

The Use of Leniency in EU Cartel Enforcement: An Assessment after Twenty Years

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Since 1996, the European Commission has been operating a leniency programme, under which companies cooperating with its cartel investigations can obtain immunity from fines or a reduction of fines. Leniency plays a prominent role in EU cartel enforcement today. This paper assesses the positive effects and the possible negative effects of leniency, in the light of twenty years of experience.

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I. INTRODUCTION

A. Overview of the applicable provisions

According to the definition provided by the EU legislator, a "leniency programme" is "a programme [...] on the basis of which a participant in a secret cartel, independently of the other undertakings involved in the cartel, cooperates with an investigation of the competition authority, by voluntarily providing presentations regarding that participant's knowledge of, and role in, the cartel in return for which that participant receives [...] immunity from, or a reduction in, fines for its involvement in the cartel".¹

The European Commission adopted its first Leniency Notice in 1996.² This initial Leniency Notice was replaced by a new one in 2002.³ The main changes were that

¹ Article 2(15) of Directive 2014/104/EU of the European Parliament and of the Council of 26 November 2014 on certain rules governing actions for damages under national law for infringements of the competition law provisions of the Member States and of the European Union, [2014] OJ L349/1.

Article 2(14) of the same Directive defines "cartel" as "an agreement or concerted practice between two or more competitors aimed at coordinating their competitive behaviour on the market or influencing the relevant parameters of competition through practices such as, but not limited to, the fixing or coordination of purchase or selling prices or other trading conditions, including in relation to intellectual property rights, the allocation of production or sales quota, the sharing of markets and customers, including bid-rigging, restrictions of imports or exports or anti-competitive actions against other competitors".

² Commission Notice on the non-imposition or reduction of fines in cartel cases, [1996] OJ C207/4. For a detailed analysis of this 1996 Leniency Notice, see my paper 'The Commission Notice on the Non-Imposition or Reduction of Fines in Cartel Cases: A Legal and Economic Analysis' (1997) 22 *European Law Review* 125. The 1996 Leniency Notice was clearly inspired by the US Department of Justice's Corporate Leniency Policy of 1993. This was even more visible in the earlier draft notice which was published by the European Commission as part of the consultation procedure preceding the adoption of the 1996 Leniency Notice; [1995] OJ C341/13. The contemporary practice of leniency in antitrust enforcement is generally considered to have been started by the US Department of Justice in 1978, when it adopted its first Corporate Leniency Policy. The basic idea of granting immunity or a reduced penalty in exchange for cooperation to help convict co-conspirators is however probably as old as criminal prosecution; see N.K. Katyal, 'Conspiracy Theory' (2003) 112 *Yale Law Journal* 1307, at 1330-1331, referring to practices in English law going back to the early 12th century, as well as in early American law. The European Commission had already in a number of cases before 1996 reduced fines or even abstained from imposing fines in recognition of cooperation received. Examples of reduced fines include Decision of 19 December 1984, *Wood Pulp*, [1985] OJ L85/1, paragraph 148; Decision of 24 April 1986, *Polypropylene*, [1986] OJ L230/1, paragraph 109; and Decision of 13 July 1994, *Cartonboard*, [1994] OJ L243/52, paragraphs 169-171. In its Decision of 1 April 1992, *French-West-African Shipowners' Committees*, [1992] OJ L134/1, paragraph 74, sub (e), the European Commission decided that "there are grounds for exempting from fines the four shipping companies which although members of the committees contributed in drawing the attention of the Commission to the practices dealt with in this decision". For more details on the history of leniency, see my paper 'Leniency in Antitrust Enforcement: Theory and Practice' (2007) 30 *World Competition* 25, also accessible at <http://ssrn.com/author=456087>, and A. O'Brien, 'Leadership of Leniency', in C. Beaton-

immunity became automatic, and that fine reductions became more strictly aligned to the timing of the cooperation.⁴ In 2006 the European Commission again amended its Leniency Notice, mainly to clarify the threshold for immunity in terms of information to be provided and to clarify the duty of cooperation of all leniency applicants.⁵

The 2006 Leniency Notice, as currently applicable, provides as follows:

- The European Commission will grant **immunity** from any fine which would otherwise have been imposed to an undertaking disclosing its participation in a cartel if that undertaking is the **first to submit information and evidence** which in the Commission's view will enable it to carry out a targeted inspection in connection with the cartel, and if, at the time of the application for immunity, the Commission did not yet have sufficient evidence to adopt a decision to carry out an inspection and had not yet carried out such an inspection.⁶
- The immunity applicant must provide the Commission with a **leniency corporate statement**,⁷ which may be written or oral and which must include, in so far as it is known to the applicant at the time of the submission, a detailed description of the cartel arrangement, as well as with other evidence relating to the alleged cartel in possession of the applicant or available to it at the time of the submission, including in particular any evidence contemporaneous to the infringement.⁸

Wells and C. Tran (eds), *Anti-Cartel Enforcement in a Contemporary Age Leniency Religion* (Hart 2015), 17.

³ Commission Notice on immunity from fines and reduction of fines in cartel cases, [2002] OJ C45/3.

⁴ See F. Arbault and F. Peiró, 'The Commission's new notice on immunity and reduction of fines in cartel cases: building on success', *EC Competition Policy Newsletter*, June 2002, 15-22, accessible at http://ec.europa.eu/comm/competition/publications/cpn/cpn2002_2.pdf.

⁵ Commission Notice on immunity from fines and reduction of fines in cartel cases, [2006] OJ C298/17.

⁶ *Idem*, points 8(a) and 10. On what information is needed to carry out a targeted inspection, see Judgment in *EGL and Others v Commission*, T-251/12, EU:T:2016:114, paragraphs 148-169.

Contrary to the US Department of Justice's Corporate Leniency Policy, immunity under the European Commission's Leniency Notice does not mean absence of prosecution. The Commission will normally still adopt a decision finding an infringement of Article 101 TFEU. The fact that the undertaking cooperated with the Commission during its administrative procedure will be indicated in the decision, so as to explain the non-imposition of a fine; see 2006 Leniency Notice, as note 5 above, point 38.

⁷ The term "leniency corporate statement" is defined in Article 4a of Commission Regulation No 773/2004 of 7 April 2004 relating to the conduct of proceedings by the Commission pursuant to Articles 81 and 82 of the EC Treaty [2004] OJ L123/18, as amended by Commission Regulation (EU) 2015/1348 of 3 August 2015, [2015] OJ L208/3, as a "voluntary presentation of [the undertaking's] knowledge of a secret cartel and [its] role therein, which may also be in the form of voluntary presentations of the knowledge of former or current employees or representatives of the undertaking", "drawn up specifically for submission to the Commission with a view to obtaining immunity from or reduction of fines under the Commission's leniency programme".

⁸ 2006 Leniency Notice, as note 5 above, point 9.

- If no undertaking has been granted immunity on the above ground, the Commission will alternatively grant immunity to the undertaking that is the first to submit information and evidence which will enable the Commission to find an infringement of Article 101 TFEU in connection with the cartel, provided that the Commission did not yet have, at the time of the submission, enough evidence to make such a finding. The undertaking must provide the Commission with contemporaneous, incriminating evidence of the alleged cartel as well as a leniency corporate statement.⁹
- A number of **additional conditions** must be met in any case to qualify for immunity: the undertaking must cooperate genuinely, fully, on a continuous basis and expeditiously from the time it submits its application throughout the Commission's administrative procedure; and the undertaking must have ended its involvement in the cartel immediately following its application, except for what would, in the Commission's view, be reasonably necessary to preserve the integrity of the inspections.¹⁰ Moreover, an undertaking which took steps to coerce other undertakings to join the cartel or to remain in it is not eligible for immunity.¹¹
- Undertakings disclosing their participation in a cartel that do not meet the conditions for immunity may still be eligible for a **reduction** from any **fine** that would otherwise have been imposed, if they provide the European Commission with evidence which represents **significant added value** compared to the evidence already in the European Commission's possession, and provided that they fulfil the same conditions of genuine, full cooperation and termination of the infringement as applicable to immunity applicants.¹²

⁹ Idem, points 8(b) and 11.

¹⁰ Idem, points 12 and 22. If the undertaking does not meet these conditions, it cannot qualify for a fine reduction either.

¹¹ Idem, point 13. Such an undertaking may however still qualify for a fine reduction if it fulfils all the relevant requirements and conditions.

¹² 2006 Leniency Notice, as note 5 above, points 23 and 24; and above, text accompanying note 10. In the United States, second and subsequent applicants cannot qualify for reduced sanctions under the leniency programme, but they can enter into plea agreements with the Department of Justice that reward them for their cooperation; see my paper 'Leniency in Antitrust Enforcement: Theory and Practice' (2007) 30 *World Competition* 25, also accessible at <http://ssrn.com/author=456087>, at footnotes 15 to 25; A. O'Brien, 'Leadership of Leniency', in C. Beaton-Wells and C. Tran (eds), *Anti-Cartel Enforcement in a Contemporary Age Leniency Religion* (Hart 2015), 17, at 28; and OECD Policy Roundtable, *Leniency for Subsequent Applicants* (2012), available at <http://www.oecd.org/competition/Leniencyforsubsequentapplicants2012.pdf>. As explained in my paper 'The Use of Settlements in Public Antitrust Enforcement: Objectives and Principles' (2008) 31 *World Competition* 335, at 340-341, plea bargaining in the United States is simultaneously an investigatory tool and a way to dispose of cases, and hence corresponds to the combination of (the reduction-of-fines part of) leniency and settlements in the European Commission's cartel enforcement. On settlements, see text accompanying note 17 below.

- The first undertaking to provide such significant added value will receive a reduction of 30 to 50 % of the fine which would otherwise have been imposed, the second undertaking a reduction of 20 to 30 %, and subsequent undertakings a reduction of up to 20 %.¹³
- The degree of added value depends on the extent to which the evidence provided strengthens, by its very nature and/or its level of detail, the European Commission's ability to prove the infringement. The degree of corroboration from other sources required for the evidence submitted to be relied upon against other undertakings involved in the cartel will have an impact on the value of that evidence, so that compelling evidence will be attributed a greater value than uncorroborated or simply corroborating statements.¹⁴

Guidance as to the normal amount of the fine, and thus the size of the reduction in absolute terms available under the Leniency Notice, can be found in the European Commission's Fining Guidelines. Indeed, the desire to offer potential leniency applicants a somewhat higher degree of predictability as to the amount of the fines normally imposed was among the reasons why the Commission adopted in 1998 its first Fining Guidelines,¹⁵ and why it replaced these in 2006 by the currently applicable Fining Guidelines.¹⁶

In 2008, the European Commission introduced a cartel settlement procedure, under which, in cases deemed suitable by the Commission, undertakings can obtain an additional fine reduction of 10 % if they make a formal settlement submission, containing a recognition of the infringement and of the undertaking's liability for it, acceptance of a range of likely fines, and a waiver of some procedural rights.¹⁷

¹³ 2006 Leniency Notice, as note 5 above, point 26.

¹⁴ *Idem*, point 25.

¹⁵ Guidelines on the method of setting fines imposed pursuant to Article 15(2) of Regulation No 17 and Article 65(5) of the ECSC Treaty, [1998] OJ C9/3. For a detailed analysis of these guidelines, see my paper 'The Commission's New Method for Calculating Fines in Antitrust Cases' (1998) 23 *European Law Review* 125 and Chapter 4 of my book *The Optimal Enforcement of EC Antitrust Law – Essays in Law and Economics* (Kluwer, 2002).

¹⁶ Guidelines on the method of setting fines imposed pursuant to Article 23(2)(a) of Regulation No 1/2003, [2006] OJ C210/2. For a detailed analysis, see my paper 'The European Commission's 2006 Guidelines on Antitrust Fines: A Legal and Economic Analysis' (2007) 30 *World Competition* 197, also accessible at <http://ssrn.com/author=456087>.

On the complex relationship between the foreseeability of fines and their deterrent and other enforcement effects, see my paper 'The European Commission's 2006 Guidelines on Antitrust Fines: A Legal and Economic Analysis', as just above, at 204-206. On the relationship between leniency and the overall level of fines, see text accompanying notes 55 to 63 below.

¹⁷ See Article 10a of Commission Regulation No 773/2004 of 7 April 2004 relating to the conduct of proceedings by the Commission pursuant to Articles 81 and 82 of the EC Treaty [2004] OJ L123/18, as amended by Commission Regulation (EC) No 622/2008 of 30 June 2008 amending Regulation (EC) No 773/2004, as regards the conduct of settlement procedures in cartel cases, [2008] OJ L171/3 (further amended in 2015 by Commission Regulation (EU) 2015/1348, [2015] OJ L208/3), and

The European Commission's Leniency Notice, Fining Guidelines and cartel settlement procedure only apply to the European Commission's own cartel enforcement.

The cartel prohibition contained in Article 101 TFEU is however also enforced by the competition authorities of the EU Member States. Indeed, Regulation 1/2003,¹⁸ which entered into force on 1 May 2004, provides that all EU Member States must have a national competition authority that is empowered to apply Article 101 TFEU, and that those national competition authorities must also apply Article 101 TFEU whenever they apply their national competition laws to cartels that may affect trade between Member States.¹⁹

Following the example of the European Commission, most EU Member States' competition authorities have also introduced a leniency programme, starting with the British and German competition authorities in 2000.²⁰ The leniency programmes of the European Commission and of the various national competition authorities are autonomous and independent of each other.²¹ They are however broadly similar, in part as a result of soft harmonisation through the European Competition Network (ECN), which groups the European Commission and the competition authorities of the EU Member States, and which adopted a first ECN Model Leniency Programme in 2006 and a second, revised one in 2012.²²

Commission Notice on the conduct of settlement procedures in view of the adoption of Decisions pursuant to Article 7 and Article 23 of Council Regulation (EC) No 1/2003 in cartel cases, [2008] OJ C167/1 (amended in 2015 by a Communication from the Commission, [2015] OJ C256/2).

For a detailed analysis of the cartel settlement procedure, see my paper 'The Use of Settlements in Public Antitrust Enforcement: Objectives and Principles' (2008) 31 *World Competition* 335, also accessible at <http://ssrn.com/author=456087>. See also M. Hellwig, K. Hüschelrath and U. Laitenberger, 'Settlements and Appeals in the European Commission's Cartel Cases: An Empirical Assessment', ZEW- Centre for European Economic Research Discussion Paper No. 16-010 (January 2016) and note 12 above.

¹⁸ Council Regulation (EC) No 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty, [2003] OJ L1/1.

¹⁹ Article 35(1) and Article 3(1) of Regulation 1/2003, as note 18 above. For a detailed analysis of Regulation 1/2003, in its historic context, see Chapter 1 of my book *Principles of European Antitrust Enforcement* (Hart 2005).

²⁰ At the time of writing, Malta is the only EU Member State without a leniency programme. A list of all the competition authorities of the EU Member States that operate a leniency programme can be found on the European Commission's website at http://ec.europa.eu/comm/competition/antitrust/legislation/authorities_with_leniency_programme.pdf.

²¹ See Judgment in *DHL Express*, C-428/14, EU:C:2016:27, and Opinion of Advocate-General Wathelet in the same case, EU:C:2015:587.

²² See the European Commission's ECN website: <http://ec.europa.eu/competition/ecn/documents.html>. The ECN Model Leniency Programme is not legally binding; see *DHL Express*, as note 21 above.

On 4 November 2015, the European Commission launched a public consultation concerning possible measures to increase the enforcement powers of national competition authorities, including in the area of leniency: see http://ec.europa.eu/competition/consultations/2015_effective_enforcers/index_en.html.

Finally, in 2014 and 2015, the European Parliament and Council and the European Commission adopted measures to limit the liability of undertakings that have received immunity under the leniency programme of the European Commission or a national competition authority in follow-on actions for damages to their direct or indirect purchasers or providers,²³ and to prohibit the use of leniency statements and settlement submissions in follow-on actions for damages.²⁴

B. Some statistics

Table 1 below shows, for the past thirty years, divided in periods of five years, the total number of decisions in which the European Commission imposed fines for cartel infringements,²⁵ and the number of these decisions in which immunity was granted under

See also the UK Competition and Markets Authority's response to this consultation, accessible at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/500187/CMA_response_to_EC_consultation.pdf.

²³ Article 11(4) of Directive 2014/104/EU of the European Parliament and of the Council of 26 November 2014 on certain rules governing actions for damages under national law for infringements of the competition law provisions of the Member States and of the European Union, [2014] OJ L349/1 (adding, by way of exception, that immunity recipients remain liable to other injured parties where full compensation cannot be obtained from the other undertakings that were involved in the same infringement). According to Article 21(1) of this Directive, Member States must transpose the provisions of this Directive into their national laws by 27 December 2016.

²⁴ Articles 6(6) and 7(1) of Directive 2014/104/EU, as note 23 above, and Article 16a(2) of Commission Regulation No 773/2004 of 7 April 2004 relating to the conduct of proceedings by the Commission pursuant to Articles 81 and 82 of the EC Treaty [2004] OJ L123/18, as amended by Commission Regulation (EU) 2015/1348 of 3 August 2015, [2015] OJ L208/3.

²⁵ The statistics are of my own making, based on the information about individual decisions available on the European Commission's website, <http://ec.europa.eu/competition/cartels/cases/cases.html>. The full list of the cases I have counted can be found in the Annex to this paper. I have counted decisions as initially adopted by the European Commission, ignoring possible later annulments by the EU Courts (as well as possible re-adoptions of decisions by the Commission following such annulments). In a number of cases (as identified by a single case number, reflecting a single investigation and set of administrative proceedings conducted by the Commission), the decision contains the finding of several infringements, for instance eight infringements in the 2001 decision in Case 37.512 *Vitamins*, or seven infringements in the 2013 decision in Case 39.861 *Yen Interest Rate Derivatives*. I have counted each of those cases as a single case, and I have done the same for two cases where, following a single investigation, the Commission split the case into two decisions (1990 decisions in Case 33.133 *Soda-ash* and 2014 decisions in Case 39.924 *Swiss Franc Interest Rate Derivatives*). Finally, as to the four cases in which the Commission adopted a decision imposing fines on some undertakings that had opted for the cartel settlement procedure, while continuing its investigation against other undertakings suspected of having participated in the same alleged cartel, I have included the 2013 decision in Case 39.861 *Yen Interest Rate Derivatives*, and the 2014 decisions in Case 39.792 *Steel Abrasives* and Case 39.965 *Mushrooms*, because these covered all but one of the suspected cartel participants, but excluded the 2013 decision in Case 39.914 *Euro Interest Rate Derivatives*, because it covers only half of the suspected cartel participants (see press release IP/13/1208 of 4 December 2013), and the Commission's investigation remained thus far from completed at the time of the 2013 decision.

the European Commission's leniency programme to the first undertaking cooperating.²⁶

Period	Total number of European Commission cartel decisions with fines	Number of decisions in which immunity was granted under the European Commission's leniency programme to the first undertaking cooperating
1986 - 1990	9	
1991 - 1995	8	
1996 - 2000	10	1
2001 - 2005	33	20
2006 - 2010	31	25
2011 - 2015	23	21

Table 1: European Commission cartel decisions with fines

For the 1986 - 1990 and 1991 - 1995 periods, no decisions are listed in the right-hand column of Table 1 because the Commission's leniency programme only started with the 1996 Leniency Notice.²⁷ In the 1996 - 2000 period there was only one decision in which immunity was granted, reflecting the time lag between applications for immunity and final decisions at the end of the Commission's administrative proceedings. In the 2001 - 2005 period, however, there were already 20 decisions involving immunity under the Commission's leniency programme, and this number has remained at a similar level since (25 in the 2006 - 2010 period and 21 in the 2011 - 2015 period).

²⁶ Including cases in which a "very substantial reduction" or a "substantial reduction" of the fine was granted under the 1996 Leniency Notice. Indeed, the 1996 Leniency Notice did not guarantee complete immunity to the first undertaking cooperating; see (text accompanying) notes 2 to 4 above. In practice, however, the Commission invariably granted a 100 % reduction as "very substantial fine reduction". Also included is the one case (2001 decision in Case 36.490 *Graphite Electrodes*) in which the Commission granted a "substantial reduction" under the 1996 Leniency Notice, at the maximum rate of 75 %, because immunity would also have been granted in that case if the 2002 Leniency Notice or the 2006 Leniency Notice had been applicable.

²⁷ See (text accompanying) note 2 above. As already mentioned in note 2 above, the Commission did however already in its 1992 decision in Case 32.450 *French-West African Shipowners' Committees* grant immunity from fines to four shipping companies that had helped drawing the Commission's attention to the infringement.

As a percentage of the total number of cartel decisions with fines, the above figures correspond to an increase of the number of decisions involving immunity under the Commission's leniency programme from 10 % (1 out of 10) in the 1996 - 2000 period, over 61 % (20 out of 33) in the 2001 - 2005 period, and 81 % (25 out of 31) in the 2006 - 2010 period, to 91 % (21 out of 23) in the 2011 - 2015 period.

In most of the cases in which an undertaking received immunity from fines under the Commission's leniency programme, a 30 to 50 % reduction of the fine was also granted to a second undertaking under the leniency programme. In many cases, a 20 to 30 % reduction also was granted to a third undertaking, and in a number of cases reductions of up to 20 % to further undertakings.²⁸ Also in many of the cases in which no undertaking received immunity from fines, reductions of the fine on account of leniency were granted to one or more undertakings.²⁹

A recent statistical study of 52 European Commission cartel decisions adopted between 1 May 2004 and 1 May 2014 found that in 94 % of these cases at least one undertaking had applied for leniency, that, of the 333 undertakings involved in all 52 cases, 56 % had applied for leniency and 46 % were granted leniency, including 11 % immunity, and that on average the fines of the 186 undertakings that applied for leniency were reduced by 37.8 %.³⁰ For the whole sample of 333 undertakings, the average fine reduction on account of leniency thus amounted to 21.1 %.³¹

Leniency thus clearly plays a prominent role in EU cartel enforcement today.

C. Overview of this paper

In the remainder of this paper, I will assess the positive effects and the possible negative effects of leniency. Ten years ago, I analysed at length the positive effects and the possible negative effects of leniency in a paper entitled 'Leniency in Antitrust Enforcement: Theory and Practice'.³² In the present paper, I will revisit this analysis in the light of the experience up to now, taking into account the recent literature.³³

²⁸ See text accompanying notes 12 to 14 above as to the conditions for such further leniency.

²⁹ For instance in the most recent case in which no immunity was granted, four of the five undertakings fined received reductions of respectively 50 %, 25 % and 10 % on account of leniency; see Summary of Commission Decision of 10 December 2014 in Case AT.39780 *Envelopes*, [2015] OJ C74/5 at 7.

³⁰ S. Broos, A. Gautier, J. Marcos Ramos and N. Petit, 'Analyse statistique des affaires d'ententes dans l'UE (2004-2014)', (2016) 67 *Revue économique* 79 at 85.

³¹ See text accompanying notes 55 to 63 below for a discussion of the latter statistic.

³² 'Leniency in Antitrust Enforcement: Theory and Practice' (2007) 30 *World Competition* 25, also accessible at <http://ssrn.com/author=456087>.

³³ Many papers on leniency have been published recently; see in particular the contributions in C. Beaton-Wells and C. Tran (eds), *Anti-Cartel Enforcement in a Contemporary Age Leniency Religion*

II. POSITIVE EFFECTS OF LENIENCY

A. Improved collection of intelligence and evidence

In order to be able to punish cartels, competition authorities need intelligence of the existence of the cartel, and evidence sufficient for the penalties to be upheld in court.

Competition authorities can try to obtain the necessary intelligence and evidence from three possible sources. First, they could themselves monitor markets, observing publicly available information and data, and possibly use economic analysis of these data to try to detect and prove antitrust infringement. For cartels, this first method has not been very important in practice. Economic evidence is generally insufficient in court to establish collusion, and, at least in jurisdictions with a history of successful cartel enforcement,³⁴ screening for cartels appears difficult.³⁵

Secondly, competition authorities could obtain information from third parties. Customers or competitors harmed by antitrust violations may bring complaints to the authorities,³⁶ and third parties may otherwise volunteer to provide information. As Donald Baker has put it: "The desire for revenge is more picturesque, but it is still very much present. In my experience, disgruntled current employees, fired employees, former trade association officials, and even ex-spouses and ex-lovers may be anxious to finger the individuals who they think have done them in".³⁷

The third, and usually best, source of information is the companies and individuals that have committed the antitrust violations themselves. For secret cartels, the undertakings

(Hart 2015), and the review of this book by Florian Wagner-von Papp available at http://lawprofessors.typepad.com/antitrustprof_blog/2016/01/florian-wagner-von-papp-on-anti-cartel-enforcement-in-a-contemporary-age-leniency-religion-.html, the contributions in the 'Symposium: Leniency' issue of the journal *Competition Law & Policy Debate* (Volume 1, Issue 4, November 2015), edited by Annette Schild, and the contributions to the Swedish Competition Authority's 2015 Pros and Cons Seminar on leniency, available at <http://www.konkurrensverket.se/en/research/seminars/the-pros-and-cons/leniency-and-criminalization-2015/>.

³⁴ In jurisdictions where cartels have until recently not been prohibited or at least not successfully prosecuted, traces of their existence are likely to be much easier to detect.

³⁵ See OECD Policy Roundtable, *Ex officio cartel investigations and the use of screens to detect cartels* (2013), available at <http://www.oecd.org/daf/competition/exofficio-cartel-investigation-2013.pdf>. See also (text accompanying) note 103 below.

³⁶ See European Commission's Notice on the handling of complaints by the Commission under articles 81 and 82 of the EC Treaty, [2004] OJ C101/5.

³⁷ D.I. Baker, 'The Use of Criminal Law Remedies to Deter and Punish Cartels and Bid-Rigging' (2001) 69 *George Washington Law Review* 693 at 708.

that have committed the violations and their staff may be the only ones holding the information which competition authorities need to detect and punish the violations.

The European Commission could try to obtain the information necessary to detect and punish cartels from the companies concerned by using its investigatory powers, in particular requests for information and inspections.³⁸ The use of these instruments is however legally only possible if the European Commission already has relatively precise indicia of the suspected cartel infringement.³⁹ In the absence of full cooperation by the companies concerned, the use of these investigatory powers is also difficult and consumes much time and administrative resources.⁴⁰ In jurisdictions with a history of successful cartel enforcement, cartelists will also have learnt their lessons and take great care to minimise written traces of their conspiracies.

The leniency programme significantly reduces the difficulty, time and administrative cost of collecting intelligence and evidence of cartel infringements, as the European Commission receives the assistance of the leniency applicants, through their leniency applications and their continuing cooperation during the administrative procedure.

This allows the European Commission to detect and punish more cartels, while keeping the resources spent on cartel enforcement constant. It may also allow cartel investigations to be completed faster, and to be more extensive and more thorough, in that more and stronger evidence can be obtained, thus also enabling the imposition of higher fines.⁴¹

The statistics in Table 1 above confirm that the introduction of the leniency programme has indeed allowed the European Commission to increase significantly the number of cartels detected and punished. Indeed, the comparison between the figures for the 1996-2000 period and the the figures for the 2001-2005 period shows that the number of cartel decisions tripled following the introduction of the leniency programme.

³⁸ Article 18 and Articles 20 and 21 of Regulation 1/2003, as note 18 above. For a detailed legal and economic analysis of the European Commission's investigatory powers and their limitations, see my paper 'Self-incrimination in EC Antitrust Enforcement: A Legal and Economic Analysis' (2003) 26 *World Competition* 567, also accessible at <http://ssrn.com/author=456087>.

³⁹ See Judgments in *HeidelbergCement v Commission*, C-247/14 P, EU:C:2016:149 and in *Nexans v Commission*, T-135/09, EU:T:2012:596.

⁴⁰ Their use is also limited by the privilege against self-incrimination, which prohibits the use of compulsion to elicit answers to questions that may involve admission of an infringement; see my papers 'Self-incrimination in EC Antitrust Enforcement: A Legal and Economic Analysis', as note 38 above, and 'EU Antitrust Enforcement Powers and Procedural Rights and Guarantees: The Interplay between EU Law, National Law, the Charter of Fundamental Rights of the EU and the European Convention On Human Rights' (2011) 34 *World Competition* 189, also accessible at <http://ssrn.com/author=456087>.

⁴¹ See further my paper 'Leniency in Antitrust Enforcement: Theory and Practice', as note 32 above, at footnotes 84 to 94. See also (text accompanying) note 63 below.

There can be no doubt that this tripling of the number of cartel decisions has significantly increased deterrence.⁴² Indeed, increasing the probability of detection and punishment is a very effective method to increase deterrence.⁴³

B. Increased difficulty of creating and maintaining cartels

Setting up and maintaining a successful cartel requires effort. The cartel members have to select and coordinate their behaviour on mutually consistent, collusive strategies, allowing the cartel participants as a group to increase profits, and providing for a fair distribution of profits between them. They also need to develop mechanisms to discourage cheating, involving monitoring, rewards and punishments. In a dynamic economy, successful cartels may have to develop an organizational structure that allows them to solve these problems continuously.⁴⁴

A well-designed leniency programme makes these tasks more difficult. The possibility for a deviator to apply for leniency increases the payoff of cheating, thus making collusion more difficult to sustain.⁴⁵ It increases uncertainty, making it more difficult for cartel participants to reach agreement, diminishing trust among them, and increasing the need for costly monitoring.⁴⁶

This effect of raising the cost of setting up and maintaining cartels⁴⁷ is not unique to leniency. The same logic underlies the legal rule that cartels or other agreements

⁴² Apart from the deterrent effect, the imposition of fines on cartel participants also has a moral effect, in that it sends a message to the spontaneously law-abiding, reinforcing their moral commitment to the antitrust prohibitions; see my paper 'Optimal Antitrust Fines: Theory and Practice', (2006) 29 *World Competition* 183, also accessible at <http://ssrn.com/author=456087>, at footnotes 12 to 37; see also (text accompanying) note 74 below.

⁴³ See A. von Hirsch, A.E. Bottoms, E. Burney and P.-O. Wikström, *Criminal Deterrence and Sentence Severity: An Analysis of Recent Research* (Hart 1999), at 47; C. Parker and V. Lehmann Nielsen, 'Deterrence and the Impact of Calculative Thinking on Business Compliance with Regulation' (2009), accessible at <http://ssrn.com/abstract=1527326>, at 33; and my papers 'Optimal Antitrust Fines: Theory and Practice', as note 42 above, at footnotes 62 to 80, and 'Recidivism in EU Antitrust Enforcement: A Legal and Economic Analysis' (2012) 35 *World Competition* 5, also accessible at <http://ssrn.com/author=456087>, at footnote 93.

⁴⁴ M.C. Levenstein and V.Y. Suslow, 'What Determines Cartel Success?', (2006) 44 *Journal of Economic Literature* 43, at 44-45; see also J.E. Harrington, 'How Do Cartels Operate?', (2006) 2 *Foundations and Trends in Microeconomics* 1, and R.C. Marshall and L.M. Marx, *The Economics of Collusion – Cartels and Bidding Rings* (MIT Press, 2012).

⁴⁵ J.E. Harrington, 'Optimal Corporate Leniency Programs', (2008) 56 *The Journal of Industrial Economics* 215, at 217, has called this the 'Deviant Amnesty Effect' of leniency.

⁴⁶ N.K. Katyal, 'Conspiracy Theory', (2003) 112 *Yale Law Journal* 1307, at 1342-1350, and G. Spagnolo, 'Divide et Impera: Optimal Leniency Programmes', CEPR Discussion Paper No. 4840 (December 2004), available at <http://www.cepr.org/pubs/dps/DP4840.asp>, at 6.

⁴⁷ N.K. Katyal, as note 46 above, at 1363, calls this 'cost deterrence'.

restrictive of competition are legally unenforceable,⁴⁸ and the practice of imposing higher penalties for cartel members that play active roles in setting up and running the cartel.⁴⁹

This effect of leniency may lead to cartels breaking down earlier than they would otherwise or even not being formed in the first place.⁵⁰

It is impossible to know how many (or how few) cartels have not come into existence as a result of this effect of the European Commission's leniency programme.

As to how many cartels have broken down earlier than they would have in the absence of the European Commission's leniency programme, one could count the number of European Commission decisions in cases in which the cartel was detected exclusively through leniency and the cartel was still ongoing at the time of the first leniency application.⁵¹

Table 2 below shows that, on a conservative count,⁵² there have been 34 such cases.⁵³ This is a significant number.⁵⁴

⁴⁸ See Article 101(2) TFEU.

⁴⁹ See paragraph 28, third indent, of the 2006 Fining Guidelines, as note 16 above. This makes the setting up and functioning of cartels more difficult, because, faced with the prospect of higher fines, there will be fewer volunteers to play active roles. Those who nevertheless accept to do so are likely to want compensation in the form of a larger part of the gain, which is likely to be difficult to agree on, and to weaken the sense of solidarity and mutual trust within the group; see N.K. Katyal, as note 46 above, at 1341-1346 and 1363-1367, and my paper 'Optimal Antitrust Fines: Theory and Practice', as note 42 above, at footnotes 88 to 90.

⁵⁰ The two are of course linked, as the earlier breakdown means that a prospective cartel is less profitable and thus less likely to be entered into in the first place; see my paper 'The Commission Notice on the Non-Imposition or Reduction of Fines in Cartel Cases: A Legal and Economic Analysis', as note 2 above, at 130, 133 and 140, and J.E. Harrington, as note 45 above, at 220-221. See further my paper 'Leniency in Antitrust Enforcement: Theory and Practice', as note 32 above, at footnotes 102 to 106.

⁵¹ Not all cartels for which immunity from fines was granted under the leniency programme, as counted in Table 1 above, were detected exclusively through leniency, as in some cases the Commission had already obtained some information about the cartel before it received the first leniency application. Those cases are not counted in Table 2. As to whether the cartel was still ongoing at the time of the first leniency application, in four cases the public version of the decision does not allow the drawing of a clear conclusion. These unclear cases have not been included in Table 2, which thus reflects a conservative counting. More generally, the fact that the Commission decision sets as end-date of the infringement a date before the date of the immunity application does not exclude that the cartel may still have been ongoing at the latter date. Indeed, the Commission tends to take a cautious approach setting the end-date at the last date for which it has firm evidence of ongoing cartel activity. Also in this respect, Table 2 thus reflects a conservative counting.

⁵² See note 51 just above.

⁵³ See note 25 above and the Annex to this paper.

⁵⁴ The total number of cases exclusively detected through leniency being 58, the 34 cases in which it is clear that the cartel was still ongoing at the time of the first leniency application thus represent 59 % of the total; compare with A. Stephan and A. Nikpay, 'Leniency Decision-Making from a Corporate Perspective: Complex Realities', in C. Beaton-Wells and C. Tran (eds), *Anti-Cartel Enforcement in a*

Period	Number of European Commission cartel decisions concerning cartels detected exclusively through leniency where the cartel was clearly ongoing at the time of the first leniency application
1996 - 2000	1
2001 - 2005	7
2006 - 2010	15
2011 - 2015	11
Total 1996 - 2015	34

Table 2: Cartels that were ongoing when first detected through leniency

III. RISKS OF NEGATIVE EFFECTS

A. Lowering of the penalty level

It would seem obvious at first sight that leniency leads to a lowering of the average fine level. Several commentators have indeed made this observation and expressed concern about it.⁵⁵

In reality, this issue turns out to be a red herring. The introduction of a leniency programme only leads to a lowering of the fine level if it is not accompanied by a

Contemporary Age Leniency Religion (Hart 2015), 139 at 139. The detection and punishment of cartels that are no longer ongoing of course also contributes to deterrence; see text accompanying notes 40 to 43 above.

⁵⁵ See my paper 'The Commission Notice on the Non-Imposition or Reduction of Fines in Cartel Cases: A Legal and Economic Analysis' (1997) 22 *European Law Review* 125 at 130; M. Motta and M. Polo, 'Leniency programs and cartel prosecution' (2003) 21 *International Journal of Industrial Organization* 347, who, through a mathematical model, "showed that, by reducing the expected fines, leniency programs may induce a pro-collusive reaction" (*idem*, at 375); and, more recently, C. Marvão and G. Spagnolo, 'Pros and cons of leniency, damages and screens' (2015) 1 *Competition Law & Policy Debate* 47.

compensating increase in the level of the fines that would be imposed in the absence of cooperation under the leniency programme.⁵⁶

Most or indeed all legislators and competition authorities have understood this, and have raised the general fine level around the same time as they introduced a leniency programme.⁵⁷

This is also true for the European Commission: The introduction of the leniency programme in 1996, and its subsequent development (as well as the addition of the cartel settlement procedure in 2008) were accompanied by a sustained increase in the level of the fines, marked in particular by the adoption of the 1998 and 2006 Fining Guidelines.⁵⁸

Before the 1998 Fining Guidelines, fines were typically calculated as a percentage of the turnover in the product concerned by the cartel, and the percentage tended to be in the order of 2 to 4 %, and certainly never exceeded 8 %.⁵⁹ Under the 2006 Fining Guidelines, fines are again calculated as a percentage of the turnover in the product concerned by the cartel, but the percentages are now in the order of 15 to 25 %.⁶⁰ The level of the fines imposed in the absence of cooperation under the leniency programme has thus more than doubled.⁶¹

This means that, even if the application of the leniency programme were on average to lead to fine reductions of 50 %, the level of the fines ultimately imposed would still be higher than it was before the introduction of the leniency programme. In reality, the average fine reduction on account of leniency is well below 50 %. As mentioned above, a recent study shows an average fine reduction on account of leniency of only 21 %.⁶²

⁵⁶ See my paper 'Leniency in Antitrust Enforcement: Theory and Practice', as note 32 above, at footnotes 124 to 127.

⁵⁷ In France, for instance, a leniency programme was introduced in 2001 by the same Act of Parliament which also increased the maximum fine; see D. Voillemot, *Gérer la clémence* (Bruylant, 2005), at 59.

⁵⁸ See text accompanying notes 15 and 16 above.

⁵⁹ See M. Reynolds, 'EC Competition Policy on Fines' (1992) *European Business Law Review* 263 at 263, and my book *The Optimal Enforcement of EC Antitrust law* (Kluwer Law International, 2002) at 32 and at 70.

⁶⁰ See note 16 above, and E. Barbier de La Serre and E. Lagathu, 'The Law on Fines Imposed in EU Competition Proceedings: Faster, Higher, Harsher' (2013) 4 *Journal of European Competition Law & Practice* 325 at 329, and 'The Law on Fines Imposed in EU Competition Proceedings: On the Road to Consistency' (2014) 5 *Journal of European Competition Law & Practice* 400 at 404.

⁶¹ For cartels that last more than one year, the increase is in fact much higher than a doubling, because before the 1998 Guidelines, only a percentage of the turnover during one year was taken into account, whereas under the 2006 Guidelines, this is multiplied by the number of years of participation in the cartel; see note 16 above.

⁶² See (text accompanying) notes 30 and 31 above. For cases in which the settlement procedure is followed, a further reduction of 10 % has to be added; see (text accompanying) note 17 above.

There is thus no ground for concern that the European Commission's leniency programme would have weakened deterrence by lowering the overall fine level.⁶³

B. Facilitation of the creation and maintenance of cartels

As I have pointed out in previous publications,⁶⁴ successful cartels tend to be sophisticated organizations, capable of learning. It is thus safe to assume that cartel participants will try to adapt their organization to leniency policies, not only so as to minimize the destabilising effect,⁶⁵ but also, where possible, to exploit leniency policies to facilitate the creation and maintenance of cartels. This raises the question whether there could be features of leniency programmes that risk being exploited to perverse effect.

The limitation of immunity to the single first cooperating cartel participant is clearly important in avoiding perverse effects. If this condition did not exist, one could imagine all the members of a cartel collectively denouncing it to the antitrust enforcement authorities and claiming leniency, only after having fully implemented the cartel agreement up to its time of natural death.⁶⁶

In situations where the same companies participate in a number of cartels in different markets, or repeatedly form cartels over time, one could imagine a system in which cartel participants take turns to apply for leniency, every time one of the cartels is (about to be) detected by the competition authority. In jurisdictions where cartels are not only punished by fines on companies, but also by imprisonment of individuals, such a system is most unlikely to be attractive,⁶⁷ but in jurisdictions without such individual penalties it might conceivably work.

⁶³ One could argue that these general penalty increases could have been introduced anyway, irrespective of the introduction of a leniency policy, so that the fact remains that the leniency policy has the effect of lowering the penalty level. However, the existence of a leniency policy, which allows antitrust offenders to reduce their exposure to penalties by cooperating with the authorities and which results in more and better evidence of the antitrust violations being discovered, may precisely allow the higher penalty levels, because the antitrust offenders' failure to take advantage of the possibility to cooperate increases their culpability, and hence the acceptability of higher penalties, and because the stronger evidence equally makes higher penalties acceptable; see my paper 'Leniency in Antitrust Enforcement: Theory and Practice', as note 32 above, after footnote 127; see also text accompanying note 4 above.

⁶⁴ See my paper 'Leniency in Antitrust Enforcement: Theory and Practice', as note 32 above, at footnotes 133 to 140, and my book *Efficiency and Justice in European Antitrust Enforcement* (Hart 2008), paragraphs 422 to 425.

⁶⁵ See text accompanied by notes 44 to 54 above.

⁶⁶ Cartels tend to die natural deaths, be it sometimes only after a long life, because of the entry or expansion of non-cartel members; see M.C. Levenstein and V.Y. Suslow, as note 44 above.

⁶⁷ See also C. Aubert, P. Rey and W.E. Kovacic, 'The Impact of Leniency and Whistleblowing Programs on Cartels', (2006) 24 *International Journal of Industrial Organization* 1241 at 1250.

Twenty years after the introduction of the European Commission's leniency programme, can any evidence of such a possible perverse effect be found?

The issue has recently been thoroughly examined by Robert Marshall and Leslie Marx.⁶⁸ The strongest example they found of a possible instance of cartel participants taking turns to apply for immunity concerns the European Commission's following three decisions:

- the 2003 decision in *Organic Peroxides*, in which Akzo was granted immunity on the ground of a leniency application made in April 2000 for a cartel lasting from 1971 until the end of 1999,⁶⁹
- the 2006 decision in *Hydrogen Peroxide and Perborate*, in which Degussa was granted immunity on the ground of a leniency application made in December 2002 for a cartel lasting from 1994 until the end of 1999,⁷⁰
- the 2009 decision in *Calcium Carbide*, in which Akzo was granted immunity on the ground of a leniency application made before 8 December 2006 for a cartel lasting from 2004 until 16 January 2007, the day on which the European Commission conducted surprise inspections on the business premises of the other cartel participants.⁷¹

I do not find this a convincing example of possible 'taking turns' to apply for leniency, for two reasons. First, while Akzo and Degussa participated in all three cartels, several other large companies were also involved in one or more of these cartels, notably Atochem/Atofina (second largest in the *Organic Peroxides* and *Hydrogen Peroxide and Perborate* cartels) and Solvay (largest in the *Hydrogen Peroxide and Perborate* cartel). It is difficult to see how Akzo and Degussa could between the two of them have controlled the strategic use of leniency. Secondly, one would expect that the taking of turns to apply for leniency would happen when the cartel either has died a natural death or has just been detected or is about to be detected by a competition authority, whereas in the case of the *Calcium Carbide* cartel, the cartel was still ongoing and undetected when Akzo applied for leniency. A more convincing explanation for Akzo's leniency applications is the one

⁶⁸ R.C. Marshall and L.M. Marx, 'Participation in Multiple Cartels Through Time and the Potentially Strategic Use of leniency', paper presented at the Swedish Competition Authority's 2015 Pros and Cons seminar on leniency, available at <http://www.konkurrensverket.se/en/research/seminars/the-pros-and-cons/leniency-and-criminalization-2015/>. See also C. Harding, C. Beaton-Wells and J. Edwards, 'Leniency and Criminal Sanctions in Anti-Cartel Enforcement: Happily Married or Uneasy Bedfellows?', in C. Beaton-Wells and C. Tran (eds), *Anti-Cartel Enforcement in a Contemporary Age Leniency Religion* (Hart 2015), 233 at 254-257.

⁶⁹ Commission Decision of 10 December 2003 in Case COMP/37.857 *Organic Peroxides*, Summary publication in [2005] OJ L110/44.

⁷⁰ Commission Decision of 3 May 2006 in Case COMP/38.620 *Hydrogen Peroxide and Perborate*, Summary publication in [2006] OJ L353/54.

⁷¹ Commission Decision of 22 July 2009 in Case COMP/39.396 *Calcium Carbide*, Summary publication in [2009] OJ C301/18. That Akzo's leniency application was made before 8 December 2006 can be deduced from the fact that immunity was granted under the 2002 Leniency Notice, which was replaced on 8 December 2006 by the 2006 Leniency Notice; see (text accompanying) notes 3 to 5 above.

provided by Akzo itself, namely that, after having expanded through a series of acquisitions and having been caught in several cartels through its relatively autonomous divisions, Akzo introduced in 2000 an Internal Amnesty Program, in order to be able to detect cartels engaged in by its divisions and report them under the European Commission's leniency programme.⁷²

Another potential perverse scenario to be considered is the use of leniency as a mechanism to punish deviations from the cartel agreement. Again the limitation of immunity to the single first cooperating cartel participant very much reduces the risk of such perverse effect, as it makes it impossible for all the other cartel members together to denounce the cartel to the antitrust enforcement authority, obtain immunity themselves, and have the deviator penalised by the authority. One may nevertheless wonder whether it would be possible to set up a system in which one cartel member would play a central role in organizing and administering the cartel, and would be the only one to have all the evidence of the cartel, and could use this position to deter the other cartel members from deviating from the cartel agreement under the threat of a leniency application. It would however seem very unlikely that the other cartel members would be willing to enter into such an agreement, as they would have to trust the ringleader to act exclusively in the common interest, and would risk being the co-victim of deviations by one of the other non-ringleaders. This would only be different if the ringleader could coerce the other cartel members into the agreement. The European Commission's leniency programme, however, excludes coercers from immunity.⁷³

C. Negative moral effects and the problem of recidivism

Corporate managers are not necessarily just maximizers of profits for themselves and their principals. They may feel a moral responsibility to live within the law whether or not they are likely to be caught, and this normative commitment could trump their interest calculus. The public punishment of those who violate the antitrust prohibitions has thus not only a deterrent effect, in that it helps creating a credible threat of punishment for those who would be willing to commit violations on the basis of a profit calculation, but also has moral effects, in that it sends a message to the spontaneously law-abiding, reinforcing their moral commitment to the rules.⁷⁴

⁷² Story as told by Jan Eijsbouts, Akzo's General Counsel, at <http://www.goodgovernance.nu/verhalen/jan-eijsbouts-deel-1/>. See also text accompanied by notes 87 to 89 below.

⁷³ See above, text accompanying note 11. In some jurisdictions, including the US and Germany, leniency programmes go further in that they also exclude non-coercing sole ringleader; see further my paper 'Leniency in Antitrust Enforcement: Theory and Practice', as note 32 above, at footnote 140.

⁷⁴ See C.D. Stone, 'Sentencing the corporation' (1991) 71 *Boston University Law Review* 383 at 389; J. Adenaes, 'The Moral or Educative Influence of Criminal Law' (1971) 27 *Journal of Social Issues* 17, and 'General prevention revisited: research and policy implications' (1975) 66 *Journal of Criminal Law & Criminology* 338, at 341-343; K.G. Dau-Schmidt, 'An Economic Analysis of the Criminal Law as a Preference-Shaping Policy' (1990) *Duke Law Journal* 1, C.R. Sunstein, 'On the Expressive Function of the Law' (1996) 144 *University of Pennsylvania Law Review* 2021, D.M. Kahan, 'Social

For people to have such moral commitment to the law, however, it is important that the law and its enforcement are perceived to be fair.⁷⁵ Leniency, in particular in its strongest form of immunity, may raise two (closely related) concerns in this respect.⁷⁶

First, there may be concerns about the retributive injustice of an antitrust offender escaping punishment. The main response to this concern is to design and apply leniency programmes in such a way as to ensure that no more leniency is granted than strictly necessary to obtain the positive enforcement effects, and to stress the condition for any beneficiary of leniency, and in particular of immunity, to provide genuine and full cooperation to the enforcement authorities. This appears to be reflected in the case law of the EU Court of Justice, which has emphasized that for companies to benefit from leniency under the European Commission's Leniency Notice, their conduct must reveal 'a genuine spirit of cooperation'.⁷⁷ Requiring restitution to injured parties as a condition for leniency may also help to assuage justice concerns.⁷⁸

A second (closely related) concern focuses on the unequal treatment between the beneficiary of immunity or leniency and the other cartel participants, who receive full punishment for the same antitrust violation.⁷⁹ Again the main response is to ensure that leniency is only granted to the extent that the company or individual has genuinely and effectively cooperated with the competition authority, thus objectively distinguishing its situation from the other cartel participants that have not done so, or not to the same extent, or at the same early point in time. Equally important is to ensure that leniency policies are applied in a transparent and consistent way, thus providing an equal chance for all cartel participants to benefit from them. In this respect, the EU General Court has

Influence, Social Meaning, and Deterrence' (1997) 83 *Virginia Law Review* 349, N.K. Katyal, 'Deterrence's Difficulty' (1997) 95 *Michigan Law Review* 2385, G.E. Lynch, 'The Role of Criminal Law in Policing Corporate Misconduct' (1997) 60 *Law and Contemporary Problems* 23, D.M. Kahan, 'Social Meaning and the Economic Analysis of Crime' (1998) 27 *Journal of Legal Studies* 609, and K.G. Dau-Schmidt, 'Preference shaping by the law', in P. Newman (ed.), *The New Palgrave Dictionary of Economics and the Law* (Macmillan 1998) 84.

⁷⁵ See T.R. Tyler, *Why People Obey the Law* (Yale UP, 1990), as well as the literature listed in note 74 above.

⁷⁶ See also OECD, *Fighting Hard-Core Cartels – Harm, Effective Sanctions and Leniency Programmes* (2000), available at <http://www.oecd.org/dataoecd/41/44/1841891.pdf>, at 26.

⁷⁷ Judgments in *Dansk Rorindustri and Others v Commission*, C-189/02 P, EU:C:2005:408, paragraphs 388-403, in *Commission v SGL Carbon*, C-301/04 P, EU:C:2006:432, paragraph 68, and in *Schenker*, C-681/11, EU:C:2013:404, paragraphs 36, 46 and 49.

⁷⁸ See see further my papers 'Leniency in Antitrust Enforcement: Theory and Practice', as note 32 above, at footnote 146, and 'The Relationship between Public Antitrust Enforcement and Private Actions for Damages', (2009) 32 *World Competition* 3, also accessible at <http://ssrn.com/author=456087>, at footnotes 101 to 106; J. Rivas and G. Eclair-Heath, 'Striking the balance between public and private enforcement: The case for consensual compensation as a mitigating circumstance in setting fines for violations of EU competition law', (2014) *Concurrences*, Art. N° 62573, www.concurrences.com; and C. Prieto, 'Incitations aux réparations spontanées dans le cadre du public enforcement', (2016) *Concurrences* N° 2-2016, www.concurrences.com.

⁷⁹ See also D. Voillemot, as note 57 above, at 99-100.

stressed that, under the general principle of equal treatment, the European Commission must ensure that it does not distort the conditions of competition between undertakings in a (potential) race to be the first to cooperate, by contacting one of them, or giving them unequal access when they contact the European Commission.⁸⁰

Both concerns, as to the guilty remaining unpunished and as to co-conspirators being treated unequally, would appear to be particularly acute in the case of immunity being granted to the ringleader of a cartel, in particular if that ringleader has coerced other cartel members into committing the infringement. As already mentioned above, under the European Commission's leniency programme, coercers are excluded from immunity.⁸¹

Both concerns, as to the guilty remaining unpunished and as to co-conspirators being treated unequally, would also appear to be particularly acute in the case of immunity being granted to a **recidivist**, in particular if the other cartelists being fined are not recidivists.⁸²

One could consider excluding recidivists from leniency, or at least from the benefit of immunity from fines: Until a few years ago, the leniency programme of the Greek competition authority excluded recidivists from immunity from fines.⁸³

However, the exclusion of recidivists from leniency comes at a substantial cost. As explained above, leniency generally has very significant benefits in terms of improved collection of evidence and intelligence of cartel infringements and in terms of increased difficulty of creating and maintaining cartels.⁸⁴ The more cartelists are excluded from seeking immunity or leniency, the less these benefits can accrue. In the extreme case where the same group of undertakings which were all found to have participated in a cartel subsequently start a new cartel, the exclusion of recidivists from leniency would shelter this new cartel from the positive enforcement effects of leniency, and would thus

⁸⁰ Judgments in *Krupp Thyssen and Others v Commission*, T-45/98, EU:T:2001:288, paragraphs 237-248, and in *BASF v Commission*, T-15/02, EU:T:2006:74, paragraph 504. The European Commission would thus not be allowed to adopt the US Department of Justice's practice of 'affirmative amnesty', under which the latter authority approaches a company – which may at the time not even know that it or its competitors are under investigation – to cooperate and seek leniency; see S.D. Hammond, 'Measuring the Value of Second-In Cooperation in Corporate Plea Negotiations', address to the 54th Annual American Bar Association Section of Antitrust Law Spring Meeting (Washington D.C., 29 March 2006), available at <http://www.usdoj.gov/atr/public/speeches/215514.pdf>, at 11.

⁸¹ See (text accompanying) notes 11 and 73 above.

⁸² See my paper 'Recidivism in EU Antitrust Enforcement: A Legal and Economic Analysis' (2012) 35 *World Competition* 5, also accessible at <http://ssrn.com/author=456087>, at footnotes 77 to 82.

⁸³ Decision N° 299/V/2006 of the Plenary of the Hellenic Competition Commission, point A.4(e) ("the undertaking must not have participated in the past in a prohibited collusive practice for which a decision by a National Competition Authority or the European Commission has been issued"). In 2011, however, the Greek competition authority changed its leniency programme, and recidivists can now also obtain immunity from fine; see Decision 526/VI/2011 of 30 August 2011.

⁸⁴ See text accompanying notes 34 to 54 above.

render this new cartel easier to create and maintain and more difficult to detect and punish. Paradoxically, excluding recidivists from leniency thus encourages recidivism.

On balance, excluding recidivists from leniency or from immunity from fines would thus not appear to be a good idea.

Table 3 below shows, for the cartel decisions adopted by the European Commission in the period 2006 - 2015, the total number of undertakings that were held liable for cartel infringements, and the number among these that were found to be recidivists, as well as the number of immunity recipients, and the number among these that were recidivists.⁸⁵

Period	2006 - 2010	2011 - 2015	Total 2006 - 2015
Total number of detected cartel participants	228	125	353
of which recidivists	27 = 12 %	1 = 1 %	28 = 8 %
Number of immunity recipients	25	21	46
of which recidivists	8 = 32 %	1 = 5 %	9 = 20 %

Table 3: Recidivists and immunity recipients

Table 3 shows that recidivists are statistically better represented among immunity recipients (20 %) than among the total population of detected cartel participants (8 %). On the other hand, it should be noted that only 9 out of 46 recidivists were granted immunity. Most recidivists were thus fined, and more heavily than other cartelists, because of the treatment of recidivism as an aggravating circumstance.⁸⁶ Moreover,

⁸⁵ See note 25 above and the Annex to this paper.

⁸⁶ The European Commission's 2006 Fining Guidelines, as note 16 above, threaten an increase of up to 100 % in case of one prior infringement, 200 % in case of two prior infringements, 300 % in case of three prior infringements, 400 % in case of four prior infringements, and so on *ad infinitum*. However, the Commission has not made full use of the possibilities offered by its 2006 Fining Guidelines, increasing in practice fines by 50 % in case of one prior infringement, 60 % in case of two prior infringements, 90 % in case of three prior infringements, and 100 % in case of four prior infringements; see E. Barbier de La Serre and C. Winckler, 'Legal Issues Regarding Fines Imposed in EU Competition Proceedings' (2010) 1 *Journal of Competition Law & Practice* 327 at 336-337 and 'A Survey of Legal Issues Regarding Fines Imposed in EU Competition Proceedings (2010)' (2011) 2 *Journal of Competition Law & Practice* 356 at 360-361 and my paper 'Recidivism in EU Antitrust Enforcement: A Legal and Economic Analysis', as note 82 above, at footnotes 58 to 60.

where several participants to the same cartel are recidivists, only one of them can possibly receive immunity.

That recidivists are statistically better represented among the immunity recipients than among the total population of detected cartel participants is not necessarily abnormal or worrying. One would want and expect an undertaking that has been found to have participated in an antitrust infringement to take measures so as to avoid continued or new violations, including by establishing effective compliance programmes.⁸⁷ The first-best outcome of these measures would of course be that no new infringements are committed. However, if this is not achieved, the second-best outcome is that, thanks to the compliance programme, the new infringements are quickly detected and reported to the competition authorities.⁸⁸ The higher percentage of recidivists among immunity recipients may reflect this second-best outcome.

What is also apparent from Table 3 above, when comparing the figures for the 2006 - 2010 period with those of the 2011 - 2015 period, is that the number of (detected) recidivists has spectacularly declined in recent years.⁸⁹

D. The impact of fines on the market structure

As Advocate General Geelhoed has pointed out, "in the event of a collective infringement like a cartel as opposed to an infringement by a single offender, the [European] Commission must also consider the subsequent effects of the fines and take into account the size of a given company. [...] The example [...] is a cartel consisting of one big player and several small players. The big player cooperated with the Commission and receives immunity under the Leniency Notice. In such cases very high fines could have put the smaller players out of business, in which case the Commission's intervention would have resulted in a monopoly".⁹⁰

⁸⁷ On compliance programmes, see my paper 'Antitrust compliance programmes and optimal antitrust enforcement' (2013) 1 *Journal of Antitrust Enforcement* 52, also accessible at <http://ssrn.com/author=456087>; B. Fisse, 'Reconditioning Corporate Leniency: The Possibility of Making Compliance Programmes a Condition for Immunity', in C. Beaton-Wells and C. Tran (eds), *Anti-Cartel Enforcement in a Contemporary Age Leniency Religion* (Hart 2015), 179; and H. Bergman and D.D. Sokol, 'The Air Cargo Cartel: Lessons for Compliance', in C. Beaton-Wells and C. Tran (eds), as just above, 301; see also text accompanying note 72 above for the example of Akzo.

⁸⁸ Compare with Judgment in *Shell v Commission*, T-38/07, EU:T:2011:355, paragraph 96, last sentence, and see text accompanying note 72 above for the example of Akzo.

⁸⁹ See already my paper 'Recidivism in EU Antitrust Enforcement: A Legal and Economic Analysis', as note 82 above, at footnotes 86 to 89, and OECD Policy Roundtable, *Serial offenders: Why some industries seem prone to endemic collusion* (2015), DAF/COMP/GF(2015)4, available at [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/GF\(2015\)4&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/GF(2015)4&docLanguage=En), at 35-37.

⁹⁰ Opinion in *Showa Denko v Commission*, C-289/04 P, EU:C:2006:52, paragraph 61 and footnote 16; see also my paper 'Optimal Antitrust Fines: Theory and Practice', as note 42 above, at footnotes 94 to 96.

Table 4 provides some statistics for all the decisions adopted in the 2006 – 2015 period in which immunity was granted.⁹¹ It appears that in 46 % of the cases the immunity recipient was the cartel participant with the highest turnover in the market affected by the cartel, whereas on average there were 7 participants per cartel, and the undertaking with the highest turnover should thus have been the immunity recipient in only 15 % of the cases if there had been no correlation between being the undertaking with the largest turnover and being the immunity recipient.

Period	2006 - 2015
Number of immunity recipients	46
Number of immunity recipients with the highest turnover in the market affected by the cartel	21 = 46 %
Total number of undertakings involved	316
Average number of undertakings per cartel	7

Table 4: Immunity recipients with the highest turnover in the affected market

Given that under the European Commission's 2006 Fining Guidelines the fines are calculated as a percentage of each undertaking's turnover in the goods or services affected by the cartel,⁹² the above result should not come as a surprise: The undertakings with the largest affected turnover can expect the highest fine, and hence have the most to gain from applying for leniency.

Should we thus be concerned about the scenario identified by Advocate General Geelhoed, in which the imposition of fines would result in the market becoming monopolistic?

On the reassuring side, it should be pointed out that, whereas in 46 % of the cases the immunity recipient has the largest turnover affected by the cartel, in many of these cases the other cartel participants are also large companies that cannot easily be fined out of business.

Moreover, and most importantly, the European Commission has a policy of capping fines so as to avoid undertakings going out of business because of a fine. Indeed, in addition to

⁹¹ See note 25 above and the Annex to this paper.

⁹² See note 16 above.

the 10 % of total turnover cap laid down in Article 23(2) of Regulation 1/2003,⁹³ the European Commission reduces fines on the ground of inability to pay.⁹⁴

On the other hand, in the absence of perfect capital markets, high fines can have a negative effect on the competitiveness of smaller companies, even below the level of inability to pay, and may thus negatively affect market structure.⁹⁵

E. Exclusive reliance on leniency

As explained above,⁹⁶ the main benefit of a well-designed leniency programme is that it significantly reduces the difficulty, time and administrative cost of collecting intelligence and evidence of cartel infringements.

It is important to note, however, that leniency is not a substitute but a complement to other methods of collecting intelligence and evidence of cartel infringements. Indeed, leniency will work well if the cartel participants concerned perceive a risk that the competition authorities will detect and establish the cartel infringement without recourse to leniency. The risk could be a specific one, where the competition authority is already collecting or receiving information of the cartel infringement by other means (or is believed to be doing so, or to be doing so in the near future) or a more general one, where a competition authority, as a result of many other recent cases of successful detection and prosecution, is believed to be good at it. If leniency policies are well designed in that immunity is only granted to the first co-conspirator to come forward, and reductions in penalties are linked to the timing of the cooperation as compared to the other co-conspirators, cartel participants may decide to cooperate out of fear that a co-conspirator

⁹³ See note 18 above.

⁹⁴ See paragraph 35 of the 2006 Fining Guidelines, as note 16 above; Commission Document SEC(2010)737, 'Inability to pay under paragraph 35 of the 2006 Fining Guidelines and payment conditions pre-and post-decision finding an infringement and imposing fines' (June 2010), available at the Register of Commission documents, <http://ec.europa.eu/transparency/regdoc/registre.cfm?CL=en>; and paragraph 87 of the European Commission's Notice on best practices for the conduct of proceedings concerning Articles 101 and 102 TFEU, [2011] OJ C 308/6.

⁹⁵ See my paper 'Optimal Antitrust Fines: Theory and Practice', as note 42 above, at footnotes 67 to 71. In addition, negative effects on the market structure could also result from follow-on actions for damages, which may be difficult to anticipate in the assessment of inability to pay. As mentioned above (text accompanying note 23), Directive 2014/104/EU has limited the liability of immunity recipients in follow-on actions for damages to their direct or indirect purchasers or providers, thus potentially shifting more liability for damages to smaller competitors, but has also added a provision protecting small or medium-sized enterprises under certain conditions; see Article 11(2) and (3) of Directive 2014/14/EU, as note 23 above. See further my paper 'The Relationship between Public Antitrust Enforcement and Private Actions for Damages' (2009) 32 *World Competition* 3, also accessible at <http://ssrn.com/author=456087>, at footnotes 128 to 133.

⁹⁶ See text accompanying notes 35 to 43 above.

may do so before them.⁹⁷ Such a ‘race to cooperate’ may amplify the positive effects of leniency, but again such a race is most likely to start if there is a risk that the competition authorities will detect and establish the antitrust violation without recourse to leniency, or at least a belief by at least one of the conspirators that at least one of the other co-conspirators may believe that there is such a risk.⁹⁸

A leniency policy will thus work well if the antitrust enforcement authority concerned has first built up a sufficient level of credibility as to its capacity to detect and punish cartel infringements on its own. As the statistics in Table 1 above show, the European Commission had already a good track record in detecting and punishing cartels by the time it introduced its leniency programme in 1996. Without this track record, the leniency programme could not have achieved the same rapid success.

For authorities that have managed to build up sufficient credibility, and subsequently operate a successful leniency programme, there may be a risk in relying too much on this success. If for a prolonged period they do not detect and prosecute any case anymore other than through leniency, they may lose their capacity to do so, or at least cartelists may start doubting their continued capacity to do so. If this were to happen, the success of their leniency programmes would risk coming to an end.⁹⁹

Table 5 below shows the number of European Commission decisions concerning cartels that were not detected through leniency (so-called *ex officio* cartel investigations).¹⁰⁰ As can be seen from the comparison of these statistics with those in Table 1 above, in some of the cases where the cartel was not detected through leniency there was still a grant of immunity to the first cartel participant to cooperate, because at the time of this first leniency application, the European Commission, while having already some information obtained from another source, did not yet have sufficient information to establish the cartel infringement up to the requisite legal standard.¹⁰¹

⁹⁷ See also M. Bigoni, S.O. Fridolfsson, C. Le Coq and G. Spagnolo, 'Trust, Leniency and Deterrence' (2014), available at <http://ssrn.com/abstract=2469778>.

⁹⁸ See my paper 'Leniency in Antitrust Enforcement: Theory and Practice', as note 32 above, at footnotes 91 to 94; and OECD Policy Roundtable, *Ex officio cartel investigations and the use of screens to detect cartels* (2013), available at <http://www.oecd.org/daf/competition/exofficio-cartel-investigation-2013.pdf>.

⁹⁹ See my paper 'Leniency in Antitrust Enforcement: Theory and Practice', as note 32 above, at footnotes 131 and 132.

¹⁰⁰ See note 25 above and the Annex to this paper.

¹⁰¹ See text accompanying note 5 above.

Period	Number of decisions following <i>ex officio</i> cartel investigations
1986 - 1990	9
1991 - 1995	8
1996 - 2000	9
2001 - 2005	15
2006 - 2010	9
2011 - 2015	2

Table 5: Decisions following *ex officio* cartel investigations

Whereas in the 2001 - 2005 and 2006 - 2010 periods there were still many decisions concerning cartels that had not been detected through leniency, there were only two such decisions in the 2011 - 2015 period, the most recent being the December 2014 decision concerning the *Envelopes* cartel, which was detected thanks to information received from an informant.¹⁰²

While some *ex officio* investigations have started with information obtained from other authorities or gleaned from the specialised press, informants have always been the main source of information allowing the detection of cartels other than through leniency.¹⁰³

¹⁰² Decision of 10 December 2014 in Case AT.39780 *Envelopes*, Summary publication in [2015] OJ C 74/5.

¹⁰³ See also M.E. Stucke, 'Leniency, Whistle-Blowing and the Individual: Should We Create Another Race to the Competition Agency?', in in C. Beaton-Wells and C. Tran (eds), *Anti-Cartel Enforcement in a Contemporary Age Leniency Religion* (Hart 2015), 209.

Whereas it has often been suggested (not always disinterestedly) that econometric tools could be used to detect cartels, the experience with such tools has not been good. In the United States, the Department of Justice Antitrust Division has in the past employed several methods for cartel screening and found that those methods did not produce solid leads for cartel investigations; see OECD Policy Roundtable, *Ex officio cartel investigations and the use of screens to detect cartels* (2013), available at <http://www.oecd.org/daf/competition/exofficio-cartel-investigation-2013.pdf>, at 38, footnote 129. Similarly, the European Commission's attempt to use economic data analysis in the *Cement* cartel investigation has delivered no results, while consuming a huge amount of resources; see information on the opening and closure of proceedings in Case 39520 *Cement and related products* on the European Commission's website <http://ec.europa.eu/competition/antitrust/cases/index.html>; Opinion of Advocate General Wahl in *HeidelbergCement v Commission*, C-247/14 P, EU:C:2015:694; and Judgment in *HeidelbergCement v Commission*, C-247/14 P, EU:C:2016:149. See also text accompanying note 35 above.

It is thus important that the European Commission keeps signalling that it welcomes information from informants, including of course anonymous informants, and follows up leads provided by informants so as to continue detecting cartels without leniency, and thus to ensure the continued success of its leniency programme.

IV. ANNEX ¹⁰⁴

A. Cartel decisions with fines 1986 – 2015: cartel duration and detection method

Year	Case number	Case name (product concerned)	Number of parties	Duration of cartel	Detection method	Date of detection	Cartel ongoing at date of detection
1986	31.149	Polypropylene	15	from 1977 until at least inspections in October 1983	own initiative	before inspections in October 1983	yes
1986	31.371	Roofing felt	7	1 January 1978 to 9 April 1984	customer complaint	complaint on 11 November 1983	yes
1986	31.204	MELDOC (liquid milk and liquid dairy products)	5	from 1978 to the end of July 1984	own initiative	before Commission letter of 6 June 1984	yes
1986	31.128	Fatty acids (oleochemicals: oleine and stearine)	3	September 1979 to 1 January 1983	own initiative	before inspections in February 1982	yes
1988	31.906	Flat glass (Italy)	3	1 January 1982 to 30 June 1987	customer complaint	before inspections in July 1986	yes
1988	31.865	PVC	17	from August 1980 until after the inspections in November 1983	investigation of another thermoplastic product	before inspections on 21 November 1983	yes
1988	31.866	LdPE (low density polyethylene)	17	from September 1976 until after the inspections in November 1983	investigation of another thermoplastic product	before inspections on 21 November 1983	yes
1989	31.553	Welded steel mesh	14	from 27 May 1980 until 5 November 1985	own initiative	before inspections on 6 November 1985	yes
1990	33.133	Soda-ash	3	from 1973 until 1990	own initiative	before inspections in March 1989	yes

¹⁰⁴ See note 25 above for an explanation of the choice of decisions included in this Annex.

1992	31.572 and 32.571	Building and construction industry in the Netherlands	28	from 10 December 1963 until 1992 (but fine only for period prior to notification on 13 January 1988)	notification	notification on 13 January 1988	yes
1992	30.717-A	Eurocheque: Helsinki Agreement	2 (associations of undertakings)	from 19 May 1983 until May 1991 (but fine only for period prior to notification on 16 July 1990)	notification	notification on 16 July 1990	yes
1992	32.450	French-West African shipowners' committees	15 fined + 4 companies "which contributed in drawing the attention of the Commission to the practices dealt with in this Decision" not fined	from before 1 July 1987 until 1992	complaints by a competitor association and a Member State	complaints on 10 and 20 July 1987	yes
1994	94/2015/ECS C	Steel beams	19	at least since 1984 until 1994 (fines for period from 1 July 1988)	"information received by the Commission"	before inspections on 16 January 1991	yes
1994	33.833	Cartonboard	19	from mid-1986 until at least April 1991	informal customer complaint	before inspections on 23 April 1991	yes
1994	33.126 and 33.322	Cement	42	from 14 January 1983 until 26 March 1993	own initiative	before inspections in April 1989	yes
1994	33.218	Far Eastern Freight Conference	13	since around 1971 until 1994	customer complaint	complaint on 28 April 1989	yes
1995	34.179, 34.202, 2.6	SCK and FNK (hiring out of mobile cranes)	2 (1 association of undertakings and 1 undertaking)	from 15 December 1979 until 4 November 1993	complaint by a competitor not involved in the cartel	complaint on 13 January 1992	yes
1996	34.983	Fenex (Dutch association of forwarding agents)	1 (association of undertakings)	20 years until 1 July 1993 (fine only for period from 10 January 1989)	own initiative	before 1 July 1993	yes
1996	34.503	Ferry operators – Currency surcharges	5	2 October 1992 until 31 December 1992	own initiative	before inspections on 6 April 1993	no
1998	35.814	Alloy surcharge (stainless steel)	6	from 16 December 1993 until 1998	reports in the specialised press and unofficial complaints from customers	before requests for information on 16 March 1995	yes

1998	33.708, 33.709, 33.710, 33.711	British Sugar	4	20 June 1986 until 2 July 1990 (termination of the agreement by the leniency applicant)	application for leniency (1996 Leniency Notice retroactively applied by analogy)	self-incriminating letter to UK competition authority on 16 July 1990	yes
1998	35.691	Pre-insulated Pipes (pre-insulated pipes used in district heating systems)	10	from December 1990 to March 1996	complaint by a competitor not involved in the cartel	complaint on 18 January 1995	yes
1998	34.466	Greek Ferries	7	from at latest 18 July 1987 until inspections in July 1994	complaint by a member of the public	before inspections in July 1994	yes
1999	33.884	FEG and TU (electrotechnical fittings wholesale market in the Netherlands)	2 (1 association of undertakings and 1 undertaking)	from at least 11 March 1986 to at least 25 February 1994	complaint by competitor	complaint on 19 March 1991	yes
1999	35.860-B	Seamless steel tubes	8	from 1990 to 1995	own initiative	before inspections on 1 December 1994	yes
2000	34.018	Far East Trade Tariff Charges and Surcharges Agreement (FETTCSA) (maritime transport)	15	from 4 June 1991 to 26 May 1994	complaint by customers association	complaint on 15 July 1991	yes
2000	36.545	Amino acids	5	from at least July 1990 until 27 June 1995 (date of FBI searches in USA, following secret DoJ investigation)	press coverage of US investigation + leniency application (1996 Leniency Notice) (but very substantial fine reduction refused because leniency applicant was one of the leaders of the cartel)	1996	no (at date of detection in Europe, but yes at date of detection by US DoJ)
2001	36.490	Graphite electrodes	8	May 1992 to March 1998	own initiative + leniency application (1996 Leniency Notice) (substantial reduction)	inspections on 5 July 1997 and provision of decisive information by leniency applicant in March 1998	yes
2001	37.444 and 37.386	SAS and Maersk Air	2	5 September 1998 to 15 February 2001	customer complaint	complaint on 23 November 1998	yes
2001	37.512	Vitamins	8	September 1989 to February 1999	leniency application (1996 Leniency Notice)	leniency application on 12 May 1999	no (at date of detection in Europe, but yes at date of detection by DoJ in USA)

2001	36.604	Citric acid	5	March 1991 to May 1995 (natural death of the cartel; FBI raids in June 1996)	information obtained from US Department of Justice + leniency application (1996 Leniency Notice)	information obtained in August 1995 ; leniency application in October 1998	no
2001	37.614	Interbrew and Alken-Maes (Belgian beer market)	4	28 January 1993 to 7 July 1998	own initiative	before inspections on 26 October 1999	no
2001	37.800	Luxembourg breweries	4	8 October 1985 to 16 February 2000	leniency application (1996 Leniency Notice)	leniency application on 16 February 2000	yes
2001	37.027	Zinc phosphate	6	24 March 1994 to 13 May 1998	own initiative	before inspection on 13 May 1998	yes
2001	37.919	Bank charges for exchanging euro-zone currencies - Germany	5	15 October 1997 to 11 December 2011	own initiative	before requests for information on 8 February 1999	yes
2001	36.212	Carbonless paper	10	January 1992 to September 1995 (last date for which corroborated evidence, but suspicions that still ongoing at the time of the leniency application)	leniency application (1996 Leniency Notice)	leniency application in autumn 1996	unclear
2002	36.571	Austrian banks – 'Lombard Club'	8	1 January 1995 to end of June 1998	press reports	before inspections in June 1998	yes
2002	37.519	Methionine	4	February 1986 to February 1999 (termination by leniency applicant)	leniency application (1996 Leniency Notice)	leniency application in May 1999	no
2002	36.700	Industrial and medical gases	7	1989 to 1991 and 1993 to 1997	own initiative	before inspections on 11 December 1997	yes
2002	37.784	Fine art auction houses	2	30 April 1993 to at least 7 February 2000	leniency application (1996 Leniency Notice)	leniency application in January 2000	yes
2002	37.152	Plasterboard	4	31 March 1992 to 25 November 1998	"in response to information received"	before inspections on 25 November 1998	yes

2002	37.987	Methylglucamine	3	22 November 1990 to 31 December 1999 (according to the leniency applicant the cartel continued until the date of the leniency application, but this is contested by the other cartel participant concerned, and the Commission has no hard evidence to choose between the two versions of the facts)	leniency application (1996 Leniency Notice)	leniency application on 27 September 2000	unclear
2002	37.671	Food flavour enhancers	4	8 November 1988 to 2 June 1998	leniency application (1996 Leniency Notice)	leniency application on 9 September 1999	no
2002	37.667	Specialty graphite	8	July 1993 to February 1998	leniency application (1996 Leniency Notice)	leniency application on 13 April 1999	no
2002	37.956	Reinforcing bars	8	6 December 1989 to 4 July 2000 (insufficient evidence after that date)	own initiative	before inspections in December 2000	no
2003	38.279	French beef	6 (associations of undertakings)	24 October 2001 to at least 11 January 2002	"having learned of the signature of the agreement"	before Commission letter of 30 October 2001	yes
2003	37.370	Sorbates	5	31 December 1978 to 31 October 1996	leniency application (1996 Leniency Notice)	leniency application on 29 September 1998	no
2003	38.359	Electrical and mechanical carbon and graphite products	6	October 1988 to December 1999	leniency application (1996 Leniency Notice)	leniency application on 18 September 2001	no
2003	37.857	Organic peroxides	6	1 January 1971 to 31 December 1999	leniency application (1996 Leniency Notice)	leniency application on 7 April 2000	no
2003	38.240	Industrial tubes	3	May 1988 to March 2001	leniency application (1996 Leniency Notice) – same leniency applicant as in 38.069 Copper plumbing tubes – the leniency applicant was not found liable of any infringement because it had acquired control of a company which had already left the cartel at the time of the acquisition of control	leniency application on 9 January 2001	yes
2004	38.069	Copper plumbing tubes	9	June 1988 to March 2001	leniency application (1996 Leniency Notice)	leniency application on 9 January 2001	yes

2004	37.750	French beer market	2	agreement concluded on 21 March 1996 but never put into effect	information obtained during another investigation (37.614 Interbrew and Alken-Maes (Belgian beer market))	information obtained on 23 December 1999	no
2004	38.238	Raw tobacco Spain	9	1996 to 2001	"on the basis of information"	before inspections on 3 October 2001	yes
2004	38.338	Needles	3	10 September 1994 to 31 December 1999	leniency application (1996 Leniency Notice)	leniency application on 21 August 2001	no
2004	37.533	Choline chloride	6	13 October 1992 to at least 30 September 1998 (last meeting among the European members of the cartel on an unknown date in October 1998; meetings had taken place every three months)	leniency application (1996 Leniency Notice)	leniency application in April 1999	no
2005	37.773	MCAA (Monochloroacetic acid)	4	1 January 1984 to 7 May 1999 (last known multilateral meeting – further meetings between June and December 1999 concerned the dismantling of the arrangements)	leniency application (1996 Leniency Notice)	leniency application on 6 December 1999	no
2005	38.337	Thread	7	January 1990 to 18 September 2001 (last cartel meeting of which the Commission is aware – next meeting was planned for 17 September 2002)	inspections in another investigation (38.338 Needles)	inspections on 7 November 2001	yes
2005	38.281	Raw tobacco Italy	4	29 September 1995 to 19 February 2002	information received by the Commission	before requests for information on 15 January 2002	yes
2005	38.354	Industrial bags	15	January 1982 to June 2002	leniency application (1996 Leniency Notice)	leniency application in November 2001	yes
2005	38.443	Rubber chemicals	4	1 January 1996 to 31 December 2001 (but no evidence that the cartel participants other than the leniency applicant withdrew from the cartel before the inspections on 26 September 2002)	leniency application (2002 Leniency Notice)	leniency application on 22 April 2002	yes

2006	38.620	Hydrogen peroxide and perborate	9	at least from 31 January 1994 to 31 December 2000 (still some bilateral but no longer multilateral contacts in years 2001-2002)	leniency application (2002 Leniency Notice) by Degussa	leniency application on 13 December 2002	no (?)
2006	38.645	Methacrylates	5	at least from 23 January 1997 to 12 September 2002 (insufficient evidence that cartel lasted beyond the meeting on the latter date)	leniency application (2002 Leniency Notice) by Degussa	leniency application on 20 December 2002	unclear
2006	38.456	Bitumen - Netherlands	14	at least from 1 April 1994 until 15 April 2002 (indications that collusive agreements only stopped at time of Commission inspections on 1 October 2002)	leniency application (2002 Leniency Notice) by BP	leniency application in June 2002	yes (?)
2006	38.121	Fittings (copper fittings)	11	31 December 1988 to 1 April 2004	leniency application (1996 Leniency Notice) by Mueller	leniency application in January 2001	yes
2006	38.638	Butadiene rubber and emulsion styrene butadiene rubber	5	from at least 20 May 1996 until at least 28 November 2002	leniency application (2002 Leniency Notice) by Bayer	leniency application in December 2002	yes
2007	38.899	Gas insulated switchgear	11	15 April 1988 to 11 May 2004	leniency application (2002 Leniency Notice) by ABB	leniency application on 3 March 2004	yes
2007	38.823	Elevators and escalators (Belgium / Germany / Luxembourg / Netherlands)	4	from 1995 to 29 January 2004	own initiative "using information brought to the Commission's attention" + leniency applications (2002 Leniency Notice) by Kone (Belgium / Luxembourg) and Otis (Netherlands)	surprise inspections on 29 January 2004	yes
2007	37.766	Netherlands beer market	4	27 February 1996 to 3 November 1999	leniency application (1996 Leniency Notice) by InBev (following own initiative discovery of Belgian beer cartel)	leniency application in January 2000, following internal investigation, following request for information by Commission concerning Belgian beer cartel in November 1999	yes
2007	39.168	Hard haberdashery: fasteners	6	1991 to 2003	own initiative "after certain information had been brought to the Commission's attention" + leniency application (1996 Leniency Notice) by Prym	surprise inspections in November 2001	yes

2007	38.710	Bitumen Spain	5	1 March 1991 to at least 1 October 2002	leniency application (2002 Leniency Notice) by BP	leniency application before inspections in October 2002	yes
2007	38.432	Professional videotape	3	23 August 1999 until at least 16 May 2002	own initiative	before surprise inspections on 28 May 2002	yes
2007	39.165	Flat glass	4	at least from 9 January 2004 until 22 February 2005	information obtained from national competition authorities	before surprise inspections on 22 February 2005	yes
2007	38.629	Chloroprene rubber	6	from 13 May 1993 until at least 13 May 2002 (document drafted on the latter date constituting direct evidence – lesser evidence beyond that date – evidence less complete for last years of cartel due to Bayer's antitrust compliance programme)	leniency application (2002 Leniency Notice) by Bayer	leniency application on 18 December 2002	yes (?)
2008	38.628	Nitrile butadiene rubber	2	9 October 2000 to 30 September 2002	"surprise inspections in March 2003, prompted by an application for immunity lodged by a third company under the 2002 Leniency Notice"	before inspections in March 2003	no (?)
2008	38.543	International removal services	11	4 October 1984 to 9 September 2003	own initiative	before decision of 23 August 2003 to carry out inspections	yes
2008	38.695	Sodium chlorate	4	21 September 1994 to 9 February 2000	leniency application (2002 Leniency Notice) by EKA Chemicals (Akzo)	leniency application in March 2003	no
2008	39.180	Aluminium fluoride	4	12 July 2000 to 31 December 2000	leniency application (2002 Leniency Notice) by Boliden Odda	leniency application in March 2005	no
2008	39.181	Candle waxes	10	3 September 1992 to 28 April 2005	leniency application (2002 Leniency Notice) by Shell	leniency application before surprise inspections in April 2005	yes
2008	39.188	Bananas	3	1 January 2000 to 31 December 2002	leniency application (2002 Leniency Notice) by Chiquita	leniency application in April 2005	no

2008	39.125	Carglass	4	10 March 1998 to 11 March 2003	anonymous informant ("by letter of 7 October 2003, the Commission received information from a German lawyer, acting on behalf of an unidentified client")	7 October 2003	no
2009	39.406	Marine hoses	6	1 April 1986 to 2 May 2007	leniency application (2006 Leniency Notice) by Yokohama	leniency application on 20 December 2006	yes
2009	39.401	E.ON/GDF (gas)	2	1980 to 30 September 2005	own initiative	before inspection decisions on 5 May 2006	no
2009	39.396	Calcium carbide and magnesium based reagents for the steel and gas industries	10	7 April 2004 until 16 January 2007	leniency application (2002 Leniency Notice) by Akzo	leniency application before 8 December 2006 (date of replacement of 2002 Leniency Notice by 2006 Leniency Notice)	yes
2009	39.129	Power transformers	7	9 June 1999 to 15 May 2003	leniency application (2002 Leniency Notice) by Siemens	leniency application before 8 December 2006 (date of replacement of 2002 Leniency Notice by 2006 Leniency Notice)	no (?)
2009	39.589	Heat stabilisers	11	24 February 1987 to 21 March 2000	leniency application (2002 Leniency Notice) by Chemtura	leniency application before inspections on 12 February 2003	no (?)
2010	38.511	DRAMs (memory chips)	10	1 July 1998 to 15 June 2002	leniency application (2002 Leniency Notice) by Micron	leniency application in mid-2002	yes (?)
2010	39.092	Bathroom fittings and fixtures	17	16 October 1992 to 9 November 2004	leniency application (2002 Leniency Notice) by Masco	leniency application on 15 July 2004	yes
2010	38.344	Prestressing steel	17	1 January 1984 to 19 September 2002	documents handed over by the German national competition authority concerning a court case at a German labour court concerning the dismissal of an employee of WDI who asserted having been involved in the cartel + leniency application (2002 Leniency Notice) by DWK/Saarstahl	information obtained on 9 January 2002 and leniency application before inspections on 19 September 2002	yes

2010	38.866	Animal feed phosphates	6	19 March 1969 to 10 February 2004	leniency application (2002 Leniency Notice) by Kemira	leniency application on 28 November 2003	yes
2010	39.258	Airfreight	11	7 December 1999 to 14 February 2006	leniency application (2002 Leniency Notice) by Lufthansa	leniency application on 7 December 2005	yes
2010	39.309	LCD (liquid crystal displays)	6	5 October 2001 to 1 February 2006	leniency application (2002 Leniency Notice) by Samsung	leniency application in early 2006	yes (?)
2011	39.579	Consumer detergents	3	7 January 2002 to 8 March 2005	leniency application (2006 Leniency Notice) by Henkel	leniency application in early 2008	no
2011	39.482	Exotic fruit (Bananas)	2	28 July 2004 to 8 April 2005	leniency application (2002 Leniency Notice) by Chiquita	leniency application on 8 April 2005	yes
2011	39.605	CRT Glass (cathode ray tubes glass)	4	23 February 1999 to 27 December 2004	leniency application (2006 Leniency Notice) by SCP	leniency application in late 2008	no
2011	39.600	Refrigeration compressors	5	13 April 2004 to 9 October 2007	leniency application (2006 Leniency Notice) by Tecumseh	leniency application in late 2008	no
2012	39.452	Mountings for windows and window doors	9	16 November 1999 to 3 July 2007	leniency application (2006 Leniency Notice) by Roto	leniency application on 4 May 2007	yes
2012	39.462	Freight forwarding	15	1 October 2002 to 21 May 2007	leniency application (2006 Leniency Notice) by Deutsche Post	leniency application in early 2007	yes
2012	39.611	Water management products	3	21 June 2006 to 15 May 2008	leniency application (2006 Leniency Notice) by Pneumatex	leniency application on 21 October 2008	no (?)
2012	39.437	TV and computer monitor tubes	8	24 October 1996 to 15 November 2006	leniency application (2006 Leniency Notice) by Chunghwa	leniency application on 9 March 2007	no (?)
2013	39.748	Automotive wire harnesses	5	6 March 2000 to 22 December 2009	leniency application (2006 Leniency Notice) by Sumitomo	leniency application before December 2009	yes
2013	39.633	Shrimps	4	21 June 2000 to 13 January 2009	leniency application (2006 Leniency Notice) by Klaas Puul	leniency application on 13 January 2009	yes
2013	39.861	Yen interest rate derivatives	7	19 January 2007 to 22 June 2010	leniency application (2006 Leniency Notice) by UBS	leniency application on 17 December 2010	yes
2014	39.801	Polyurethane foam	4	26 October 2005 to 27 July 2010	leniency application (2006 Leniency Notice) by Vita	leniency application on 30 April 2010	yes
2014	39.952	Power exchanges	2	21 June 2001 to 7 February 2012	own initiative	before inspections on 7 February 2012	yes

2014	39.610	Power cables	11	18 February 1999 to 28 January 2009	leniency application (2006 Leniency Notice) by ABB	leniency application before inspections in January 2009	yes
2014	39.792	Steel abrasives	4	3 October 2003 to 15 June 2010	leniency application (2006 Leniency Notice) by Ervin	leniency application on 13 April 2010	yes
2014	39.965	Mushrooms	3	1 September 2010 to 28 February 2012	leniency application (2006 Leniency Notice) by Lutèce	leniency application on 22 December 2011	yes
2014	39.574	Smart card chips	4	September 2003 to September 2005	leniency application (2006 Leniency Notice) by Renesas	leniency application in 2008	no
2014	39.924	Swiss franc interest rate derivatives	4	7 May 2007 to 13 July 2009	leniency application (2006 Leniency Notice) by RBS	leniency application on 9 August 2011	no
2014	39.780	Envelopes	5	8 October 2003 to 22 April 2008	information received from an informant	before inspections on 14 September 2010	no
2015	40.055	Parking heaters (automotive parts)	2	13 September 2001 to 15 September 2011	leniency application (2006 Leniency Notice) by Webasto	leniency application on 15 November 2012	no
2015	39.563	Retail food packaging	10	2 March 2000 to 13 February 2008	leniency application (2006 Leniency Notice) by Linpac	leniency application before inspections on 4 June 2008	yes (?)
2015	40.098	Blocktrains (rail cargo transport services)	3	2 July 2004 to 30 June 2012	leniency application (2006 Leniency Notice) by Kühne + Nagel	leniency application on 28 March 2013	no
2015	39.639	Optical disc drives	8	June 2004 to November 2008	leniency application (2006 Leniency Notice) by Philips	before requests for information in June 2009	no

B. Cartel decisions 2006 – 2015: immunity recipients, relative market shares and recidivism

Year	Case number	Case name (product concerned)	Number of parties	Detection method	Immunity recipient has largest market share	Immunity recipient is recidivist	Other leniency recipients that are recidivists	Other recidivists
2006	38.620	Hydrogen peroxide and perborate	9	leniency application (2002 Leniency Notice) by Degussa	no (Solvay = largest)	yes	2	1
2006	38.645	Methacrylates	5	leniency application (2002 Leniency Notice) by Degussa	no (Atofina = largest)	yes	2	0
2006	38.456	Bitumen - Netherlands	14	leniency application (2002 Leniency Notice) by BP	no (Shell = largest)	no	0	1
2006	38.121	Fittings (copper fittings)	11	leniency application (1996 Leniency Notice) by Mueller	no (Aalberts and Viega = largest)	no	0	0
2006	38.638	Butadiene rubber and emulsion styrene butadiene rubber	5	leniency application (2002 Leniency Notice) by Bayer	no (Enichem = largest)	yes	0	2
2007	38.899	Gas insulated switchgear	11	leniency application (2002 Leniency Notice) by ABB	no (Siemens = largest)	yes	0	0
2007	38.823	Elevators and escalators (Belgium / Germany / Luxembourg / Netherlands)	4	own initiative "using information brought to the Commission's attention" + leniency applications (2002 Leniency Notice) by Kone (Belgium / Luxembourg) and Otis (Netherlands)	mostly no (Otis = largest)	no	1	0

2007	37.766	Netherlands beer market	4	leniency application (1996 Leniency Notice) by InBev (following own initiative discovery of Belgian beer cartel)	no (Heineken = largest)	no	0	0
2007	39.168	Hard haberdashery: fasteners	6	own initiative "after certain information had been brought to the Commission's attention" + leniency application (1996 Leniency Notice) by Prym	no (YKK = largest)	no	0	0
2007	38.710	Bitumen Spain	5	leniency application (2002 Leniency Notice) by BP	no (Repsol and Proas = largest)	no	0	0
2007	38.432	Professional videotape	3	own initiative	n/a	n/a	0	0
2007	39.165	Flat glass	4	information obtained from national competition authorities	n/a	n/a	0	0
2007	38.629	Chloroprene rubber	6	leniency application (2002 Leniency Notice) by Bayer	yes	yes	0	1
2008	38.628	Nitrile butadiene rubber	2	"surprise inspections in March 2003, prompted by an application for immunity lodged by a third company under the 2002 Leniency Notice"	n/a	n/a	1	0
2008	38.543	International removal services	11	own initiative	n/a	n/a	0	0
2008	38.695	Sodium chlorate	4	leniency application (2002 Leniency Notice) by EKA Chemicals (Akzo)	yes	no	0	1

2008	39.180	Aluminium fluoride	4	leniency application (2002 Leniency Notice) by Boliden Odda	no (Boliden Odda = smallest)	no	0	0
2008	39.181	Candle waxes	10	leniency application (2002 Leniency Notice) by Shell	no (Sasol = largest)	yes	0	1
2008	39.188	Bananas	3	leniency application (2002 Leniency Notice) by Chiquita	yes	no	n/a	0
2008	39.125	Carglass	4	anonymous informant ("by letter of 7 October 2003, the Commission received information from a German lawyer, acting on behalf of an unidentified client")	n/a	n/a	0	1
2009	39.406	Marine hoses	6	leniency application (2006 Leniency Notice) by Yokohama	no (Bridgestone = largest)	no	0	0
2009	39.401	E.ON/GDF (gas)	2	own initiative	n/a	n/a	0	0
2009	39.396	Calcium carbide and magnesium based reagents for the steel and gas industries	10	leniency application (2002 Leniency Notice) by Akzo	no (NCHV = largest)	yes	1	0
2009	39.129	Power transformers	7	leniency application (2002 Leniency Notice) by Siemens	yes	no	0	1
2009	39.589	Heat stabilisers	11	leniency application (2002 Leniency Notice) by Chemtura	no (Ciba , Elf Aquitaine and Akzo = largest)	no	1	0
2010	38.511	DRAMs (memory chips)	10	leniency application (2002 Leniency Notice) by Micron	yes	no	0	0
2010	39.092	Bathroom fittings and fixtures	17	leniency application (2002 Leniency Notice) by Masco	no (Ideal Standard = largest)	no	0	0

2010	38.344	Prestressing steel	17	documents handed over by the German national competition authority concerning a court case at a German labour court concerning the dismissal of an employee of WDI who asserted having been involved in the cartel + leniency application (2002 Leniency Notice) by DWK/Saarstahl	no (ArcelorMittal = largest)	yes	1	0
2010	38.866	Animal feed phosphates	6	leniency application (2002 Leniency Notice) by Kemira	no (Tessenderlo Chemie = largest)	no	0	0
2010	39.258	Airfreight	11	leniency application (2002 Leniency Notice) by Lufthansa	yes	no	1	0
2010	39.309	LCD (liquid crystal displays)	6	leniency application (2002 Leniency Notice) by Samsung	yes	no	0	0
2011	39.579	Consumer detergents	3	leniency application (2006 Leniency Notice) by Henkel	no (Procter & Gamble = largest)	no	0	0
2011	39.482	Exotic fruit (Bananas)	2	leniency application (2002 Leniency Notice) by Chiquita	yes	no	n/a	0
2011	39.605	CRT Glass (cathode ray tubes glass)	4	leniency application (2006 Leniency Notice) by SCP	no (NEG = largest)	no	0	0
2011	39.600	Refrigeration compressors	5	leniency application (2006 Leniency Notice) by Tecumseh	no (ACC = largest)	no	0	0
2012	39.452	Mountings for windows and window doors	9	leniency application (2006 Leniency Notice) by Roto	yes	no	0	0

2012	39.462	Freight forwarding	15	leniency application (2006 Leniency Notice) by Deutsche Post	yes	no	0	0
2012	39.611	Water management products	3	leniency application (2006 Leniency Notice) by Pneumatex	no (Reflex = largest)	no	0	0
2012	39.437	TV and computer monitor tubes	8	leniency application (2006 Leniency Notice) by Chunghwa	no	no	0	0
2013	39.748	Automotive wire harnesses	5	leniency application (2006 Leniency Notice) by Sumitomo	yes	no	0	0
2013	39.633	Shrimps	4	leniency application (2006 Leniency Notice) by Klaas Puul	no (Heiploeg = largest)	no	0	0
2013	39.861	Yen interest rate derivatives	7	leniency application (2006 Leniency Notice) by UBS	yes	no	0	0
2014	39.801	Polyurethane foam	4	leniency application (2006 Leniency Notice) by Vita	yes	no	0	0
2014	39.952	Power exchanges	2	own initiative	n/a	n/a	n/a	0
2014	39.610	Power cables	11	leniency application (2006 Leniency Notice) by ABB	no	yes	0	0
2014	39.792	Steel abrasives	4	leniency application (2006 Leniency Notice) by Ervin	no (MTS = largest)	no	0	0
2014	39.965	Mushrooms	3	leniency application (2006 Leniency Notice) by Lutèce	yes	no	0	0
2014	39.574	Smart card chips	4	leniency application (2006 Leniency Notice) by Renesas	no	no	0	0

2014	39.924	Swiss franc interest rate derivatives	4	leniency application (2006 Leniency Notice) by RBS	no	no	0	0
2014	39.780	Envelopes	5	information received from an informant	n/a	n/a	0	0
2015	40.055	Parking heaters (automotive parts)	2	leniency application (2006 Leniency Notice) by Webasto	yes	no	0	0
2015	39.563	Retail food packaging	10	leniency application (2006 Leniency Notice) by Linpac	no	no	0	0
2015	40.098	Blocktrains (rail cargo transport services)	3	leniency application (2006 Leniency Notice) by Kühne + Nagel	yes	no	0	0
2015	39.639	Optical disc drives	8	leniency application (2006 Leniency Notice) by Philips	no	no	0	0
