\pi/2 - \frac{F + F_R}{2} - D$;</td>
<td>$\pi/2 - F_R - D$;</td>
</tr>
<tr>
<td>$\pi/2 - \frac{F + F_R}{2} - D$;</td>
<td>$\pi/2 - F - \lambda D$;</td>
</tr>
<tr>
<td>$\pi/2 - F - \lambda D$;</td>
<td>$\frac{1}{p}(\pi/2 - p \left[ F + \lambda D \right])$;</td>
</tr>
<tr>
<td>$\pi/2 - F_R - D$</td>
<td>$\frac{1}{p}(\pi/2 - p \left[ F + \lambda D \right])$</td>
</tr>
</tbody>
</table>

The pair $(NR, NR)$ is a Nash equilibrium if

\[ \frac{\pi}{2p} - F - \lambda \hat{D} \geq \frac{\pi}{2} - F_R - D \]  

(6)

Or, equivalently, if

\[ \lambda \leq \left( \frac{1}{p} - 1 \right) \pi - F + F_R + \frac{D}{\hat{D}} \equiv \hat{\lambda} \]  

(7)

Hence, non-reporting is less attractive as the damages paid extra by the non-reporting firm increase.
4.2 The non-reporting firm pays a higher share of the damages

Let $\beta \in [0, 1]$ determine the division of harm between the reporting and non-reporting firms. If $\beta > 0$, the non-reporting firm pays a larger share of the damages claims than the reporting firm. If both firms reported or both firms did not report, $\beta = 0$. Payoffs look as follows:

<table>
<thead>
<tr>
<th></th>
<th>Report (R)</th>
<th>Not report (NR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report (R)</td>
<td>$\pi/2 - F + F_R - D$;</td>
<td>$\pi/2 - F_R - D$;</td>
</tr>
<tr>
<td></td>
<td>$\pi/2 - F + F_R - (1 - \beta)D$</td>
<td>$\pi/2 - F - (1 + \beta)D$</td>
</tr>
<tr>
<td>Not report (NR)</td>
<td>$\frac{\pi}{2} - F - (1 + \beta D)$;</td>
<td>$\frac{1}{p}(\pi/2 - p [F + D])$;</td>
</tr>
<tr>
<td></td>
<td>$\pi/2 - F_R - (1 - \beta)D$</td>
<td>$\frac{1}{p}(\pi/2 - p [F + D])$</td>
</tr>
</tbody>
</table>

As before, the pair $(R, R)$ is a Nash equilibrium regardless of parameter values. The pair $(NR, NR)$ is a Nash equilibrium if

$$D - (1 - \beta)D \leq (1 - 1)\frac{\pi}{2} - F + F_R$$

(8)

Or, equivalently

$$\beta \leq \frac{(1 - 1)\frac{\pi}{2} - F + F_R - D}{D} - 1 \equiv \beta$$

(9)

As $\beta$ increases, the non-reporting firm pays a larger share of the harm of the reporting firm, and not reporting becomes less attractive.

4.3 The non-reporting firm pays higher damages and a higher share of the damages

Finally, the effect of $\lambda$ and $\beta$ combined is considered.

Now, the pair $(NR, NR)$ is a Nash equilibrium if

$$\beta \leq \frac{(1 - 1)\frac{\pi}{2} - F + F_R - \lambda D}{D} - 1 \equiv \beta$$

(10)

$^{26}$In a future version of the model, $\beta$ will also affect payoffs in the pair $(R, R)$, to account for the extra damages payments reporting firms face in case they turn out not to be the first to report. For now, $\beta$ illustrates that a rule on contribution combined with a rule on joint and several liability shifts damages from reporting firms to non-reporting firms.
\[
\begin{array}{c|cc}
\text{Report (R)} & \text{Not report (NR)} \\
\hline
\pi/2 - \frac{F+FR}{2} - D; & \pi/2 - FR - (1 - \beta)D; \\
\pi/2 - \frac{F+FR}{2} - D & \pi/2 - F - \lambda(1 + \beta)D \\
\hline
\pi/2 - F - \lambda(1 + \beta)D; & \pi/(2p) - F - \lambda D; \\
\pi/2 - FR - (1 - \beta)D & \pi/(2p) - F - \lambda D \\
\end{array}
\]

Or, equivalently

\[
\lambda \leq \frac{\left(\frac{1}{p} - 1\right)\pi}{D} - F + FR + (1 - \beta)D \equiv \hat{\lambda}
\]

(11)

The combination of increasing damages and increasing the share of damages paid by the non-reporting firm has an even stronger effect on discouraging non-reporting. The parameter values for which \((NR, NR)\) is a Nash equilibrium are more restricted than before, as can be seen from \(\hat{\lambda} < \hat{\lambda}\) and \(\hat{\beta} < \hat{\beta}\).

### 4.4 Specifying damages

The results become somewhat easier to interpret once we specify damages. The damages to be paid by cartelists to their purchasers are based on the overcharge by the cartel: the difference between the price paid and the but-for price, the price that would have been paid in a competitive market. In our setting where \(MC = 0\), the competitive price is zero and so the overcharge equals the price, and the total damage equals the cartel profits.\(^{27}\) The colluding firms share the monopoly profits \(\pi\), so that each firm earns \(\frac{1}{2}\pi\).

Firms are assumed to be liable for damages equal to all profits earned during the entire period of collusion. Assuming that firms decide upon reporting or not reporting in the first period of colluding (period 0), damages equal \(\pi/2\) for each reporting

\(^{27}\)The model abstracts from - admittedly very real - difficulties in quantifying the damage, such as losses in profits of purchasers due to the higher prices, and the pass-on defence. Invoking this defence, colluding firms can argue that their purchasers passed on the high price to downstream buyers, and thus not suffered any harm. The rules regarding the pass-on defence are far from crystallized in the EU and colluding firms can therefore in no way rely on successfully invoking it in court. Given this uncertainty, it appears reasonable to assume that firms do not take these possibilities into account, and rather anticipate paying full damages.
firm - profits earned in period 0 - and profits equal

\[ D = \frac{1}{2} \sum_{i=0}^{\infty} (1 - p)^i \pi = \frac{\pi}{2p} \]  

(12)

for each non-reporting firm. Now, \((NR, NR)\) is a Nash equilibrium and is payoff dominant if the following holds:

\[ \beta \leq 1 - \frac{1}{p} + \frac{2(F_R - F)}{\pi} - \frac{\lambda}{p} \]  

(13)

and

\[ \lambda \leq 1 - \frac{\beta}{p} + \frac{2p(F_R - F)}{\pi} \]  

(14)

or, equivalently

\[ \beta + \frac{\lambda}{p} \leq 1 - \frac{1}{p} + \frac{2(F_R - F)}{\pi} \]  

(15)

As can be seen from the payoff matrix, the factors \(\lambda\) and \(\beta\) interact.

5 Discussion of EU and US rules

Using the results derived in the previous sections, the EU and US liability rules can be evaluated for their effect on incentives to apply for leniency. The rule on joint and several liability only has meaning in conjunction with the rule on contribution. If the targeted firm can turn to its co-infringers for contribution, it ends up paying for its own share regardless of the rule on joint and several liability. In the EU this is also the idea: the rule is purely meant to make life easier for plaintiffs, not to serve as a punishment for non-reporting firms.\(^{28}\) Essentially, the end result is the same as without the rule on joint and several liability, where each firm pays for the harm of its own purchasers.

Of course, from the perspective of the targeted firm it is been preferable to pay its own share right away rather than to be burdened with the task of obtaining contribution from the others. However, if all cartelists were immediately involved in the procedure, they would also have to negotiate or litigate on the division of damages. In fact, the only real risk of the targeted firm is that its co-infringers are unable to pay their share. If this risk is non-negligible (cases have occurred in which a co-infringer went bankrupt), the expected liability of non-reporting firms increases.

\(^{28}\)Directive on Antitrust Damages Actions, Preamble, para. 37.
In that scenario, however, the immunity recipient is no longer shielded from joint and several liability. The Directive stipulates that when claimants cannot obtain compensation from the others, they can turn to the immunity recipient. This means that the only case in which joint and several liability puts a potential additional liability on non-reporting firms, this risk is extended to the immunity recipient.

This outcome differs significantly from the US system, where the firm targeted by injured parties is simply ends up bearing all damages. In terms of the model above, $\beta$ is higher than in the EU. From a perspective of protecting leniency incentives this is clearly preferable.

Presenting the EU and US rules in terms of $\lambda$ and $\beta$, in a setting with two colluding firms as in the previous section, the following picture arises. First consider the outcome under the US system. If he firms reports it faces no joint and several liability ($\lambda = 0$). It is assumed that plaintiffs choose randomly which firm to sue (first), so that the firm is sued with probability $\frac{1}{2}$. In this case it is only liable for its own harm, which equals half of the cartel profits $\frac{\pi}{2}$ as in the previous sections - but forgetting about future profits for now. The expected damages of such a firm are $E(D_{R}) = \frac{1}{2} \times \frac{\pi}{2} = \frac{\pi}{4}$. The non-reporting firm, instead, is liable for all harm, and ends up paying it all if it is sued first. If the other firm did report and is sued first, it still ends up paying its own harm since the reporting firm is exempted from joint and several liability. The expected damage of the non-reporting firm therefore ranges between $E(D_{NR}) = \frac{1}{2} \pi$ and $E(D_{NR}) = \frac{1}{2} \pi + \frac{1}{2} \pi = \frac{3}{4} \pi$.

In the EU, in contrast, the reporting firm faces expected damages $E(D_{R}) = \frac{\pi}{2} + \gamma \frac{\pi}{2}$, where $\gamma \in (0, 1)$ represents the risk that compensation cannot be obtained from the other cartelist. The non-reporting firm expects to pay damages equal to $E(D_{NR}) = \frac{\pi}{2} + \gamma \frac{\pi}{2}$: if it is sued for all damages of the cartel, it will sue the other firm for contribution, unless the other is unable to pay. Clearly, no discrepancy exists between the reporting and the non-reporting firm. This implies that incentives to apply for leniency will only have to come from fine immunity, which previous literature has shown to be quite unlikely, as discussed in section 2.

In the EU setting the non-reporting firm may even be better off than the immunity recipient, if once considers that the risk that compensation cannot be obtained from the immunity recipient is lower than for a non-reporting firm. First, the immunity recipient did not already pay a fine of maximum 10% of its annual worldwide turnover (the maximum in the EU). For a non-reporting firm this fine may have already drained resources. Secondly, the immunity recipient usually does not appeal the decision, so the risk of annulment of the decision on appeal (which would
make it impossible to sue that firm for contribution on the harm) does not exist with respect to the immunity recipient. For these reasons the expected damages of the immunity recipient may in fact exceed those of a non-reporting firm - and that still leaves aside that the immunity recipient is likely to be the primary target of litigation, because it is usually the only one not to appeal the decision.

The US and EU outcomes diverge even further when punitive damages are included. In the US, plaintiffs can sue non-reporting cartelists for three times the damages and courts automatically award these. This not only provides strong incentives for plaintiffs to file their claim, but also appears to make non-reporting firms a more attractive target for claimants than the immunity recipient, which can only be sued for actual damages. Most importantly, the treble damages rule puts non-reporting firms in a substantially worse position than the immunity recipient, thereby greatly encouraging firms to report. In particular, the setting laid out above changes for the non-reporting firm, which faces expected liability ranging between $E(D_{NR}) = 3 \times \frac{1}{2} \pi = \frac{3}{2} \pi$ and $E(D_{NR}) = 3 \times \frac{3}{4} \pi = \frac{9}{4} \pi$.

The US rules, in short, effectively set the expected damages payments for non-reporting cartelists multiple times higher than that of the immunity recipient. The EU rules, in contrast, lead to the same expected damage for the immunity recipient and non-reporting firms. From the perspective of preserving leniency incentives, therefore, the US liability rules are preferable to the EU liability rules.

6 Conclusion

This paper has addressed the question to what extent the EU rules on liability in the new Directive on Antitrust Damages Actions preserve incentives for cartel members to apply for leniency. In particular, the paper has compared the EU liability rules with those applicable in the US.

Using a game theoretical approach, the paper has aimed to demonstrate that leniency incentives can be preserved while allowing for private damages claims, by creating a discrepancy in liability of the immunity recipient and that of the other cartelists. Liability rules can create such a discrepancy in two ways: i) by increasing the liability for damages of non-reporting firms and ii) by increasing the share of damages paid by non-reporting firms. The first makes non-reporting more costly, while the second makes non-reporting more costly and reporting less costly.
A rule on joint and several liability that applies only to non-reporting firms combined with a no contribution rule increases the share of damages paid by non-reporting firms. This combination creates an asymmetry: if the non-reporting firm is sued it is liable for all damages, but if the reporting firm is sued, it is only liable for its own damages and the non-reporting firm still pays for the harm to its own purchasers.

Punitive damages increase the liability of a non-reporting firm. The effect is, of course, strongest in combination with the joint and several liability rule and no contribution rule. In that case non-reporting firms risk to pay three times the harm of the entire cartel. This summarizes the system that is in place in the US.\textsuperscript{29}

The European Commission has chosen not to include provisions on punitive damages in the Directive, nor to adopt a no contribution rule as is done in the US. As a result, the liability rules achieve neither an increase in damages for the non-reporting firm nor a shift in damages liability towards the non-reporting firm. The expected liability for reporting and non-reporting firms is the same: the contribution rule leads to a division of damages according to responsibility. While uncertainty regarding the interpretation of responsibility or costs of suing for contribution may increase the liability of a cartel member in a particular case, these factors do not increase its expected liability of non-reporting.

As a result, bankruptcy is the only substantial risk for the non-reporting firm to have to pay for the entire harm of the cartel, besides the possibility that co-infringers are cleared from involvement in the cartel on appeal. This risk would have created a discrepancy between the liability of non-reporting and reporting cartel members, if the Directive had not included an exception to the limited liability of the immunity recipient. According to this exception, the immunity recipient’s protection from joint and several liability does not apply if injured parties cannot obtain compensation from the other cartel members. Again, the reporting and non-reporting firms are in the same position regarding damages liability.

The prohibition of disclosure of leniency statements, finally, is helpful to immunity recipients but hardly puts them in a better position than their co-infringers. It is rather meant to prevent them facing an even worse position than their co-infringers, because claimants could obtain evidence against them more easily. In addition, the rule would not be necessary if immunity recipients were fully shielded from civil

\textsuperscript{29}Until 2004, also self-reporting firms were liable for treble damages. The argument of preserving leniency incentives is said to have been the reason to limit damage liability for self-reporting firms to actual damages.
liability. In that case, their leniency documents could be disclosed to serve private claimants in their case against the other infringers.

In sum, it is doubtful whether the rules in the Directive which are designed to preserve incentives for self-reporting firms to apply for leniency are effective to achieve this aim. Of course, the European Commission balanced other considerations besides the interaction with the leniency program when drafting the Directive. Punitive damages are considered not to fit in member states' legal systems, because they contradict the principle that one cannot claim more compensation than the harm suffered. Contribution is deemed not to be morally just because it arbitrarily leaves one infringer with a much higher liability than the share it is responsible for, while letting its co-infringers "off the hook". Needless to say, these considerations are worth pursuing and the task of balancing the interests of preserving the leniency program and other legal principles remains a political one.

Nevertheless, the safeguards put in place in the Directive to preserve incentives to report may not be as effective as they appear at first glance. This is problematic insofar it undermines one of the interests the Commission has aimed to balance in the Directive, namely the effectiveness of the leniency program. It is doubtful whether this single instrument is able to achieve the Commission’s multiple aims: ensuring full compensation and preserving the leniency program, while avoiding any of the US pitfalls and upholding the European legal principles that preclude punitive damages or a no-contribution rule.

Even if the policy choices made are meant to serve the primary goal of ensuring compensation, caution is warranted. At the end of the day, the vast majority of private antitrust damages actions are follow-on claims. If the current system undermines incentives to self-report, victims of cartels may overall end up recovering less damages than would have been the case with, at first glance, less plaintiff-friendly liability rules.
References


Kortmann, J. and R. Wesseling (2013). Two concerns regarding the european draft directive on antitrust damage actions. *Antitrust Chronicle* 8(1).


