

# Leniency Theory and Complex Realities

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### Abstract

This paper seeks to assess the robustness of the assumptions made by much of the theoretical literature on leniency programs, giving a glimpse of the uncertainties and complexities that apply in practice. First, sanctions are hard to estimate and the decision to form a cartel is not generally made by the firm as a rational monolith. Second, empirical evidence from the EU suggests an over-reliance on leniency, with only a weak threat of detection through investigations alone. Most leniency reporting may be occurring where a cartel has already ceased to operate or is very likely to be caught. Finally, the decision to come forward is not one that is taken lightly by the firm; it is fraught with uncertainties and dangers, including the challenges of ensuring cooperation from employees. The paper concludes with three recommendations for the strengthening of leniency policies.

Keywords: Leniency; Cartels; Deterrence; Competition Law; Compliance; Corporate Governance

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# Leniency Theory and Complex Realities

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Abstract: This paper seeks to assess the robustness of the assumptions made by much of the theoretical literature on leniency programs, giving a glimpse of the uncertainties and complexities that apply in practice. First, sanctions are hard to estimate and the decision to form a cartel is not generally made by the firm as a rational monolith. Second, empirical evidence from the EU suggests an over-reliance on leniency, with only a weak threat of detection through investigations alone. Most leniency reporting may be occurring where a cartel has already ceased to operate or is very likely to be caught. Finally, the decision to come forward is not one that is taken lightly by the firm; it is fraught with uncertainties and dangers, including the challenges of ensuring cooperation from employees. The paper concludes with three recommendations for the strengthening of leniency policies.

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## 1. Introduction

The purpose of this paper is to test the theoretical underpinnings of leniency policies used in the fight against hardcore cartels. Many academics and competition authorities describe the decision to apply for leniency in the context of a prisoner's dilemma setting in which cartel members make repeated judgments as to the profitability of staying in a cartel agreement as against either cheating on the agreement or approaching the competition authority. The fact that immunity is only available to the first revealing firm is said to spark a 'race' to the competition authority, undermining the trust that underpins the collusive agreement. As a consequence, active cartels are destabilised and future infringements are deterred. Within this economic paradigm of deterrence, cartel members are assumed to be firms acting as rational actors.

The realities of leniency are less straightforward. Contrary to the prevailing assumption about rational choice, cartels are often borne out of market downturns and the unpredictability of corporate fines makes an accurate calculation of the likely penalty difficult. It is also important to note that cartels are not typically organised at an institutional level within the firm. Many infringements are perpetrated by a small number of rogue employees or within a subsidiary with objectives that may not necessarily align with those of its parent.

The empirical evidence available also raises questions over the extent to which leniency is succeeding in destabilising the operation of existing cartels and achieving deterrence. It suggests that the majority of cartel cases uncovered by leniency, at least at the European Union (EU) level, ceased to operate *before* they were reported.

In addition, the decision to apply for leniency involves a consideration of multiple factors and risks that may mean it is not appropriate to characterise the application for leniency to the competition authority as a simple 'race' to get in first in order to secure immunity from fines (even where levels have increased significantly over the last few years).

Having discussed the factors noted above, the paper concludes that whilst leniency policies are likely to remain central to cartel enforcement, competition authorities should refocus their attention to a greater extent than currently on increasing their ability to uncover cartels through their own investigative efforts.

The paper is organised as follows. Part II sets out the orthodox theoretical underpinnings of leniency policies. Part III examines what motivates firms to apply for leniency. Part IV considers whether leniency policies succeed in destabilising and deterring cartels. Part V then examines the extent to which applications for leniency can be characterised as a 'race'. Part VI concludes.

## 2. The Theoretical Underpinnings of Leniency Policies

It is generally accepted that violators of the law should be rewarded for their co-operation. Sentencing guidelines throughout the world prescribe a reduced sentence where a defendant co-operates with the authorities and admits guilt at the earliest

opportunity. This results in significant savings for enforcement authorities, especially in building up a body of evidence, preparing prosecutions and defending against appeals.<sup>1</sup>

What makes cartel enforcement unusual is that rewards for co-operation play a far greater role than simply yielding ex post enforcement savings. Leniency policies have become the most important tool for *detecting* cartels and are also purported to *deter* future infringements from occurring. Uncovering cartel, which by their very nature are secret, is very difficult and resource intensive. While investigations can often be triggered by complaints from buyers or media attention, the fact that collusion can potentially occur in secret in thousands of different industries makes policing markets for infringements and uncovering sufficient evidence to prove wrongdoing extremely difficult. This detection problem is compounded by the fact many cartels are in upstream industries, with any resulting higher prices often passed down several times before they are borne by final consumers.

The model of deterrence that forms much of the basis of modern cartel enforcement is the economic theory of *optimal deterrence* advocated by the economist Gary Becker and inspired by the writings of Jeremy Bentham.<sup>2</sup> This theory assumes that before committing an economic crime, rational firms will balance the expected gain from a violation (in terms of illegal profits) against the expected punishment (the size and likelihood of the penalty). Deterrence is therefore a function of the size of the penalty and the probability of detection, 'altering the potential offender's balance of expected costs and benefit in such a way as to induce him to refrain from undesirable action'.<sup>3</sup>

Where cartel enforcement falls short of the theoretical optimal deterrence benchmark, collusive agreements will occur despite enforcement so long as the expected rewards are sufficiently high. However, because their arrangements are illegal, cartels face a crucial 'enforcement problem' common to other forms of organised crime.<sup>4</sup> This is that they cannot rely on legally enforceable contracts to ensure each cartel member is reducing its output or adhering to any other element of the collusive agreement.<sup>5</sup> This is important because cartelists often face a classic *Prisoner's Dilemma*; each cartel member may be better off increasing its output (or lowering its prices) at a time when all the other cartel members are doing the opposite. Cartels combat this danger through the threat of internal punishment against cheating firms.<sup>6</sup> Punishment can take various forms; for example using collective excess capacity to cause losses to the cheating firm (possibly even

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<sup>1</sup> See, eg, L Kaplow and S Shavell, 'Optimal Law Enforcement with Self-Reporting of Behavior' (1994) 102 *Journal of Political Economy* 583.

<sup>2</sup> See GS Becker, 'Crime and Punishment: An Economic Approach' (1968) *Journal of Political Economy* 16 (2), 169; J Bentham, *The Theory of Legislation* (C K Ogden ed, London, Routledge, 1931).

<sup>3</sup> WPJ Wils, 'The Commission's New Method for Calculating Fines in Antitrust Cases' (1998) 23 *European Law Review* pp. 252-63, 252,

<sup>4</sup> GJ Stigler, 'A Theory of Oligopoly' (1964) 72 *Journal of Political Economy* 44, 46.

<sup>5</sup> M Polo, 'Internal Cohesion and Competition among Criminal Organisations' in G Fiorentini and S Peltzman (eds), *The Economics of Organised Crime* (Cambridge, Cambridge University Press, 1996).

<sup>6</sup> G Spagnolo, 'Optimal Leniency Programs' (2000) FEEM Working Paper No 42.2000, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=235092](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=235092).

driving it out of the market completely).<sup>7</sup> Cartels also employ sophisticated monitoring techniques to ensure the early detection of cheating by discouraging it and using compensatory payments to ensure the spoils of collusion are enjoyed equitably.<sup>8</sup>

Leniency policies are thought to disrupt cartel infringements by increasing the benefit of cheating. The offer of immunity only to the first firm to come forward undermines the trust that underpins the collusive agreement, thereby destabilising it. This asymmetric nature of the immunity offer makes it hard for cartel members to factor it into their agreement. Even where the cartel is profitable despite enforcement, firms may choose to take advantage of leniency following or coinciding with a period of cheating or where they feel confident they can increase their market share through competition.<sup>9</sup> Indeed, leniency has the consequence of giving the immune firm a competitive advantage in that the other firms must deal with significant fines. The fact that only one firm can receive immunity and the pressures this puts on trust between cartel members sparks off, it is argued, a 'race' to the competition authority. In principle, this means that leniency policies both uncover existing infringements of cartel laws and deter future infringements from occurring.

This characterisation of leniency policies permeates throughout the economic (and much of the legal) literature on cartel enforcement. It is also reflected in the language used by competition authority officials. The use of phrases like 'race to the authority' and talk of self-reporting as a result of penalties 'outweighing' collusive rewards or 'rewarding' those who self-report are not uncommon.<sup>10</sup> The European Commission argues that leniency 'has a very deterrent effect on cartel formation and it destabilizes the operation of existing cartels as it seeds distrust and suspicion among cartel members'.<sup>11</sup>

This vision of how leniency policies work makes three important assumptions about cartels:

1. Firms as Rational Monoliths—Firms that are party to a cartel are rational actors the behaviour of which is primarily determined by relative profit incentives. They make decisions about when to enter, leave or report a cartel at an institutional level.<sup>12</sup>

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<sup>7</sup> EJ Green and RH Porter, 'Noncooperative Collusion under Imperfect Price Information' (1984) 52 *Econometrica* 87.

<sup>8</sup> MC Levenstein and VY Suslow, 'What Determines Cartel Success?' (2006) 64 *Journal of Economic Literature* 43, 47–48.

<sup>9</sup> G Spagnolo, 'Divide et Impera: Optimal Leniency Programs' (2005) CEPR Discussion Paper No 4840, <http://ftp.zew.de/pub/zew-docs/veranstaltungen/rnic/papers/GiancarloSpagnolo.pdf>; J Chen and JE Harrington Jr, 'The Impact of the Corporate Leniency Program on Cartel Formation and the Cartel Price Path' in V Ghosal and J Stennek (eds), *The Political Economy of Antitrust, Contributions to Economic Analysis* (Bingley, Emerald Group Publishing Ltd, 2007).

<sup>10</sup> N Kroes, 'Delivering on the Crackdown: Recent Developments in the European Commission's Campaign against Cartels' (10th Annual Competition Conference at the European Institute, Fiesole, 13 October 2006) [http://europa.eu/rapid/press-release\\_SPEECH-06-595\\_en.pdf](http://europa.eu/rapid/press-release_SPEECH-06-595_en.pdf).

<sup>11</sup> European Commission, 'Leniency' (8 October 2013) <http://ec.europa.eu/competition/cartels/leniency/leniency.html>.

<sup>12</sup> See, eg, BH Kobayashi, 'Antitrust, Agency, and Amnesty: An Economic Analysis of the Criminal Enforcement of the Antitrust Laws against Corporations' (2001) 69 *George Washington Law Review* 715.

2. Predictability— Accurate and predictable information about the expected benefits of the cartel, as well as the likelihood of detection and the size and likelihood of punishment, is available to firms. Without this they would be unable to repeatedly weigh the expected costs and benefits so as to inform their behaviour accurately.
3. Deterrent Penalties and Credible Threat of Detection— Leniency policies are underpinned by penalties of sufficient magnitude to deter and by a credible threat of detection absent the leniency policy.

The elegance of theory and the fact that leniency policies are a far less resource intensive way of uncovering cartels (as compared to alternative detection tools) makes the policy hugely attractive to competition authorities. Spurred on by the apparent success in the United States (US) and the EU, leniency has now become a standard feature of cartel enforcement regimes throughout the world.

In order to test how leniency works in practice against the standard theoretical model, this paper addresses three key issues, drawing on evidence from European Commission cartel cases. The first is to assess what motivates firms to come forward and apply for leniency. Is the decision really a rational consequence of the benefits of leniency outweighing the benefits of being in a cartel? As part of this we will consider the extent to which it is possible to accurately make such an evaluation. The second is whether leniency is succeeding in destabilising *active* infringements. The incentives created by leniency should be disrupting cartels and making it difficult for new ones to form. The third is the extent to which it is accurate to characterise leniency as a ‘race’ to the competition authority. What does the decision to apply for leniency actually involve?

### 3. Leniency as a Rational Choice

There is little doubt that many cartels are formed in order to achieve artificially high prices and shield members from the pressures and uncertainties of competition. As such the decision to set up a cartel may be an entirely rational act. Yet some cartel arrangements appear to be less rational. For example, one of the peculiar characteristics of the Auction House cartel in the 1990s is that it involved just two companies (Sotheby’s and Christie’s) which operated in a relatively transparent market. In the circumstances they faced, the two firms could have achieved the outcome they desired by colluding tacitly; on its face therefore the decision to risk entering into a cartel agreement does not appear to be entirely rational.<sup>13</sup>

Auction Houses is one of a large number of cartels borne out of crisis. *Petrochemical*, *French Beef*, *German Banks*, *Seamless Steel Tubes* and *Carbonless Paper* cartels are all other examples of cartel agreements formed as a reaction to a downturn in the industry.<sup>14</sup> The decision to form a cartel in such circumstances was not necessarily rational given that exit from the industry by one or more firms appeared inevitable in at least

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<sup>13</sup> See generally C Mason, *The Art of the Steal: Inside the Sotheby’s–Christie’s Auction House Scandal* (New York, Berkley Publishing, 2005).

<sup>14</sup> A Stephan, ‘Price Fixing in Crisis: Implications of an Economic Downturn for Cartels and Enforcement’ (2012) 35 *World Competition* 511, 514.

some of these cases. This was the case in the Carbonless Paper cartel, which involved an industry in chronic decline due to new copying technology.

Regardless of the motivation and level of rationality, there are a number of barriers to firms making calculated choices about joining, leaving, cheating and reporting a cartel.

### 3.1 Predictability

A sophisticated cartel that is well administered and monitored may have a good idea of how much extra profit can be achieved and the extent to which each cartel member is adhering to the cartel arrangement. The theory becomes problematic when it comes to expectations about detection and punishment. As Wils points out, it is unrealistic to think of cartels as undertaking some detailed econometric cost–benefit analysis. Instead he suggests firms will make an approximate estimation based as much on perception as on empirics.<sup>15</sup> Thus the perceived risk of punishment may increase where an authority raises the size of cartel fines or increases the number of completed cases, and where these developments are well publicised.

The European Commission deliberately maintains a policy of uncertainty when it comes to the calculation of fines.<sup>16</sup> Former European Commissioner for Competition Policy Neelie Kroes said that ‘I cannot see how allowing potential infringers to calculate the likely cost/benefit ratio of a cartel in advance will somehow contribute to a sustained policy of deterrence and zero tolerance’.<sup>17</sup> Indeed the 2006 guidelines on the calculation of cartel fines in Europe<sup>18</sup> had the somewhat paradoxical aim of increasing the transparency but not the predictability of cartel fines.<sup>19</sup> This policy is consistent with the European Court of Justice’s approach to the predictability of fines. In *BPB plc v Commission* the Court ruled:

[I]t is important to ensure that fines are not easily foreseeable by economic operators. If the Commission were required to indicate in its decision the figures relating to the method of calculating the amount of fines, the deterrent effect of those fines would be undermined. If the amount of the fine were the result of a calculation which followed a simple arithmetical formula, undertakings would be able to predict the possible penalty and to compare it with the profit that they would derive from the infringement of the competition rules.<sup>20</sup>

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<sup>15</sup> WPJ Wils, ‘Optimal Antitrust Fines: Theory and Practice’ (2006) 29 *World Competition* 183.

<sup>16</sup> See Organisation for Economic Co-operation and Development, ‘Leniency for Subsequent Applicants’, DAF/COMP(2012)25 (2012) 6, [www.oecd.org/competition/Leniencyforsubsequentapplicants2012.pdf](http://www.oecd.org/competition/Leniencyforsubsequentapplicants2012.pdf).

<sup>17</sup> N Kroes, ‘The First Hundred Days’ (40th Anniversary of the Studienvereinigung Kartellrecht 1965-2005, International Forum on European Competition Law, Brussels, 7 April 2005) 6, [http://europa.eu/rapid/press-release\\_SPEECH-05-205\\_en.pdf](http://europa.eu/rapid/press-release_SPEECH-05-205_en.pdf).

<sup>18</sup> See Guidelines on the method of setting fines imposed pursuant to Article 23(2)(a) of Regulation No 1/2003 [2006] OJ C210/2.

<sup>19</sup> See discussion in: A Scordamaglia-Tousis, *EU Cartel Enforcement: Reconciling Effective Public Enforcement with Fundamental Rights*, International Competition Law Series, (Alphen aan den Rijn, Kluwer Law international, 2013) § 8.7

<sup>20</sup> Case T-53/03, *BPB plc v Commission* [2008] ECR II-1333, para 336. See also Case T-68/04, *SGL Carbon AG v Commission* [2008] ECR II-2511, para 32.

This will strike some readers as peculiar and clearly at odds with much of the deterrence theory underpinning cartel enforcement, but there are at least two rationales for unpredictable fines. The first, as noted above, is that allowing fines to be predictable could embolden cartel arrangements that are able to ensure the expected benefits of collusion outweigh the likely penalty and the incentives created by leniency. Second, research in criminology shows that the deterrent effect of uncertain interventions, such as police crackdowns, result in an initial spike in deterrence followed by a drop, which is caused by criminals initially overestimating the effect of the change in policy or by their aversion to uncertainty.<sup>21</sup>

This policy of transparency without predictability makes it difficult for cartel members to accurately weigh the benefits of leniency against some calculation of likely cost. As noted above, the ability to make this assessment is an important element in the theory that underpins leniency policies.

### 3.2 Are Cartels Formed by Individuals or Firms?

A further problem with the rational choice aspect of leniency policies is that individuals, not companies, generally form cartels. Assuming there is a decent level of awareness within the business community about antitrust rules, any decision to form and operate a cartel must be clandestine and deliberate. It is generally unlikely that a modern cartel would be organised (at least in the US or Europe) at an institutional level, in the way that whole industries were once cartelised during historic periods when such arrangements were tolerated or even encouraged. As Moran argues in relation to fraud, the ‘smoked filled room’ image is a highly apt forum for corporate criminality, since firms as structured institutions or bureaucracies are by their nature rule-following entities.<sup>22</sup>

Empirical evidence in fact suggests that cartels are organised by small groups of employees who operate at many different levels of the firm.<sup>23</sup> Table 1 lists 40 international cartels prosecuted in either or both of Europe and the US between 1998 and 2009, in which the positions of employees responsible were published in the decisions of the European Commission, the press releases of the US Department of Justice or in the media.

**Table 1:** International cartels prosecuted in either or both of Europe and the US between 1998 and 2009 and the positions of the employees responsible<sup>24</sup>

YEAR	CARTEL	POSITION(S) OF EMPLOYEES INVOLVED
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<sup>21</sup> LW Sherman, ‘Police Crackdowns: Initial and Residual Deterrence’ in M Tonry (ed), *Crime and Justice: A Review of Research*, vol 12 (Chicago, University of Chicago Press, 1989); TA Loughran and others, ‘On Ambiguity in Perceptions of Risk: Implications for Criminal Decision Making and Deterrence’ (2011) 49 *Criminology* 1029.

<sup>22</sup> M Moran, ‘Investor Protection and the Culture of Capitalism’ in L Hancher and M Moran (eds), *Capitalism, Culture, and Economic Regulation* (Oxford, Oxford University Press, 1989).

<sup>23</sup> The one thing they all have in common is decision-making power over some aspect of price, output or geographical sales.

<sup>24</sup> See A Stephan, ‘See No Evil: Cartels and the Limits of Antitrust Compliance Programs’ (2010) 31 *Company Lawyer* 231.



2009	LCD SCREENS*†	President of Subsidiary; Executive Vice President of Sales and Marketing; Vice President of Sales Planning.
2008	AIR CARGO†	Director of Sales and Marketing; Commercial General Manager
2007-08	MARINE HOSES*†	President; Product Area Manager; Managing Director; Director, Sales and Marketing; Regional Sales Manager.
2007	PASSENGER FUEL SURCHARGE (BA/VIRGIN)	Head of Sales; Commercial Director; Head of Communications.
2007	DUTCH BEER*	Managing Directors.
2007	LIFTS AND ESCALATORS	National Sales Managers.
2004-07	DRAM†	Vice President, Sales & Marketing; Head of Global Sales.
2006	ACRYLIC GLASS (METHACRYLATES)	Regional Sales Managers; Senior Management.
2006	HYDROGEN PEROXIDE	Heads of Department; General manager; CEO; Marketing Managers.
2005	RUBBER CHEMICAL*†	Accounts Managers; Sales Managers.
2005	INDUSTRIAL BAGS	Accounts Managers.
2005	ITALIAN RAW TOBACCO*	Purchasing managers; Chairmen.
2005	INDUSTRIAL THREAD	General Managers; Export and Regional Managers.
2005	MCAA CHEMICALS†	Product Managers; Sales Managers; Marketing Managers.
2004	SPANISH RAW TOBACCO*	Chairmen; Local Purchasing Managers.
2003	TANKER SHIPPING†	Vice President; CEO; Co-Managing Director.
2003	INDUSTRIAL COPPER TUBES*	Vice President; Senior Management.
2003	SORBATES†	Executive Salesmen.
2002	FOOD FLAVOUR	President; General Managers.
2002	SPECIALITY GRAPHITES	Top level management; Regional management; National management.
2002	AUCTION HOUSES†	Chairmen.
2002	DUTCH INDUSTRIAL GASES*	CEOs; General managers.
2002	ANIMAL FEED METHIONINE*	President; CEO; General Manager.
2002	LOMBARD CLUB*	Regional Managers; Chief Executives.
2001	CARBONLESS PAPER	Chief Executives; Commercial Directors; Regional Sales Managers.
2001	ZINC PHOSPHATE	Managing Directors; General Managers; Sales Managers; Marketing Managers.

2001	GERMAN BANKS	Senior Executives.
2001	CITRIC ACID*	Vice President; President of Divisions; Heads of Marketing; General Managers.
2001	INTERBREW & ALKEN-MAES*	General Managers.
2001	LUXEMBOURG BREWERS*	General Managers.
2001	VITAMINS*†	President of Divisions; Division Managers; Marketing Directors.
2001	SODIUM GLUCONATE	Vice President; General Managers; Sales Managers; Marketing Managers.
2001	GRAPHITE ELECTRODES*†	President; Chairman; Senior Vice President; General Managers; Local Sales Managers.
2001	SAS/MAERSK AIR	Project Managers.
2000	LYSINE (AMINO ACIDS)*†	Executive Vice President; Group Vice President.
1999	SEAMLESS STEEL TUBES	Marketing Managers; Presidents.
1998	ALLOY SURCHARGE	Sales Managers.
1998	GREEK FERRIES	Senior Executives.
1998	PRE-INSULATED PIPES	Directors; Sales Managers; General Managers.
1998	BRITISH SUGAR	Retail Sales Managers.

\* cases with some involvement of subsidiary companies.

† cases where at least one employee has been imprisoned in the US.

The table shows that cartels can be organised at various levels of an organisation, from sales and marketing managers right up to senior executives. It also appears to be common for the cartel to be organised by a subsidiary. Each of these groups of individuals will have different expectations about the likely rewards and risks of entering into a cartel. They will also have different levels of information available to them about whether the cartel is being adhered to, the size of sanctions and the expected likelihood of detection — all of which will affect the decisions they make about remaining in, cheating on and/or reporting a cartel.

A further important consequence of cartels being organised by individuals and not firms is that the threat underpinning most leniency policies— administrative fines against the undertaking — do not constitute a direct cost for these individual decision-makers. By the time the cartel is caught, fines are imposed and subsequent appeals are held, the individuals responsible might very well no longer work for the firm. It is for this reason that some advocate the use of sanctions against individuals as a complement to civil enforcement against firms.<sup>25</sup> Fines do incentivise firms to invest in internal compliance

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<sup>25</sup> A Stephan, 'How Dishonesty Killed the Cartel Offence' (2011) 6 *Criminal Law Review* 446; A Nikpay and D. Rawling 'Cartel Conduct Under UK Law' (2012) *Competition Law International*, Vol 8, Number 1

and improved auditing measures, but the extent to which they influence the decision to form a cartel may be questioned.<sup>26</sup>

The fact that cartel decisions are, these days, typically made by individuals and not corporations raises an important question regarding the on-going robustness of the theory which underpins leniency policies. As noted above the theory assumes that the decision on whether to enter/stay in a cartel or exit/report to an authority is made by corporations assessing the cost-benefits to them. Whether and to what extent the theory holds when decisions are taken by individuals is difficult to assess in the abstract and requires more research. The next question this paper turns to is whether, despite these uncertainties, leniency policies used in regimes which rely exclusively on corporate fines succeed in destabilising and deterring cartels.

#### **4. Do Leniency Policies Destabilise and Deter Cartels?**

It has been argued by the European Commission that leniency has ‘a very deterrent effect on cartel formation and it destabilizes the operation of existing cartels’.<sup>27</sup> In order for this to hold true, the incentives created by leniency must be strong enough to outweigh a cartel member’s expectations about future profits from staying in the cartel. The offer of immunity is only as strong as the size of the penalty otherwise faced and the credible threat of detection through investigations.<sup>28</sup>

##### **4.1 Sanctions and the Threat of Detection**

In principle, the level of sanctions imposed on cartels and the existence of a credible threat of detection (in the absence of leniency) should be inducing self-reporting among members of cartels and discouraging new cartels from forming. In reality, both the size of cartel sanctions and the threat of detection appear to be too low in many jurisdictions to clearly outweigh the benefits of forming or remaining in a profitable and well-organised cartel.

Cartel fines in the EU, the US and elsewhere have increased to levels that would have been unthinkable a decade ago. In the period before 2000, EU cartel fines averaged €40 million per infringement decision. In the period between 2000 and 2006, that increased to €144 million per infringement decision. For the most recent period between 2007 and 2013, the average stood at €348 million per infringement decision. Despite this exponential increase in cartel fines, there is a strong body of economic literature to suggest that they rarely exceed the illegal profits that might have been enjoyed by the cartel. Combe and Monnier have analysed a sample of 64 EU cartel cases and they suggest that cartel fines are unlikely to outweigh illicit gains regardless of the probability

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<sup>26</sup> *ibid.*

<sup>27</sup> European Commission (n 11).

<sup>28</sup> London Economics, ‘An Assessment of Discretionary Penalties Regimes: Final Report’ (Prepared for the Office of Fair Trading, OFT1132, October 2009) 25, <http://londoneconomics.co.uk/wp-content/uploads/2011/09/30-An-assessment-of-the-UK-Discretionary-Penalties-Regime.pdf>.

of detection.<sup>29</sup> This is supported by previous studies undertaken by Connor, which recommended massive increases in the fines imposed by both the US Department of Justice and the European Commission.<sup>30</sup>

Although fines continue to increase, they are still well within the 10 per cent annual worldwide turnover cap put in place in the EU to protect undertakings from excessively high fines.<sup>31</sup> Moreover, it has been suggested by a number of academics that truly optimal fines (consistent with the economic paradigm of deterrence) would actually cause many cartel members to become insolvent.<sup>32</sup> This is because in order to be destabilising and dissuasive, cartel fines must be high enough to outweigh the *expected* gains from a cartel *despite* the fact that not every cartel is detected. If only half of the existing cartels are thought to be uncovered, fines need to be at least double the expected gain if they are to be effective (because the probability of detection is one in two). Studies estimating the probability of detection can be criticised for largely being stabs in the dark (which in turn means that prospective cartel members also have little idea), but even the most optimistic studies place the detection rate at less than one fifth, meaning that cartel fines should be at least five times the illegal profit cartel members expect to achieve.<sup>33</sup> The size of theoretically optimal sanctions is further inflated by the fact that international cartels may not face adequate punishment in every jurisdiction in which they operate or where the decision to form a cartel is taken by a small number of individual decision-makers who may be less likely to be deterred by a corporate fine (as suggested above).

The credible threat of detection that is meant to underpin an effective leniency policy may be weak too. In reality, infringements uncovered without the help of a leniency policy will normally be guided by complaints from customers, the existence of a cartel in a neighbouring industry or popular discontent with activities in a particular market (sometimes expressed through the media) to investigate a particular sector. For example, around half the cartel fines imposed by the European Commission between 2000 and

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<sup>29</sup> E Combe and C Monnier, 'Fines against Hard Core Cartels in Europe: The Myth of Overenforcement' (2011) 56 *Antitrust Bulletin* 235.

<sup>30</sup> See JM Connor and RH Lande, 'The Size of Cartel Overcharges: Implications for U.S. and EU Fining Policies' (2006) 51 *Antitrust Bulletin* 983; See also Connor's most recent study: John M. Connor, 'Price-Fixing Overcharges: Revised 3<sup>rd</sup> Edition' (February 2014). Available at SSRN: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2400780](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2400780)

<sup>31</sup> Joined Cases C-100/80 to 103/80 *Musique Diffusion Française SA v Commission* [1983] 3 CMLR 221, 265.

<sup>32</sup> C Craycraft, JL Craycraft and JC Gallo, 'Antitrust Sanctions and a Firm's Ability to Pay' (1997) 12 *Review of Industrial Organization* 171; WPJ Wils, *The Optimal Enforcement of EC Antitrust Law: Essays in Law and Economics*, European Monographs (The Hague, Kluwer Law International, 2002) 39; A Stephan, 'The Bankruptcy Wildcard in Cartel Cases' [2006] *Journal of Business Law* 511, 515.

<sup>33</sup> PG Bryant and EW Eckard, 'Price Fixing: The Probability of Getting Caught' (1991) 73 *Review of Economics and Statistics* 531; A Golub, J Detre and JM Connor, 'The Profitability of Price Fixing: Have Stronger Antitrust Sanctions Deterred?' (International Industrial Organization Conference, Atlanta, 8–9 April 2005) [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1188515](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1188515); E Combe, C Monnier and R Legal, 'Cartels: The Probability of Getting Caught in the European Union' (2008) Cahiers de Recherche PRISM-Sorbonne, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1015061](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1015061); PL Ormosi, 'A Tip of the Iceberg? The Probability of Catching Cartels' (2014) 29 *Journal of Applied Econometrics* 549.

2008 concerned parts of the chemicals industry.<sup>34</sup> These infringements were mostly connected through the common membership of key chemicals firms and can be traced back to the Lysine cartel uncovered in the 1990s.<sup>35</sup> This and other examples of competition authorities uncovering clusters of related cartels over a period of many years make it less likely that cartel investigations are truly random in their reach across the economy. There may be thousands of cartelised industries that have never seen any form of competition law enforcement action.

The credible threat of detection may be further undermined by an over-reliance on leniency. It is very tempting for competition authorities to focus their resources on leniency applications. In principle, this should allow them to complete more infringement decisions, as leniency cases are less costly and time consuming than ‘own-initiative’ investigations. In the period since it was introduced in 1996, the proportion of cases uncovered through the EU leniency policy has steadily increased to around 75 per cent.<sup>36</sup> According to the European Commission’s published press releases and infringement decisions, there have in fact only been around 24 EU cartel cases since 2000 that were not revealed by a cartel member. Given that competition law potentially applies to many thousands of different European markets, it is suggested that this number represents a lower rate of detection than is necessary for optimal deterrence. This is also significant because the literature on behaviour and risk suggests a tendency for decision-makers to simplify prospects and to discard events with a very low probability of occurring.<sup>37</sup>

It is also clear that cartels continued to be formed after the introduction of leniency by the EC. The vast majority (69 per cent) of completed hardcore cartel cases in Europe concerned arrangements that were entered into before leniency was introduced in 1996, but around a third came about *after* its introduction. Eleven cases even have published start dates that followed the important reforms made to the European Commission’s Leniency Notice in 2002.<sup>38</sup> Assuming awareness of these reforms, this suggests that despite the incentives created by leniency, prospective cartel members are still able to reach a consensus on collusive agreements and have, *ex ante*, positive expectations about the net benefits of anti-competitive behaviour. They are also presumably confident that

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<sup>34</sup> A Stephan, ‘An Empirical Assessment of the European Leniency Notice’ (2009) 5 *Journal of Competition Law & Economics* 537.

<sup>35</sup> *ibid.*

<sup>36</sup> This is based on the database of EU cartel decisions maintained by one of the present authors (Andreas Stephan). It is also acknowledged in a report prepared by the European Commission. See European Commission, ‘Ten Years of Antitrust Enforcement under Regulation 1/2003’ (Commission Staff Working Document) SWD(2014) 230/2, para 16, [http://ec.europa.eu/competition/antitrust/legislation/swd\\_2014\\_230\\_en.pdf](http://ec.europa.eu/competition/antitrust/legislation/swd_2014_230_en.pdf).

<sup>37</sup> D Kahneman and A Tversky, ‘Prospect Theory: An Analysis of Decision under Risk’ (1979) 47 *Econometrica* 263.

<sup>38</sup> See Commission notice on immunity from fines and reduction of fines in cartel cases [2002] OJ C45/3. The Leniency Notice was revised again in 2006. The 11 cases were: Canned Mushrooms(2014), Water Management Products(2012), Flexible Polyurethane Foam (2014), Interest Rate Derivatives(2013), Pain Killers(2013), Bananas II(2011), Reagents(2009), Refrigeration Compressors(2008), Steel Abrasives(2014), Flat Glass(2007) and Power Exchanges(2014).

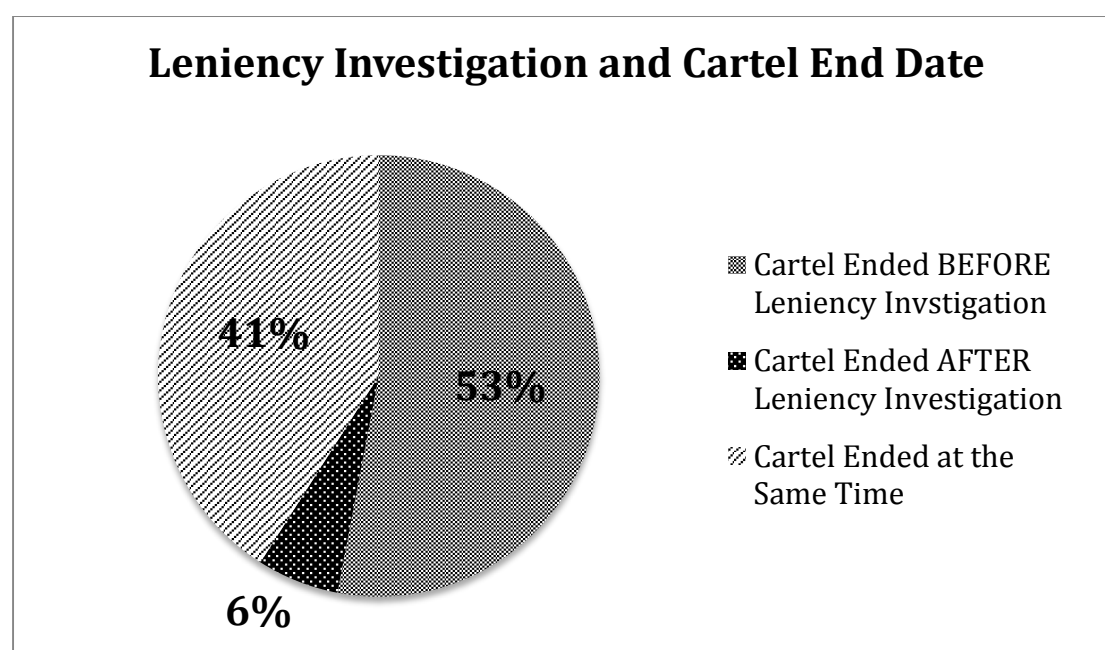
those benefits are sufficient to prevent a cartel member self-reporting in return for immunity.

Despite the limitations outlined above, the EU leniency policy has clearly been successful at uncovering a very significant number of cartel infringements, and a large number of competition law jurisdictions around the world have followed suit in embracing such policies as a key enforcement tool. This paper now turns to the question of why cartel members are self-reporting despite the apparent enforcement weaknesses outlined above.

## 4.2 Is Leniency Disrupting Active Cartels?

A straightforward way of testing this question empirically is to compare the date on which cartel cases were revealed through leniency with the date on which the infringement came to an end. If the EU leniency policy is indeed destabilising active cartels, we would expect the published end date to come after the investigation was opened. Taking only EU cartel cases uncovered through leniency before 2014, Table 2 illustrates this relationship based on 43 EU cartel cases revealed through the leniency policy between 2002 and August 2014, where published information is available about the date the investigation was opened and the date the cartel infringement came to an end.

**Table 2:** cartel end dates in 43 EU cartel cases revealed through the leniency policy between 2002 and August 2014<sup>39</sup>



The empirical evidence suggests that only in two cases did the reporting through leniency clearly occur while the cartel was still operating. It is hard to draw conclusions from the cartels that ended at around the same time as the leniency application, but in the majority of cases (23) in this sample the cartel ceased to operate *prior* to a firm self-reporting in return for immunity. This finding is consistent with work by Brenner, who found no

<sup>39</sup> A full list of cases appears in Appendix 1. Data was also taken from Stephan's database of EU cartel decisions.

evidence that the 1996 Leniency Notice destabilised cartels.<sup>40</sup> It is also consistent with the work of Spagnolo, who describes current leniency policies as ‘moderate’ in their impact in that they simply reduce or cancel the punishment in return for co-operation. He advocates paying revealing firms a reward using the sanctions imposed on the remaining firms, because there are otherwise ‘sufficient expected gains ... to both curb incentives to cheat and compensate for the probability of being caught and sanctioned’.<sup>41</sup> While this suggestion is likely to be unacceptable from a legal and political perspective, it illustrates how weak leniency incentives might be.

The evidence also suggests that reporting may be being used strategically. An empirical assessment of the European Leniency Notice by one of this paper’s authors found that EU cartel enforcement had largely succeeded in uncovering failed cartels. The infringements had already broken up for a variety of reasons, including new entry into the market and the long-term decline of some industries.<sup>42</sup> Cartels are also inherently unstable and can be prone to poor administration and cycles of arrangements breaking down and then re-forming.<sup>43</sup> It is not uncommon for cartels to have brief price wars or for cartel members to under-report their production levels.<sup>44</sup> Cartels are commonly broken up by economic shocks. A slump in demand, for example, makes it hard for the cartel to determine whether prices are falling as a result of firms cheating on the agreement or simply due to lower demand.<sup>45</sup> This may be the case even where a cartel has sophisticated systems for administration and monitoring.

When a cartel breaks up, its former participants will once again seek to gain a competitive advantage over their competitors. Leniency can be used as a way of raising rivals’ costs in the period following the break-up of the cartel.<sup>46</sup> The immunity applicant’s competitors are left to face significant cartel fines, albeit reduced to varying degrees in return for any co-operation they provide to the competition authority.

It also appears that some firms are also using leniency to reduce the cost of punishment when it becomes inevitable. In this respect, they would be behaving in a similar fashion to

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<sup>40</sup> S Brenner, ‘An Empirical Study of the European Corporate Leniency Program’ (2009) 27 *International Journal of Industrial Organization* 639.

<sup>41</sup> Spagnolo, ‘Optimal Leniency Programs’ (n 6) 3–4.

<sup>42</sup> Stephan, ‘An Empirical Assessment’ (n 34). See also Office of Fair Trading, ‘The Impact of Competition Interventions on Compliance and Deterrence: Final Report’ (OFT1391, December 2011) 36,

[http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.oft.gov.uk/shared\\_of\\_t/reports/Evaluating-OFTs-work/oft1391.pdf](http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.oft.gov.uk/shared_of_t/reports/Evaluating-OFTs-work/oft1391.pdf).

<sup>43</sup> Levenstein and Suslow (n 8).

<sup>44</sup> See, eg, the discussion of the Lysine cartel in JM Connor, ‘Global Cartels Redux: The Lysine Antitrust Litigation (1996)’ in JE Kwoka Jr and LJ White (eds), *The Antitrust Revolution: Economics, Competition, and Policy*, 6th edn (New York, Oxford University Press, 2014).

<sup>45</sup> M Motta, *Competition Policy: Theory and Practice* (Cambridge, Cambridge University Press, 2004) 146; J Haltiwanger and JE Harrington Jr, ‘The Impact of Cyclical Demand Movements on Collusive Behavior’ (1991) 22 *RAND Journal of Economics* 89. See also Stephan, ‘Price Fixing in Crisis’ (n 14) 513.

<sup>46</sup> CJ Ellis and WW Wilson, ‘Cartels, Price-Fixing, and Corporate Leniency Policy: What Doesn’t Kill Us Makes Us Stronger’, [https://editorialexpress.com/cgi-bin/conference/download.cgi?db\\_name=IIOC2008&paper\\_id=339](https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=IIOC2008&paper_id=339).

criminal defendants who plead guilty once they are caught in order to reduce their sentence.

As noted above, the European Commission has acknowledged that a great number of early leniency cases concerned the chemicals industry. However, it is also the case that there have been an increasing number of cases where an investigation into one market has led to leniency applications in related markets.<sup>47</sup> As such it would appear that the Commission's previous investigations may very well have caused closely related cartels to cease their operations in the expectation that detection would be very likely.

It is worth noting in this regard that the reforms made to the EU leniency policy in 2002 included the availability of immunity to the first self-reporting firm, even where an industry was already under investigation.<sup>48</sup> Motta and Polo observed a sharp increase in leniency reporting in the US when a similar reform was made there in 1993.<sup>49</sup> This change in leniency policy may simply have attracted these sorts of cases (where detection is very likely) rather than helping significantly to achieve wider detection and deterrence. More research needs to be done in this area before firm conclusions can be reached. However, it would seem safe as a matter of logic to argue that if the sanction and threat of detection are significant enough, firms will desist from cartelising in the first place, not simply wait until detection becomes imminent before reporting their activities.

The uncovering of cartels after they have formed and failed suggests that leniency policies, at least in regimes which rely exclusively on fines, may not be destabilising active cartels in the way predicted by the theoretical literature and may, as designed, only be of limited deterrent effect.

Regardless of motivations for leniency applicants in coming forward, the question that remains is the extent to which applications for leniency can be characterised as a 'race'.

## 5. Is There Really a 'Race' to the Competition Authority?

The decision to apply for leniency will generally be taken by the undertaking's executive board, which will be made up of individuals who are unlikely to have had any direct involvement in the cartel agreement. An undertaking that takes its obligations under competition law seriously will have a corporate compliance programme in place. Among other activities, this will involve training sessions, reporting hotlines and possibly the routine auditing of employees' communications and pricing decisions. When information is uncovered that suggests a possible infringement of competition law within its organisation, the board will (on advice from its competition lawyers) have to make the difficult decision of whether to approach the competition authority. Such information may simply amount to a small number of recklessly worded communications, or it could be a smoking gun pointing to the existence of a significant infringement.

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<sup>47</sup> See European Commission, 'Ten Years' (n 36) at paras 18, 20.

<sup>48</sup> See Stephan, 'An Empirical Assessment' (n 34).

<sup>49</sup> M Motta and M Polo, 'Leniency Programs and cartel Prosecution' *International Journal of Industrial Organization*, 21 (2003), pp 347-379



When considering whether to approach a competition authority, the board will have to take into account not only whether sufficient information has been uncovered to substantiate the application but also the wider consequences of making an approach. Some of these consequences are relatively immediate and quantifiable, such as the time and use of employee resources that will be needed to carry out a proper investigation into the conduct being reported, and the fees likely to be incurred in employing legal and economic advisors. Other consequences include the reputational harm that would result from an infringement finding by the competition authority and the potential for damages in follow-on litigation. Although less immediate and quantifiable, these risks are no less significant. Indeed, given the recent action by the EU to promote damages actions for competition law infringements across the Member States, there is increasing potential for consequential financial harm to a company as a result of bringing the infringement to the attention of a competition authority.<sup>50</sup>

Further, it is unlikely that the board will be making its decision in optimal conditions. Regardless of the level at which the cartel is organised, the individuals involved will usually have gone to great lengths to hide the infringement from both their customers and others within the firm. Such efforts are documented in numerous EU cartel decisions and include: communicating through private email accounts and unregistered mobile phones using encrypted messages, avoiding the involvement of secretarial or support staff, avoiding the use of documents or destroying them on a regular basis and claiming cash or paying for meetings associated with cartel meetings or hiding them as other expenses.<sup>51</sup> In one case, all evidence of the cartel was so well suppressed that the European Commission admitted that ‘it is not possible to declare with absolute certainty that all the participants have put an end to the infringement’.<sup>52</sup> It is also notable that cartel meetings (where they occur) are held in innocuous locations, including hotel rooms, conference rooms, restaurants and on the fringes of trade association meetings.<sup>53</sup> In a recent report, the Commission noted how cartel infringements are becoming increasingly sophisticated in their use of such hidden communications:

Nowadays a handwritten ‘smoking gun’ in hard copy form is unlikely to be found on the desk of one of the company’s employees. Rather than finding such documents ...the trend is more towards the piecing together of a huge number of documents to establish the infringement ... [that are] now almost exclusively in electronic form...<sup>54</sup>

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<sup>50</sup> See Council Directive 2013/0185 of 24 October 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,

[http://ec.europa.eu/competition/antitrust/actionsdamages/damages\\_directive\\_final\\_en.pdf](http://ec.europa.eu/competition/antitrust/actionsdamages/damages_directive_final_en.pdf).

<sup>51</sup> See Stephan, ‘See No Evil’ (n 24) 6fn 25, giving examples of: OMP/38.889 *Gas Insulated Switchgear* [2008] OJ C5/7 at 10; *Graphite Electrodes* (Case COMP/E-1/36.490) Commission Decision 2002/271/EC [2002] OJ L100/1 at para 59; *Zinc Phosphate* (Case COMP/E-1/37.027) Commission Decision 2003/437/EC [2003] OJ L153/1 at para 253.

<sup>52</sup> *Carbonless Paper* (Case COMP/E-1/36.212) Commission Decision 2004/337/EC [2004] OJ L115/1 at para 368.

<sup>53</sup> See Stephan, ‘See No Evil’ (n 24) 6.

<sup>54</sup> European Commission, ‘Ten Years’ (n 36) para 21.

The difficulties faced by the competition authority also pose problems for the firm when it seeks to gather the information necessary to make a decision about a possible approach to the authority and to ensure such an application would meet the requirements of the leniency policy.

The European Commission's 2006 consultation on leniency gave many law firms the opportunity to share their experiences of helping clients prepare leniency applications. Several firms noted how internal investigations typically involve interviews with many current and former employees, as well as reviewing thousands of electronic documents, sometimes located in a number of different countries.<sup>55</sup> It is a requirement of the European Commission's Leniency Notice that these individuals be available for interviews with the Commission as part of the firm's continuous co-operation with the authority.<sup>56</sup> Others noted the experience of individuals destroying evidence and refusing to co-operate with their employer.<sup>57</sup> Since leniency includes an obligation not to falsify, destroy or conceal evidence, the actions of a rogue employee or director could jeopardise the firm's leniency application despite all its attempts, as an institution, to co-operate fully.<sup>58</sup>

The threat of criminal prosecution in some EU Member States could, in certain circumstances, also hinder a firm's ability to gather evidence for a leniency application.<sup>59</sup> Although criminal offences, as under s188 of the Enterprise Act 2002 (UK), do allow for immunity to the employees of the first firm to come forward, they do not, for obvious reasons, necessarily offer any ex-ante incentive for culpable individuals to come forward once the immunity prize has gone. So whereas the second firm to come forward might receive a 50 per cent discount in fines, its employees will not receive a corresponding discount in a criminal sentence (although any co-operation will be taken into account as mitigation in sentencing). Unsure of whether they will get immunity and keen to avoid

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<sup>55</sup> 'Comments of the ABA Section of Antitrust Law and Section of International Law in Response to the Commission of the European Communities' Request for Public Comment on the Draft Commission Notice on Immunity from Fines and Reduction in Fines in Cartel Cases' (November 2006) [http://ec.europa.eu/competition/cartels/legislation/files\\_leniency\\_consultation/aba.pdf](http://ec.europa.eu/competition/cartels/legislation/files_leniency_consultation/aba.pdf).

<sup>56</sup> Commission Notice on Immunity from fines and reduction of fines in cartel cases [2006] OJ C298/17, para 12.

<sup>57</sup> Linklaters, 'Response to the European Commission's Draft Leniency Notice Published on 29 September 2006' (October 2006) [http://ec.europa.eu/competition/cartels/legislation/files\\_leniency\\_consultation/linklaters.pdf](http://ec.europa.eu/competition/cartels/legislation/files_leniency_consultation/linklaters.pdf); Crowell & Moring, 'Comments on the Draft Commission Notice on Immunity from Fines and Reduction of Fines in Cartel Cases' (27 October 2006) [http://ec.europa.eu/competition/cartels/legislation/files\\_leniency\\_consultation/crowell.pdf](http://ec.europa.eu/competition/cartels/legislation/files_leniency_consultation/crowell.pdf); Baker & McKenzie, 'Response to Consultation on the Draft Leniency Notice' (26 October 2006) [http://ec.europa.eu/competition/cartels/legislation/files\\_leniency\\_consultation/bakermckenzie.pdf](http://ec.europa.eu/competition/cartels/legislation/files_leniency_consultation/bakermckenzie.pdf).

<sup>58</sup> Freshfields Bruckhaus Deringer, 'Response Dated 27 October 2006 to Commission of the European Communities DG Competition Consultation on the Draft Commission Notice on Immunity from Fines and Reduction of Fines in Cartel Cases Published on 29 September 2006' (27 October 2006) [http://ec.europa.eu/competition/cartels/legislation/files\\_leniency\\_consultation/fbd.pdf](http://ec.europa.eu/competition/cartels/legislation/files_leniency_consultation/fbd.pdf).

<sup>59</sup> Shearman & Sterling LLP, 'Comments on the Draft Commission Notice on Immunity from Fines and Reduction of Fines in Cartel Cases' (27 October 2006) [http://ec.europa.eu/competition/cartels/legislation/files\\_leniency\\_consultation/shearman.pdf](http://ec.europa.eu/competition/cartels/legislation/files_leniency_consultation/shearman.pdf).

incriminating themselves, these employees may well seek independent legal representation and refuse to co-operate with their employer.

The difficulties for the board in determining whether to apply for leniency and in ensuring that all employees co-operate sufficiently during the leniency process are compounded by the misalignment in terms of incentives between the board (acting on behalf of the company) and the employees. As discussed above, the threat of a corporate fine in the absence of co-operation will have little resonance for individual employees. On the other hand, the possibility of dismissal by the company or potential individual sanction in the event of an infringement finding may well actively incentivise the employee not to co-operate.

Given all of the above, a board facing the decision whether to approach an authority and be the first to report conduct will face considerable cost and uncertainty. On the one hand, it will bring down upon itself an investigation which will certainly take significant time, use up internal resources and entail large legal and economic fees. Coupled with this is the fact that no board can be 100 per cent certain that all employees will co-operate to the required degree to guarantee that immunity is ultimately granted. On the other hand, if the Board does not report, it cannot exclude the possibility that another company may well do so and will gain immunity from the corporate fine (and in the US from triple damages). In either scenario, the company will face reputational harm and potential follow-on damages, each likely to result in future loss. The decision whether to apply for leniency will entail balancing these competing uncertainties.

## 5. Conclusion

This paper has sought to assess the robustness of the assumptions made by much of the existing theoretical literature on leniency policies, giving a glimpse of the uncertainties and complexities that apply to leniency in practice. It is difficult to predict, *ex ante*, the proportion of firms able to balance the expected benefits of joining a cartel against the likely sanction and probability of detection, as these last two factors may be hard to estimate with any accuracy. In addition, the decision to form a cartel is not generally made by the firm as a rational monolith, but by individuals operating outside its institutional framework in a deliberate and clandestine manner.

In the absence of sanctions against the individuals responsible, the deterrent effect of corporate fines, imposed some years after the infringement was committed, may be limited and may not outweigh the likely cartel gains. There is also an apparent over-reliance on leniency as a method of detection, leaving only a weak credible threat of detection through investigations alone. Empirical evidence suggests that far from disrupting active cartels, leniency may have been used largely to report infringements that had ceased to exist or where they were likely to be detected — especially because of investigations in neighbouring industries.

It is also somewhat misleading to describe the leniency process as a ‘race’ to the competition authority. Before making the decision to approach the competition authority, the firm must complete its own internal investigation in the face of increasingly

sophisticated methods employed by individuals seeking to hide their cartel activities. Applying for leniency is fraught with uncertainties and dangers that the firm's executive board must balance against the incentive to come forward in good time to receive immunity or a significant discount in fines. One of the biggest challenges is ensuring the full co-operation of employees. These individuals will generally possess the best information for the purposes of a successful leniency application and may very well use this to protect themselves from any attempt to discipline them.

These findings lead us to identify three recommendations for the strengthening of leniency policies and cartel enforcement more generally:

1. The need for individual sanctions— These are necessary to ensure leniency has a tangible deterrent effect on those responsible and should be applied as a complement to fines against the firm. They can be either a criminal offence or alternative civil sanctions such as individual fines, director disqualifications or possibly even derivative actions by shareholders. These must be designed to incentivise co-operation within the framework of the leniency policy.
2. Maintaining a credible threat— Governments must ensure that competition authorities have the necessary resources and powers to uncover a good number of active cartels without the use of leniency. This is especially important in ensuring enforcement has genuine reach throughout the economy rather than just focusing on clusters of cartels in particular industries. Such investigations are costly but are justifiable given the very significant sums recovered by governments through antitrust fines.
3. Helping firms strengthen compliance and detection— The 'race' for leniency, if it is to be so described, exists both between firms and within firms. More could be done to encourage and help firms set up internal mechanisms that allow them to detect transgressions by employees at an earlier stage or prevent them from occurring in the first place.

It is unclear the extent to which competition authorities recognise the limitations of leniency. The European Commission has been focused on strengthening the incentive for self-reporting by increasing the size of fines imposed and it has been looking to increase the throughput of cases by adopting a settlement process. These are important developments that are consistent with the theoretical framework summarised in this paper. Others have gone a lot further. For example, the United Kingdom's Competition & Markets Authority (formerly the Office of Fair Trading) has criminal sanctions and is increasingly deploying intrusive surveillance powers under the Regulation of Investigatory Powers Act 2000 (UK).<sup>60</sup> It has also made efforts to provide compliance guidance, and it allows for a small discount in fines where an infringing firm can

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<sup>60</sup> See A. Nikpay, 'UK Cartel Enforcement: Past, Present, Future' (11 December 2012). Speech to The Law Society Antitrust Section. Available: [http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.offt.gov.uk/shared\\_offt/speeches/2012/1112.pdf](http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.offt.gov.uk/shared_offt/speeches/2012/1112.pdf)

demonstrate it made genuine efforts to comply with the law either before or after an infringement.<sup>61</sup>

It will be some years before we will be able to definitely pass judgment on the use of leniency policies, but there are clearly some gaps between leniency theory and how such policies operate in practice. Competition authorities should be aware of the limitations of what has become the most distinctive and widely used of antitrust enforcement tools.

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<sup>61</sup>See, eg, Office of Fair Trading, 'How Your Business Can Achieve Compliance with Competition Law: Guidance' (OFT1341, June 2011)  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/284402/oft1341.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/284402/oft1341.pdf).

APPENDIX 1— EU CARTEL CASES, INVESTIGATIONS AND END DATES

	<b>CASE</b>	<b>END DATE OF CARTEL</b>	<b>DATE INVESTIGATION WAS OPENED (either by cartel member revealing or by Commission detection)</b>
2014	CANNED MUSHROOMS	2012	2012
2014	STEEL ABRASIVES	2010	2010
2014	FLEXIBLE POLYURETHANE FOAM	2010	2010
2013	INTEREST RATE DERIVATIVES (EURIBOR)	2010	2011
2013	NORTH SEA SHRIMPS TRADERS	2009	2009
2013	WIRE HARNESSSES	2009	2010
2012	FREIGHT FORWARDERS	2007	2007
2011	CRT GLASS	2004	2008
2011	BANANAS II	2005	2007
2010	ANIMAL FEED PHOSPHATES	2004	2005
2010	PRESTRESSING STEEL	2002	2002
2010	DRAM	2002	2002
2009	PLASTIC ADDITIVES	2000	2003
2009	POWER TRANSFORMERS	2003	2007
2009	REAGENTS	2007	2007
2009	MARINE HOSE	2007	2007
2008	BANANAS	2002	2005
2008	PARAFFIN WAX	2005	2005
2008	ALUMINIUM FLUORIDE	2002	2004
2008	SODIUM CHLORATE	2000	2003
2008	SYNTHETIC RUBBER (NITRILE BUTADIENE RUBBER - NBR)	2002	2003
2008	CHLOROPRENE RUBBER	2002	2003
2007	SPANISH BITUMEN	2002	2002
2007	DUTCH BEER	1999	1999
2007	LIFTS & ESCALATORS	2004	2003
2007	GAS INSULATED SWITCHGEAR	2004	2004
2006	SYNTHETIC RUBBER	2002	2002
2006	COPPER FITTINGS (JOINTS)	2004	2001
2006	ROAD BITUMEN	2002	2002
2006	ACRYLIC GLASS (Methacrylates)	2002	2002
2006	HYDROGEN PEROXIDE & PERBORATE (BLEACHING CHEMICALS)	2000	2002
2005	RUBBER CHEMICAL	2001	2002

2005	INDUSTRIAL BAGS	2002	2002
2004	ANIMAL FEED VITAMINS — CHOLINE CHLORIDE	1998	1999
2004	COPPER PLUMBING TUBES	2001	2001
2003	ORGANIC PEROXIDES	1999	2000
2003	CARBON & GRAPHITE	1999	2001
2003	SORBATES	1996	1998
2002	FOOD FLAVOUR	1998	1999
2002	SPECIALITY GRAPHITES	1998	2000
2002	METHYLGLUCAMINE	1999	2000
2002	SOTHEY'S&CHRISTIE'S	2000	2000
2002	ANIMAL FEED – METHIONINE	1999	1999