

# EUROPEAN COMMISSION'S FIGHT AGAINST CARTELS (1962-2014): A RETROSPECTIVE AND FORENSIC ANALYSIS<sup>1</sup>

## Abstract

On the basis of information collected from all the published European Commission's decisions in cartel cases between 1962 and 2014, this paper identifies different stages in the supra-nationalization of cartel policy at the European Union (EU) level. It analyses major competition policy reforms, strategies and initiatives taken by the European Commission (EC), and its relationship and interaction with State members' resistance and other policy players' positions, which offers a new in-depth study on the history and political economy of a key pillar of EU integration. It also provides a forensic analysis of the sanctioned cartels at each stage. This study shows that the introduction of the leniency program was a critical juncture that allowed cartel authorities to identify cartels more effectively and to provide evidence for sanctioning collusion much more easily than before. This success was a key determinant for deepening the EU integration in competition policy. The intended drivers and the paradoxically unexpected shifters of such growing integration in cartel policy enforcement at the EU are discussed.

**Keywords:** Competition Policy; Cartels; European Union; Leniency.

**JEL Codes:** D7; K2; L4; O4.

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## 1. Introduction

Cartel activity is almost always covert and secret, and participants often engage in affirmative acts of concealment (Werden, 2009). While the prohibition of cartels is enshrined in the European Union's founding treaties, the fight against cartels shows neither the same determination in competition law enforcement nor the same outcomes over time. As McGowan (2007) argues "few policies hold as much promise and tell us more about the processes and depths of European integration."

This paper has two basic objectives. Firstly, it seeks to make a retrospective in-depth study of the changes in EC competition policy in its fight against cartels. This analysis allows us to analyse major competition policy reforms, strategies and initiatives undertaken by the EC, and the relationship of Commission initiatives to Member States' reactions, as well as the role played by other agents in shaping anti-cartel policy reforms. Secondly, a forensic analysis of all sanctioned cartels since the EU's foundation to 2014 has been undertaken, and the underlying dynamics across different stages is analysed.<sup>2</sup>

Carree et al (2010) has already studied the procedures of all the European Commission's decisions taken on antitrust cases up to 2004; while Buch-Hansen and Levallois (2015) studied European cartels up to 2008 offering a geographical perspective on uncovered collusion. As far as we know, this is the first paper that undertakes such a detailed analysis up to 2014 that discusses the dynamics of effectiveness of EU cartel policy across time.

Our main contribution is that we offer new evidence on the design and implementation of anti-cartel policy that can be used in political science and the historical analysis of

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<sup>2</sup> Connor (2007) and Schinkel (2007) explain what is considered to be "forensic economics".

European integration. Our finding is that anti-cartel policy has evolved according to what supra-national theorists predict: as the outcome of a process by which EU institutions are able to broaden and deepen the policy areas in which they are entitled (McGowan 2007). We show that, unexpectedly, it was the leniency program the key policy innovation that lead to a significant improvement in anti-cartel policy effectiveness and the expansion of the EU cartel policy domain.

Data on the timing of investigations, decisions and colluding activities is mostly obtained from all the EC decisions. Our empirical strategy is to define, using the evidence on such timing and dynamics, the periods of deep changes in cartel policy enforcement, and in the characteristics of the uncovered cartels across time. Once the critical turn points in cartel policy effectiveness are identified, we discuss the implications of our results regarding the drivers of anti-cartel policy reforms.

Following this introduction, section two reviews the literature on European integration that it is relevant for analysing the historical and political economy evolution of EU anti-cartel policy. Section three includes a general overview of the database we have constructed. Section four describes in detail each stage considered in the history of the European Commission's fight against cartels and provides a forensic analysis for all sanctioned cartel cases. Section five concludes.

## **2. Literature review**

Although the history and political economy of competition policy is heterogeneous in its foundations, perspectives and accounts, scholars mostly differ also following “two families” of European integration theories (Schimmelfenning and Rittberger, 2006; McGowan, 2007): supra-nationalism and the inter-governmentalism.

From the supra-nationalism approach, the expansion and strength of EU competition policy is the outcome of the EU integration process that places the role of fostering and safeguarding the functioning of the EU internal market at the core of EU institutions. As McGowan (2007) explains in detail, supra-nationalists “focus their analysis on the processes by which the empowered EU institutions deepen and expand the policy areas in which they were entitled.” He states that the 1951 and 1957 “treaties seemed to suggest that the nation state was becoming redundant as an authoritative source of governance.” The question from this approach is then to analyse how the process of integration expands and deepens by its own functionality compared to the old nation states (Akman and Kassim, 2010).

In contrast, from the inter-governmentalism perspective (Karagiannis, 2013 and Warlouzet, 2016), EU competition policy origins and initial developments were much more related to bargaining among the Member States. This is an international relations approach. State centric theories focus on the interplay between Member State governments towards more or less policy integration at EU level, and towards more or less activism by the EU authorities.

These accounts of the history of competition policy at EU level appear to suggest that the development of this policy domain is the outcome of a continuous battle between inter-governmental and supra-national forces. However, there is a third strand in the literature that analyses the origin and development of EU competition policy from a critical political economy interpretation.

According to Buch-Hansen and Wigger (2010), competition policy became at the late 1980s an instrument by which multinational corporations have been able to foster a neoliberal agenda in favour of a new global capitalism dominated by big business. From this third perspective, EU competition policy is seen as a policy that breaks some of the old

Fordist social agreements between capital and labour that included some cartels and other public restraints on trade.

Each strand of the literature offers alternative hypothesis that may explain the effectiveness of EU policy against cartels across time, and that may be checked against the evidence we present in this paper, particularly regarding how the key policy innovation in EC cartel policy such as the leniency program was introduced. Before focussing our attention in the data on cartel enforcement, in what follow we review in more detail the previous literature that has offered accounts of previous critical junctures of competition policy using some of these three analytical perspectives: (1) the origins of EU anti-cartel policy, (2) the 1980s growing EC activism and Member States discomfort, and (3) the unexpected origins of late 1990s and early 2000s reforms.

According to McGowan (2007), some of the supra-nationalist or neo-functionalist interpretations hinge upon two interrelated claims: (1) “integration occurs when organized economic interests pressure governments to manage economic interdependence by centralizing policies and creating common institutions” (2) “any initial decisions to integrate (...) produces, unintentionally, both economic and political spill-overs that push regional integration forward.”

From this perspective, it can be seen that a supranational competition policy regime had some difficulties at the origins, and that it needed time to develop. However, according to Cini and McGowan (2008) “once created the supranational competition regime started to develop its own dynamics and trajectory as the history of DG COMP’s development shows: in the 1960s and 1970s it slowly accumulated experience and increased case law while also developing norms and values that were being disseminated within the Commission and the wider competition policy community.”

In contrast, Karagiannis' (2013) accounts of the origins of EU competition policy places much less emphasis on the leading role of the supranational push: “the US-led construction of state-of-the-art German production facilities made the idea of organizing the European economy on the basis of co-operative cartels less appealing” in the late 1940s.

In particular, he sustains that Jean Monnet was afraid that “if left unchecked, the Germans would proceed to vertical re-concentrations (of steel producers with metallurgical coke providers), thus discriminating against French steel manufacturers.” So Monnet finally found a solution: “to propose antitrust policy. In his mind, of course, such a policy would protect competitors (i.e., French competitors of German big business), rather than consumers” (...) and “the Schuman Declaration, including its antitrust provisions, were made by Monnet and Schuman under intense pressure by the US.”

Karagiannis (2013) concludes that “backwards induction therefore dictated that the rational choice for Schuman was to propose a European Carbon and Steel Community (ECSC) with competition policy, but also offer Adenauer and Erhard some institutional guarantees regarding the non-punitive nature of that policy.”

According to Warlouzet (2016), in 1956 the Germans were very interested in securing the prohibition of cartels in the European Economic Community (EEC) Treaty for domestic reasons because if the prohibition principle was not upheld, it could be threatened at national level when discussing the passing of the 1957 cartel law that was a cornerstone in breaking from the Nazi-era cartelization past. The French took the reverse position as they perceived the ECSC's High Authority experience as a failure to reduce the power of the large German companies.

The Germans and the French accepted the compromise presented by Hans von der Groeben, the president of the group negotiating the articles on competition policy, with the

support of the Dutch and Belgians, that left anti-cartel policy in the middle ground: article 85 EEC (article 101 TFEU) contained the prohibition principle desired by the Germans in the first paragraph, but also the exceptions that allow cartels to be authorized as the French desired. This middle ground made enforcement largely ineffective.

The actual enforcement of articles 85 and 86 of the Treaty (101 and 102 of the TFEU) became effective as of 21 February 1962, with the entry into force of the Council Regulation 17/62.<sup>3</sup> This Regulation gave the Commission a central role as the authority charged with enforcing those articles, recognizing its power to open investigations, to adopt decisions and impose appropriate sanctions and remedies for infringements of competition rules. The Regulation allowed the EC to act as judge, jury, and executioner (McGowan, 2009). The fact that the negotiations with a view to adopting Regulation 17/62 ended with conferring such decisive powers to the Commission is considered a surprising outcome since some of the most powerful Member States had initially expressed opposition to this possibility (Warlouzet, 2016).

Regulation 17 in 1962 clarified some of the uncertainties of the Treaty of Rome in three ways that allowed the gradual set-up of the new competition policy domain (Warlouzet, 2016): (1) it interpreted article 85 as a clear ban on cartels; (2) it gave clear priority to the fight against cartels and on the fight against abuses of dominant position; (3) it gave extensive powers and supremacy to the Commission in the anti-cartel and anti-abuses of dominant position policy domains.

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<sup>3</sup> OJ 204/62. 21.2.62. Full references to the Official Journal of the EU is available online at Annex IV.

In the 1980s, there was a clearly growing Commission activism at the expense of some Member States discomfort. DG IV, underwent a significant transformation: its stance on cartel policy went from underactive to active, and even proactive. This supra-national push in competition policy was explained by several factors (McGowan and Wilks, 1995): a buildup of a considerable competition case law allowing the Commission to feel more confident when it defined and applied competition rules; a better knowledge and experience dealing with competition cases that the DG IV's staff had acquired during the previous stage; and a new more conducive neo-liberal economic and political climate to the effective functioning of EU competition policy.

From the early moments of this stage onwards, the successive Commissioners in charge of competition matters played a key role as drivers of change and modernity in EU competition policy (Cini and McGowan, 2008). These factors provided a clear boost to EC anti-cartel enforcement along the lines of what a supranational interpretation of the history of competition policy would have predicted.

However, during this period, there was also a growing discomfort with anti-cartel policy at the Member State level, particularly from German authorities (Wilks and McGowan, 1995). Additionally business organizations argued that competition policy was not enforced with sufficient vigor, clarity or objectivity, nor enough administrative certainty as the Commission acted like a political body trading off different policy objectives related to different domains such as market integration, industry concerns authorising crisis cartels, regional balances and the environment.

According to Wilks and McGowan (1995) criticism was coming not only from the traditional industry and consumer groups but also from DG Competition friends such as national competition authorities and the legal community, particularly from Germany. The main argument adduced in support of this criticism was based on the increasing



politicization of EC competition policy. These growing criticisms gave momentum for further reforms in the 1990s on.

The analysis of the period starting from mid-1980s from the critical political economy perspective is rather different. Buch-Hansen and Wigger (2010) suggest that it was until the mid-1980s that competition policy formed part of the institutional nexus of the postwar order of 'embedded liberalism', but that since the mid-1980s a neoliberal 'competition only' vision came to dominate. They conclude that "a public-private alliance of transnational actors, consisting of the DG Competition and transnational business elite networks, were the driving forces behind the 'neoliberalisation' of competition."

In the late 1990s and early 2000s, EU competition policy was strongly reformed. However, the origins of such reforms have been little analysed. McGowan's (2007) analysis of these new reforms is that "the EC competition policy regime is locked in a process of ongoing evolutionary expansion that can be explained through transactional exchanges and pressures on Member State governments". Between 1993 and 1995, the Commission was highly criticized. However, the literature has not yet been able to provide an account of what came later with the introduction of the leniency program in 1996 and the 2004 modernization package.

Our hypothesis is that there was an unexpected interplay between the success of the leniency program in the fight against cartels and the new reform momentum that led to the 2004 modernization of competition policy. It seems that, the success in the fight against cartels completely changed the position of the Commission and offered the leadership of the new phase of supranational integration in the competition policy domain. The forensic analysis of the cartel cases allows us to offer new insights on the unexpected origins of this critical juncture that lead to further integration.

### 3. General overview and database

This study is based on data and information collected on all EC sanctioning decisions in cartel cases from the very beginning of the effective enforcement of EU competition rules in 1962 up to 2014 (see Annex I online). We set up a database with the information on six variables detailed in Annex II online such as number of firms, final fine, leniency reductions, duration, number of countries and case origin. Annex III online offer detailed descriptive statistics of all those variables.

[Figure 1]

The number of cartel cases was gradually increasing from the eighties onwards. We show evidence that EU leniency notices have proven to be the Commission's most effective tools in uncovering, destabilizing and fining cartels. It was applied<sup>4</sup> in 94% (89 out of 95) of the cases between 1998 (the first decision) and 2014. Moreover, the Commission initiated an investigation into a cartel case following a leniency application in 70% of the cases (60 out of 89 cases), while it initiated an investigation on its own initiative or following a third party complaint in the other cartel cases.<sup>5</sup>

The most significant changes in the Commission's fight against cartels are reflected in the level of fines imposed in cartel cases.

[Figure 2]

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<sup>4</sup> We consider all cartel cases that fell within the scope of application of the leniency program: initiated following a leniency application, made before the EC taken any investigative steps, or following a Commission's own-initiative investigation (*ex officio*).

<sup>5</sup> Cartel members may apply for the leniency program also after the EC has already uncovered the cartel.

The total amount of all the fines imposed in cartel cases between 1962 and 2014 exceeded 24,400 constant million Euros, of which 89.7% comes from the application of the leniency program.

Although dividing the history of any policy enforcement into different periods strongly relies on the criteria used to set the critical junctures or turning points of history, Figures 3 to 6 show that 1981, 1996 and 2005 are candidates for analytically describing the main changes in cartel policy enforcement. This divides cartel policy into four stages: 1962-1980, 1981-1995, 1996-2005, and 2006-2014.

[Figure 3]

Figure 3 shows the number of cartels that were active according to the largest span of the colluding activity by any cartel member (cartel birth and death dates). It is very clear that the introduction of the leniency policy in 1996 not only allowed the detection of a much larger number of active cartels, but more importantly, it revealed cartels that had been active in the previous stages but had remained undetected. Such an increase in the detection ratio is also clear in 1981 and 2006 although not so strongly.

Table 1 shows the number of cartels that were active and revealed, in 5-year intervals. The coloured cells show how important the turning points of 1981, 1996 and 2005 were in uncovering cartels, for all periods.

[Table 1]

In the period 1981-1985, the EC was able to uncover not only the largest number of cartels that were active contemporaneously (10), but also the largest and second largest number of uncovered cartels for the previous 5-year periods. 1981 is a candidate for a turning point in the history of EC cartel uncovering.

In the period 1996-2000, the number of uncovered cartels almost tripled from 10 to 27. The EC was able to uncover not only the second largest number of cartels that were active contemporaneously (24), but also the largest number of cartels discovered in the two previous 5-year periods.

In the period 2001-2005 the number of uncovered cartels increased slightly. The EC uncovered the largest number of cartels that were active contemporaneously (30), but also the largest or second largest number of cartels uncovered in the three previous 5-year periods. However, this was the result of the long lasting implementation and improvement of leniency policy. Therefore, 1996 is a candidate for a second critical juncture.

Finally, in the period 2006-2010, the number of uncovered cartels went down significantly. However, in 2006 the EC was able to uncover the largest number of cartels that were active contemporaneously (15), and the second largest number of cartels that were active in the previous 5-year period. Therefore, 2006 seems to be a last turning point.

Table 2 shows the detection ratios of cartels across the four periods (the percentage of detected cartels with respect the active cartels at each stage, left column).

[Table 2]

The average values of the main characteristics of cartels uncovered in each different policy period are shown in Figures 4 and 5.

[Figures 4 and 5]

In the first stage the Commission only sanctioned seven cartel cases, and only claimed fines of 0.56 million Euros (at constant 2010 price levels) per consolidated firm (summing the fines of the parent and all its subsidiaries). Investigations lasted a little over four years on average, the number of firms involved in each cartel was quite large (9.28 on average), the

cartel had parent firm members with head offices registered in 4.3 different countries, and the duration of the cartel was quite long (12.6 years on average).<sup>6</sup>

In the second stage, the number of cartel cases jumped up to 28. The average fine per consolidated firm was seven times larger than before. All items were similar than before, but the duration of cartels is significantly smaller: around eight years.

The Commission uncovered and sanctioned 41 cartels in the third stage. The leniency program allowed access to direct evidence of cartel member wrongdoing and, then fined firms much more severely: fine per consolidated firm was now more than five times the previous stage figure, reaching almost 22 million Euros.

The number of countries of origin of the parent firms went down to 3.7, the number of parent firms per cartel went down to just 5.7, and the duration of the cartels uncovered was significantly smaller, around 5 years. The number of all firms (parents and subsidiaries) in each cartel case remained constant (around 12.6). This suggests that a smaller number of parent companies are using subsidiary firms to take part in different cartels.

Finally, in the last period enforcement reached figures never seen before: 53 cartels were sanctioned and fines skyrocketed, reaching an average per firm fine that was almost three times higher than in the previous period: 62 million Euros.

The type of cartels uncovered with respect to the average number of countries of origin of the parent companies (around 3) and with respect to the average number of members (around six parent companies and around 11.5 firms) barely changed from the previous period. The duration of the uncovered cartels went down again to three years.

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<sup>6</sup> We computed duration as the largest span of the colluding activity by any cartel member.

Figure 6 shows the timing of birth, death, detection and sanctioning of all cartels. It clearly shows the reduction of the duration of the cartels discovered across time: the length of the arrows in the figure diminishes across time. It also shows how detection rates increase across time: in particular in stage 2 (1981-1995) the cartels discovered went unnoticed in previous stage 1 (1961-1980), and also in stage 3 (1996-2005) the Commission was able to detect many cartels that went unnoticed in previous stages 1 and 2 (1961-1980 and 1981-1995).

#### **4. Forensic analysis of stages in the EU's competition policy against cartels**

We now closely review stage by stage the drivers of the changes in enforcement, and detail the critical historical junctures in this process and how those junctures drove expected and unexpected results in terms of cartel policy effectiveness.

##### ***4.1. The origins and the lax initial stage: 1962-1980***

The enforcement system established by Regulation 17/62 was based on the Commission's centralized control of the application of articles 85 and 86 (of the Treaty of Rome), and the requirement of prior notification by the parties of their agreements, decisions and practices to the Commission, which after examination of the notification could authorize the application of proper exemptions. The huge number of notifications caused serious delays in the procedural treatment and completion of the files and the consequent backlog of cases, since the Commission devoted a large proportion of its resources to deal with notifications.

The problem was the flood of notifications, because the Competition Commissioner, Von der Groeben, underestimated the consequences of encouraging companies to notify their agreements, particularly distribution agreements, even for those in which the necessity was unclear.

Wilks (2005) called Regulation 17/62 a "slowly ticking bomb for over 20 years until it exploded in the faces of the national governments during the 1980s". To address these problems, given that the workforce remained unchanged, the Commission tried to reduce the number of cases and to speed up the decision-making procedure by undertaking several initiatives, including the adoption and application of several block exemption regulations,<sup>7</sup> the use of the so-called "comfort letters", or the introduction of notices on agreements of minor importance which do not have sufficient impact on competition.<sup>8</sup>

Further, the position taken by the EC to address the consequences of the oil crises on European industrialized sectors can be interpreted as the supremacy of industrial policy over competition law. Indeed, the EC followed a permissive competition law enforcement approach to state aids and openly allowed legal exceptions for so-called "crisis cartels" in declining industries on a temporary basis (Buch-Hansen and Wigger, 2011).

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<sup>7</sup> The Council was initially reluctant to enact block exemption regulations in response to the Competition Commissioner's proposals. In fact, it adopted the first block exemption in 1965 (OJ 36, 6.3.1965). However, as the number of notifications remained very high, the Council delegated to the EC, in March 1967, the power to enact its own block exemption regulations. OJ L 219, 16.8.1984, OJ L 53, 22.2.1985, OJ L 53, 22.2.1985.

<sup>8</sup> The first Commission Notice on this matter was published in 1970, "De Minimis Notice".

Against this background, cartel busting became a secondary priority to EU competition policy. The first sanctioning decision was adopted in 1969 in Case IV/26.623 Quinine.<sup>9</sup>

Table 2 shows that more than fifty percent of investigations on cartels which we now know were active during this period, started in subsequent stages, mostly in the following second stage.

Regulation 17/62 left the EC with considerable room for discretion when setting fines. Article 15(2) of Regulation n° 17/62 provided that the Commission could by decision impose on undertakings or associations of undertakings fines of from ECU 1,000 to one million, or a sum in excess thereof but not exceeding 10% of the turnover in the preceding business year of each of the parties participating in the infringement.

The Commission's discretion resulted in a much more lenient treatment of the cartels during this first stage in comparison to the following stages. In this period of time, the Commission usually required only the immediate cessation of the infringements without setting any fine for the infringers.

The Commission avowed that previous to its decision of December 1979 (IV/29.595 Pioneer Hi-Fi Equipment)<sup>10</sup> had not imposed fines exceeding 2% of the total turnover of the infringing firm.<sup>11</sup> Indeed, that decision marked a turning point in EC fining policy concerning competition law infringements (Geradin and Henry, 2005).<sup>12</sup>

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<sup>9</sup> OJ L 192/5, 5.8.1969. The Commission fined six undertakings a total of 500,000 Euros for fixing by agreement of prices and rebates relating to exports of quinine and quinidine, sharing out of domestic markets, the allocation of export quotas supported by a system of compensation, and limiting production.

<sup>10</sup> This is a concerted practice to prevent parallel imports infringing article 85 of the Treaty.

<sup>11</sup> Prior to 1979 the EC had imposed a total fine of ECU 9 million in Case IV/26.918 European



#### ***4.2. Steps to consolidation: 1981-1995***

In its Thirteenth Report on Competition Policy (1984), the Commission reaffirmed its determination to reinforce the deterrence effect of fines by raising the general level thereof in cases of serious infringements.<sup>13</sup>

During this stage, the DG IV initiated 33 investigations which eventually ended with a sanctioning cartel decisions; many of them already existing in the previous period (see tables 1 and 2). The investigations initiated *ex officio* by the Commission also dominated as the primary means of detecting cartels, and accounted for 64% of all investigations initiated that led to the of fining cartels.

DG IV gained experience with competition law enforcement but was struggling with lack of staff. In fact, although additional steps were undertaken to release resources to fight cartels,<sup>14</sup> the persistent control and revision of measures to mitigate the impact of the Crisis, the adoption of the first Regulation in 1989 and the creation of a new Merger Task

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Sugar Industry (1973), and individual fines imposed on some infringing firms reached or even surpassed ECU 1 million, meaning record fine levels (in absolute terms) for cartels sanctioned during this period. However, it should be pointed out that apart from their exceptional levels, when expressed as a percentage of the firm's turnover, individual fines were set at levels below 2% of the total turnover of the infringing firm.

<sup>12</sup> The Commission admitted this policy shift in submitting arguments in the appeal against its decision before the Court of Justice [1983] ECR 01825.

<sup>13</sup> This reaffirmation came after it became known that the judgment by the Court of Justice in the Pioneer case appeal also supported the Commission's move towards a tougher sanctioning policy.

<sup>14</sup> For instance, Frans Andriessen (Competition Commissioner from 1981 to 1985) increased the number of block exemptions (OJ L 219, 16.8.1984, OJ L 53, 22.2.1985, OJ L 53, 22.2.1985), leading to a reduction in the number of notifications to be revised and assessed.

Force whose staff was also drawn from the DG IV,<sup>15</sup> made the fight against cartels difficult.

As companies were becoming more internationalized in their operations, the EC strengthened its coordination and cooperation with other competition authorities in countries outside the EU. The most relevant was the 23 September 1991 Agreement between the European Communities and the US Government regarding the application of their competition laws, which was formally approved in April 1995 with retroactive effects<sup>16</sup> (Cini and McGowan, 2008).

However, as stated before, there was a growing discomfort with how the EC was handling anti-cartel policy. In 1993, Germany again proposed, as in 1960 when discussing Regulation 17, the establishment of a European Cartel Office or European Competition Office taking responsibility for all duties delegated to the Commission on cartels, abuse of dominant position, mergers and state aid at that time.

There was a widespread perception in 1995 that some reform of European competition law and policy was unavoidable. However, the German authorities were not able to maintain sufficient momentum to build the required alliances with other Member States and the proposal of the European Cartel Office was lost.

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<sup>15</sup> See Lyons (2009) for an extended study of the EC's appraisals and interventions in EU merger cases. Recent literature suggest that there might be unexpected effects from any improving in cartel uncovering on mergers: Davies, Ormosi and Graffenberger (2015) find evidence that mergers are more frequent after cartel breakdown, especially in markets that are less concentrated, a relationship suggested already by Hüscherlath and Smuda (2013).

<sup>16</sup> OJ L 45/95. 27.4.95.

In contrast, the DG Competition and the EC took a new initiative that completely changed cartel enforcement in the EU. In December 1995, the EC published a draft notice concerning the non-imposition or mitigation of fines in cartel cases where undertakings cooperate in the preliminary investigation or proceedings in respect to an infringement.<sup>17</sup> In adopting this Notice, the Commission opened the door to a new era in EU anti-cartel policy enforcement. This was a proposal from Competition Commissioner Karel Van Miert, who was inspired by the US program that had been in force since 1993.<sup>18</sup>

#### ***4.3. The first reform package: 1996-2005***

The far-reaching legislative and institutional reforms over this period significantly affected the pace and effectiveness of the EU cartel enforcement regime. The EC deemed these reforms unavoidable and were certain that the reforms should not be postponed because of serious and extensive criticism about its policy and pressures for change from different collective bodies and State Members' authorities since the 1990s. These pressures culminated with the German government's proposal again in 1996 for the creation of an independent European Cartel Office which was ultimately dismissed.<sup>19</sup>

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<sup>17</sup> OJ C 341/13. 19.12.95.

<sup>18</sup> IP/95/1355, Brussels, 6.12.1995

<sup>19</sup> Wilks and McGowan (1995), and Van Miert (1996) from an institutional point of view, provide a revision of the drawbacks of the proposed independent agency. Guidi (2015) analyses the effect of competition commission independence on performance.

The first legislative initiative that marked this stage was the introduction of the first Community leniency program on 18 July 1996.<sup>20</sup> This sought to encourage the breakdown of the “code of silence” among the members of the cartels (Borrell, Jiménez and García, 2014).

Nevertheless, the 1996 *Leniency Notice* lacked many enforcement details. It was not made sufficiently clear exactly what type of information the companies had to provide and, consequently, the amount of reduction that a cooperating company was entitled to. In this first leniency notice, the Commission did not even require the companies to have applied for leniency, and often the reduction in the fine was based on an assessment that the Commission made of the cooperation that the infringing companies might have given. This notice was applied for the first time on 21 January 1998 (IV/35.814 Alloy surcharge).

Since 1998 onwards, the leniency program has been broadly applied in nearly all the uncovered cartels sanctioned by the EC, as shown in Figure 1. For the period between 1996 and 2005, the Commission considered it appropriate to apply the 1996 Leniency Notice in 36 cases.

The leniency applications led to the start of an investigation in 46 percent of the cartel cases sanctioned during this period; while this had mainly been done on the Commission’s own initiative up until 1996 (see Figure 1).

Nevertheless, Stephan (2009) calls into question the success of the EU leniency program in destabilizing cartels since he notes that most cases that were decided using the first Leniency Notice were no longer active at the time and had been the subject of similar

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<sup>20</sup> Commission Notice on the non-imposition or reduction of fines in cartel cases (OJ C 207, 18.7.1996).

investigations by the US Department of Justice (US-DoJ). However, the EC has repeatedly highlighted the difficulties experienced regarding cooperation with US competition authorities in cartel cases, primarily because of confidentiality rules contained in the aforementioned 1991 EU/US Agreement that restricted information sharing among EC and US agencies.

The strengthening of sanctions against cartels was also achieved due to the implementation of the new Commission's 1998 Fining Guidelines.<sup>21</sup> The basic criteria contained in the Fining Guidelines were already reflected in cartel cases sanctioned in 1998. Descriptive statistics show the significant tightening of EC fining policy against cartels during this third stage (see Figures 3, 4 and Table AII.3).

Efforts to promote greater specialization of the staff charged with upholding cartel cases were also observed at this stage. The EC created in December 1998, a new unit (Unit E1) within the DG IV (since 1999 known as DG Competition) composed of around 20 of the most experienced officials, exclusively in charge of detecting, prosecuting and punishing cartels for any product and service related activities (Guerrin, 1999).

Until that time the four operational divisions (C, D, E and F) of the DG IV had conducted proceedings on cartels in their areas of responsibility. From that time, the new service would be the "anchor of the Commission's ongoing fight against cartels".<sup>22</sup> However, this new administrative unit would act in close cooperation with the other sector units of DG IV. Further, the EC expected that this new anti-cartel unit would be in a position to

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<sup>21</sup> OJ C 9/3, 14.1.98.

<sup>22</sup> IP/98/1060, Brussels, 3.12.1998.

provide a contact point with officials of the US-DoJ, thereby facilitating and strengthening cooperation with the US-DoJ in cartel cases.<sup>23</sup>

The human and material resources of this unit were significantly strengthened under Competition Commissioner Mario Monti's leadership, and it culminated in the creation of a second "anti-cartel unit" in 2002.

The criticisms of the deficiencies of the 1996 Leniency Notice motivated a thorough revision that terminated with the publication of the 2002 Leniency Notice.<sup>24</sup> The Commission clarified the conditions under which immunity from fines would be granted to the first company to provide evidence, accepting hypothetical applications and even opening up the possibility that the ringleaders of the illegal activity benefit from the program.<sup>25</sup> These amendments appeared to encourage leniency applications for immunity before the EC had opened an *ex officio* investigation. This apparent strategy has important implications for interpreting cartel policy performance, particularly in the next stage.<sup>26</sup>

According to our results, the implementation of this program does not seem to have reduced the average duration of the Commission's cartel investigations.<sup>27</sup> This could be

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<sup>23</sup> EC (1999). XXVIIIth Report on Competition Policy 1998 (p. 314). EC (1998). Commission strengthens the fight against the cartels. Press Release, IP/98/1060, Brussels, 3.12.1998.

<sup>24</sup> OJ C 45, 19.2.2002.

<sup>25</sup> Also, for those companies that opt to seek a fine reduction, the 2002 Leniency Notice detailed what was understood to be the added value of the evidence provided by the companies, for their application to be admitted.

<sup>26</sup> During this stage, the Commission applied the 2002 Leniency Notice on only two decisions.

<sup>27</sup> This result contrasts with that given in Carree et al. (2010), but for all EC's decisions in antitrust cases.

explained by the greater body of evidence that must be assessed by DG Competition before a decision is taken by the EC.

We must also highlight that the number cartels sanctioned in this period increased substantially (88% as compared to the previous period), mostly as a result of leniency applications.

In any case, the potential savings in resources would result from avoiding or substantially reducing the costs of an eventual prosecution of the cartel cases before the courts, since the EC would have strong evidence of the infringements in defending its decisions (Motta, 2009).

Since July 2003, the above mentioned two anti-cartel units have ceased to exist. The DG was then structured in four directorates in charge of competition law enforcement in key sectors of the EU economy and enforcement of cartel policy was then allocated to each unit in the corresponding specific sector directorate (Lowe, 2008).

The provisions contained in the Council Regulation 17/1962 were valid until May 2004 when the new Antitrust Council Regulation 1/2003 was passed (modernization package),<sup>28</sup> and then developed by the Commission Regulation 773/2004.<sup>29</sup> Significant changes introduced by Regulation 1/2003 contribute to the simplification of the administrative procedures and to decentralization of the application of the competition rules in the EU, and entitles the Commission to conduct in-site inspections (dawn raids). This reform

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<sup>28</sup> OJ L 1/1. 4.1.2003.

<sup>29</sup> OJ L 123/18. 27.4.2004.

meant that the system of notification and authorization was completely abandoned and replaced by a directly applicable exception system.<sup>30</sup>

This new Regulation aimed at alleviating the Commission's workload, by reinforcing the role played by the national competition authorities (NCA) and courts, on the one hand, and ensuring uniform application of Community competition rules, on the other (McGowan, 2005).

Nevertheless, what has been called “decentralization” in practice could have had the opposite effect as a reinforcement of the EC's central control of European competition law enforcement over the NCA. The European Competition Network (ECN)<sup>31</sup>, in order to achieve a coherent application of Articles 81 and 82 of the Treaty, would in fact be providing a strategic device for the EC to make the NCA act under its guidance and supervision (Wilks, 2005, Buch-Hansen and Wigger, 2011).

From 1 June 2005 on, a new Directorate in the DG Competition devoted exclusively to the fight against cartels became operational. The so-called Cartels Directorate employed, then, about 60 staff members, of whom about 40 were in charge of cartel cases.

In addition, in 2005 a two stage procedure was introduced by the DG Competition. All antitrust cases start with a first phase of investigation that usually lasts no more than four months after which the Commission adopts a decision concerning the “theory of identified harm” and whether there is reason to pursue the case as a matter of priority, and if so, to carry out a thorough investigation.

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<sup>30</sup> See COM(2014)9.7.2014.453 final.

<sup>31</sup> OJ C 101/43.27.4.2004.



To conclude this third stage, we should notice the Commission's publication, on 19 December 2005, of the "Green Paper. Damages actions for breach of the EC antitrust rules" includes the proposal of a series of measures aimed at encouraging victims of infringements of Articles 81 and 82 of the Treaty to exercise their right to claim for damages (Pheasant, 2006). Thus it could have discouraged potential leniency applicants fearful of the result of future private litigations.

#### ***4.4. The second reform package: 2006-2014***

The legacy of the previous reforms' success undoubtedly affected the orientation of initiatives taken during this last period. Indeed, the focus here is less about the tools available than the establishment of a series of improvements in the sanctioning mechanisms, as well as in the framework for cooperation between cartel participants and the Commission.

The EC sanctioning activity during this stage reached figures never witnessed before: both, in terms of decisions and with respect to the total and per firm amounts of fines (see Figures 1 and 4).

The publication, on 1 September 2006, of the new Fining Guidelines was an important step forward in punishing competition law infringements accordingly.<sup>32</sup> Although these Guidelines appear not to differ significantly from the previous method, they introduce

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<sup>32</sup> OJ C 210/2. 1.9.2006.

several key new points which have contributed to tightening the fines imposed on cartels still further (Barbier de La Serre and Lagathu, 2013).<sup>33</sup>

Continuing with its strategy of attracting more and more potential leniency applicants, on 8 December 2006, the EC replaced the 2002 Leniency Notice by a new Notice.<sup>34</sup> It introduced a marker system, whereby an immunity applicant may either initially apply for a marker to protect its place in the queue, or immediately proceed to make a formal application to the Commission. Furthermore, the new system enhanced the transparency and predictability of the procedure since the immunity applicant knows more precisely its possibilities to be eligible for immunity from fines.<sup>35</sup>

It is very important to underline that during this period only two of the 53 cartel cases did not fall within the scope of the leniency program (see Figure 1).<sup>36</sup> The 1996 Leniency Notice was applied in three cartel decisions, the 2002 Leniency Notice in 28 decisions,<sup>37</sup> and the 2006 Leniency Notice in 21. But to better understand the EC's increasingly reactive rather than proactive stance it is worth noting that as much as 77% of its sanctioning decisions in cartel cases stemmed from leniency applications, a much higher percentage than in the previous period (46%).

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<sup>33</sup> Bos and Schinkel (2006) show that fines are now closer to the illicit gains from the infringement, but that they remain constrained by the aforementioned 10% ceiling.

<sup>34</sup> OJ C 298/17. 8.12.2006.

<sup>35</sup> The 2006 Leniency Notice was applied for the first time in the Commission decision of 28 January 2009 in case COMP/39.406 – Marine Hoses.

<sup>36</sup> Case COMP/39.401 - E.ON/GDF and case AT.39952 - Power Exchanges.

<sup>37</sup> In case COMP/39.168-PO/Hard Haberdashery: Fasteners the 1996 and 2002 Leniency Notices were applied.

The so-called “Settlements Package”, adopted in early July 2008, consists of a Commission Regulation together with a Commission Notice.<sup>38</sup> It allows the Commission and parties to proceedings to follow a more simplified procedure when cartel participants, having seen the evidence in the Commission file, acknowledge their involvement in the cartel and their liability (Mehta and Tierno, 2008). At the same time, this procedure should enable companies to benefit from a reduction in the sanction.

This procedure achieves greater visibility in 2013 and 2014, when it accounted for eight decisions. An important feature in all the decisions in which the settlement procedure has been applied is the existence of several leniency applicants.

When considering exclusively those investigations initiated during this stage that led to sanctioning decisions, we observe a sharp reduction in the number of investigations (of around 60%) compared with the previous period. The deterrence effect of the leniency policy may be reducing the creation of new covered cartels.

It is important to highlight the possible consequences for the fight against cartels that the adoption of the *Damages Directive*<sup>39</sup> has currently had, and could have in the near future. Member States were given until 27 December 2016 to transpose the provisions of the Directive into their legal systems.

One of the major contributions of the *Damages Directive* to private enforcement of antitrust laws is that national courts are able to order the defendant or a third party to disclose relevant evidence that lies in their control, provided that a number of specific conditions

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<sup>38</sup> OJ L 171/3. 1.7.2008 and OJ C 167/1. 2.7.2008, respectively.

<sup>39</sup> OJ L 349/1. 5.12.2014.

are met. The Directive also establishes that a national competition authority or review court decision on competition law infringement constitutes irrefutable proof for the purposes of an action for damages brought before the national courts of the same Member State, and at least it constitutes *prima facie* evidence of the infringement before the national courts of other Member States.

The Directive states that leniency statements and settlement submissions cannot be disclosed for the purpose of actions for damages, so that the incentives of cartel members to cooperate voluntarily with the Commission are not adversely affected.<sup>40</sup> These exemption provisions have also been reflected in the legislative amendments passed on August 2015.<sup>41</sup>

This Damages Directive and the amendments to legislative provisions resulting from this Directive intend to avoid undermining the effectiveness of the leniency program and the “settlement procedure.”

As the consequences of being uncovered would probably be more costly to cartel members from now on, the Damages Directive and its transposition into national law of the Member States could cause cartels which are already weak or near collapse to be definitively destabilized. However the Directive could also cause the least vulnerable cartels to reinforce their internal discipline by making them more stable and more difficult to detect and dismantle. In any case, the empirical assessment of possible effects of the Damages

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<sup>40</sup> Nevertheless, the claimants may, under certain conditions, rely on Regulation (EC) 1049/2001 (OJ L 145, 31.5.2001), to request the disclosure of these documents.

<sup>41</sup> See OJ L 208/3. 5.8.2015, OJ C 256/3. 5.8.2015, OJ C 256/1. 5.8.2015, OJ C 256/2. 5.8.2015 and OJ C 256/5. 5.8.2015

Directive on the effectiveness of the Commission's fight against cartels should be a matter for future research.

## **5. Discussion of results and conclusions**

Both the forensic analysis of cartels and the comparative analysis of the main variables characterizing anti-cartel enforcement across the four identified stages highlight the timing and dynamics of EC cartel policy effectiveness, and how the Commission unexpectedly found the way to boost policy effectiveness through innovation. The EC was able to reinforce its powers in competition policy as supranational analyst would have predicted while maintaining the Member States governments' pressures under check.

Our main contribution is that the main turning point in the EC's fight against cartels was the introduction of the leniency program in 1996: it drove the number of uncovered cartels and the fines imposed upon them to increase exponentially. This turning point was the key determinant for the EC to gain the legitimacy to push for further supra-nationalization of competition policy under its centralized control.

This shift in legitimacy reinforced strongly the bargaining position of the Commission in front of some Member State governments, particularly that of Germany, that was highly critical of the previous discretionary political enforcing of cartel policy, and competition policy in general. The recurrent claims of transferring competition policy to an independent European authority separate from the Commission were no longer raised again. So the inter-governmental prediction that competition policy would be transferred to the Commission as long as the Member State governments would agree do not seem to hold in the case of the centralization of competition policy in the Commission.

Also, contrary to what we would expect from the critical political economy interpretation of the course of actions that led to an increasing enforcement of cartel policy at the Commission hands, the paradox is that as many as 61% of the founding firms in the European Round Table of Industrialists (11 out of 18 founding members in 1983), which were supposedly promoting the enforcement of a ‘more liberal’ competition policy, have been sanctioned and fined as members of cartels by 2014 by the Commission. In fact, as many as 48% of the current members of the European Round Table of Industrialists (24 out of 50 members in 2016) have got a cartel fine. Additionally, as many as 80% of the members of the Competitiveness Advisory Group named by the President of the Commission in February 1995 have been already fined.

It is striking that uncovered and sanctioned cartels were increasingly formed by a smaller number of parent international companies that are using subsidiary firms to take part in many different sanctioned cartels. And, that the Commission was increasingly able to detect those parent international companies’ wrongdoings and sanction them. Future research is required to specify how the leniency program has been so effective, and to what extent its uncovering and deterring efficacy will be reinforced or otherwise diminished by the full use of the new settlement mechanisms by the Commission and the investigated parties, and the full transposition and national enforcement of the provisions contained in the Damages Directive that should be completed by the end of 2016. It remains to be seen whether new inter-governmental forces are trying to pull back some of the integration and centralization driven by the Commission since the introduction of the leniency program.

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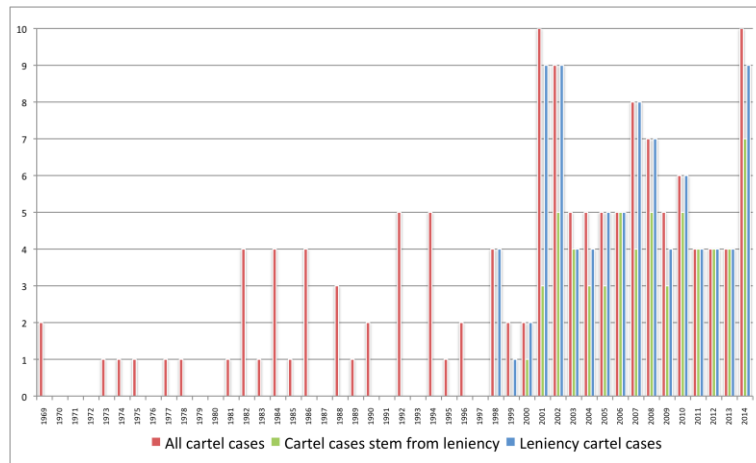
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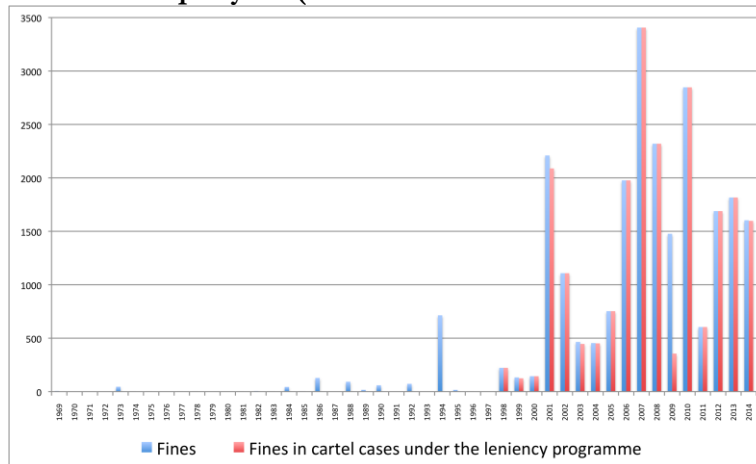
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**Figure 1: Sanctioned cartel cases by year (1962-2014)**



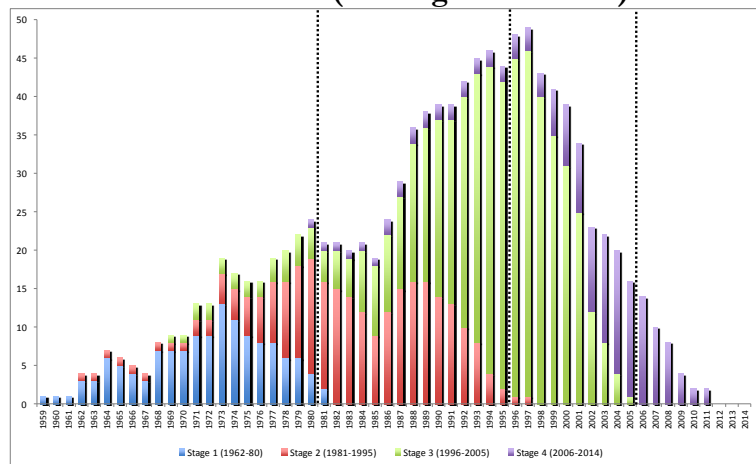
Source: Authors' calculations based on data from EC publicly available decisions

**Figure 2: Total fines per year (1962-2014. Constant millions of euros 2010)**



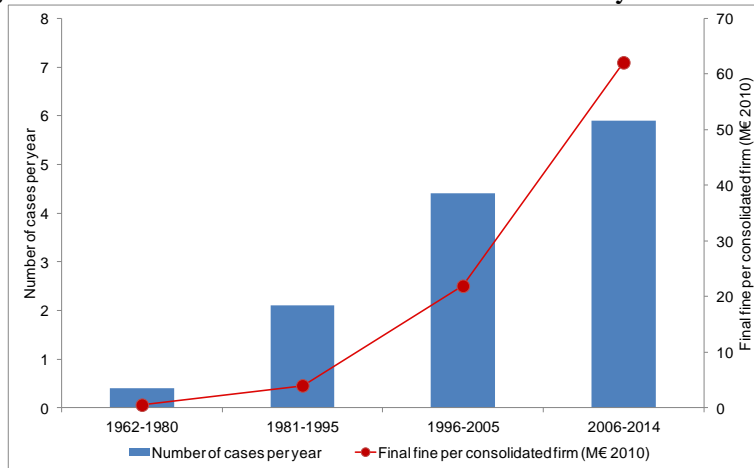
Source: Authors' calculations based on data from EC publicly available decisions

**Figure 3: Number of cartels that were active by year and stage at which the cartel was detected (investigation started)**



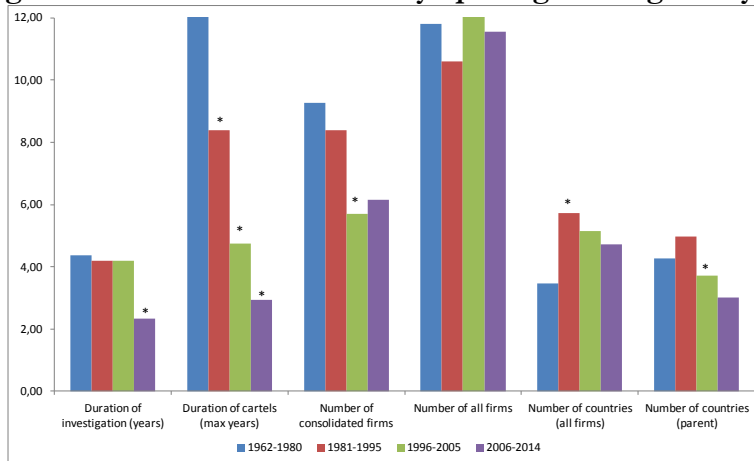
Source: Authors' calculations based on data from EC publicly available decisions

**Figure 4: Number of cases and volume of fines by decision year**



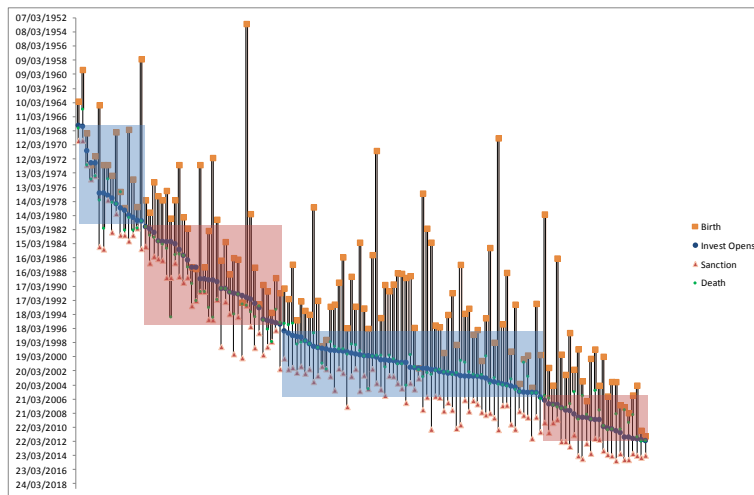
Source: Authors' calculations based on data from EC publicly available decisions  
 Note: Cartel cases in which only associations were involved (7) have been excluded.

**Figure 5: Cartel characteristics by opening investigation year**



Source: Authors' calculations based on data from EC publicly available decisions  
 Note: Cartel cases in which only associations were involved (7) have been excluded. (\*) shows when the mean of that period differs statistically from the mean of the previous period.

**Figure 6. Birth, death, investigation opening and sanction dates per cartel**



**Table 1**

		Stage at which the investigation started									
Active Cartels at each stage	Total	1962-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2014	
1962-1975	28	11	5	7	2	1	1	1			
1976-1980	27	7	0	10	3	2	2	2	1		
1981-1985	33	4		10	7	2	4	5	1		
1986-1990	46			1	10	9	12	12	2		
1991-1995	66				6	13	24	21	2		
1996-2000	67					2	24	32	9		
2001-2005	53						4	30	17	2	
2006-2010	21							1	15	5	
2011-2014	3									3	

The grey color signals the stage at which the investigation started for the largest number of discovered cartels that were active at each period (horizontally in the table), and the blue signals for the second largest number of discovered cartels that were active at each period (horizontally in the table).

**Table 2**

		Stage at which the investigation started			
Active Cartels at each stage	Total	1962-1980	1981-1995	1996-2005	2006-2014
1962-1980	36	44%	42%	11%	3%
1981-1995	85	5%	39%	54%	2%
1996-2005	81	0%	4%	73%	23%
2006-2014	22	0%	0%	5%	95%

## (ONLINE ACCESS)

### Annex I: European Commission decisions in cartel cases (1962-2014)

#### First Stage (1962-1980)

Decision year	Case Number	Case Title
1969	26623	Quinine
1969	26267	Matières colorantes
1973	26918	EUROPEAN SUGAR INDUSTRY
1974	426	Papiers peints de Belgique
1975	27039	Preserved Mushrooms
1977	29176	Vegetable Parchment
1979	29672	FLORAL

#### Second Stage (1981-1995)

1981	29995	NAVEWA-ANSEAU (*)
1982	29525, 30000	SSI
1982	29629	Rolled zinc products and zinc alloys
1982	29883	AROW/BNIC
1982	30128	TOLTECS-DORCET
1983	30064	Cast Iron and Steel Rolls
1983	30671	IPTC BELGIUM (*)
1984	30988	Flat-Glass (BENELUX)
1984	30350	ZINC PRODUCER GROUP
1984	30907	Peroxygen products
1984	29725	Wood pulp
1985	30739	SIEMENS/FANUC
1986	31149	POLYPROPYLENE
1986	31371	Roofing Felt
1986	31204	MELDOC
1986	31128	FATTY ACIDS
1988	31424	Hudson' s Bay / Dansk Pelsdyravlerforening
1988	31906	FLAT GLASS
1988	31865	PVC (+)
1988	31866	LdPE
1989	31553	Welded Steel Mesh
1990	33133-B	Soda-ash - Solvay / CFK
1990	33133-A	Soda-ash - Solvay / ICI
1992	31572, 31571	Building and Construction in the Netherlands
1992	30717	Eurocheque : Helsinki Agreement
1992	32450	French-West African Shipowners' Committees
1992	33585	Distribution of Railway Tickets by Travel Agents
1992	32448, 32450	CEWAL, COWAC, UKWAL
1994	38907	Steel beams
1994	33833	CARTONBOARD
1994	31865	PVC (+)
1994	33126, 33322	CIMENT
1994	33218	Far Eastern Freight Conference
1995	34179, 34202	SCK/FNK

(+) In cartel case number 31865 the EC adopted a new decision but we only consider one cartel case. (\*) These cartel cases are actually the same case, although it has two EC decisions in 1981 and 1983.

Source: Authors' compilation based on information available at the EC website.

Third Stage (1996-2005)		
Decision year	Case Number	Case Title
1996	34983	Fenex
1996	34503	Ferry Operators
1998	35814	Extra d'Alliage
1998	33708, 33709, 33710, 33711	British Sugar
1998	35691	Preinsulated pipes
1998	34466	Greek Ferries
1999	33884	FEG & TU
1999	35860	Seamless steel tubes
2000	34018	FETTSCA (Far East Trade Tariff and Surcharges Agreement)
2000	36545	PO/Amino acids
2001	37444, 37386	SAS + Maersk Air
2001	36490	Graphite electrodes/PO
2001	36756	Sodium Gluconate
2001	37512	Vitamins
2001	37800	Luxembourg brewing industry
2001	37614	Interbrew + Alken Maes
2001	36604	Citric Acid
2001	37027	Zinc Phosphate
2001	37919 (ex 37391)	Bank charges
2001	36212	Carbonless paper (CLP)
2002	36571	Österreichische Banken
2002	37519	Methionine
2002	36700	PO/industrial and medical gases
2002	37784	Fine art Auction Houses
2002	37152	PO/Plasterboard
2002	37978	PO/Methylglucamine
2002	37671	Food flavour enhancers
2002	37667	Speciality graphite
2002	37956	Ronds à béton
2003	38279	French Beef
2003	37370	Sorbates
2003	38359	Electrical and mechanical carbon and graphite products
2003	37857	Organic Peroxides
2003	38240	Tubes industriels en cuivre
2004	38069	PO/Copper plumbing tubes
2004	37750	Brasseries Kronenbourg, Brasseries Heineken
2004	38238	Raw Tobacco (ES)
2004	38338	Needles
2004	37533	Choline chloride
2005	37773	MCAA (Monochloroacetic acid)
2005	38337	Thread
2005	38281	Raw Tobacco IT
2005	38354	Industrial bags
2005	38443	Rubber chemicals

Source: Authors' compilation based on information available at the EC website

**Fourth Stage (2006-2014)**

<b>Decision year</b>	<b>Case Number</b>	<b>Case Title</b>
2006	38620	Hydrogen peroxide (and perborate)
2006	38645	Methacrylates
2006	38456	Bitumen Nederland
2006	38121	Fittings
2006	38638	Butadiene Rubber/Emulsion Styrene Butadiene Rubber
2007	38899	Gas insulated switchgear
2007	38823	Elevators and escalators
2007	37766	Netherlands beer market
2007	39168	Fasteners
2007	38710	Bitumen Spain
2007	38432	Professional videotape
2007	39165	Flat Glass
2007	38629	Chloroprene Rubber
2008	38628	Nitrile Butadiene Rubber
2008	38543	International Removal Services
2008	38695	Sodium Chlorate
2008	39180	Aluminium Fluoride
2008	39181	Candle waxes
2008	39188	Bananas
2008	39125	Carglass
2009	39406	Marine hoses
2009	39401	E.ON/GDF
2009	39396	Calcium carbide and magnesium based reagents
2009	39129	Power Transformers
2009	38589	Heat stabilisers
2010	38511	DRAMS
2010	39092	Bathroom fittings & fixtures
2010	38344	Pre-stressing steel
2010	38866	Animal Feed Phosphates
2010	39258	Airfreight
2010	39309	LCD
2011	39579	Consumer Detergents
2011	39482	Exotic fruit
2011	39605	CRT glass bulbs
2011	39600	Refrigeration compressors
2012	39462	Freight forwarding
2012	39452	Mountings for windows and window-doors
2012	39611	Water management products
2012	39437	TV and computer monitor tubes
2013	39748	Automotive Wire Harnesses
2013	39633	Shrimps
2013	39861	Yen Interest Rate Derivatives (YIRD)
2013	39914	Euro Interest Rate Derivatives
2014	39801	Polyurethane foam
2014	39952	Power Exchanges
2014	39922	Bearings
2014	39792	Steel Abrasives
2014	39610	Power Cables
2014	39965	Mushrooms
2014	39574	Smart card chips
2014	39924	Swiss Franc Interest Rate Derivatives (CHF LIBOR)
2014	39924	Swiss Franc Interest Rate Derivatives (Bid Ask Spread Infringement)
2014	39780	Envelopes

**Source: Authors' compilation based on information available at the EC website.**



## Annex II: Variables Analysed (ONLINE ACCESS)

- i) *Final fine<sub>i</sub>*: the sum of fines imposed on all the undertakings involved in the cartel case *i*. To be able to compare values of currency units, the GDP World Bank deflator for the European Union has been used. All fines are hereafter denominated in constant 2010 euros.
- ii) *Average percentage leniency reduction<sub>i</sub>*: average of the percentage reductions granted to leniency applicants per case.
- iii) *Number of firms benefited from leniency program<sub>i</sub>*: average percentage of firms which benefited from immunity or/and reduction of fines under the leniency program in cartel case *i*.
- iv) *Number of firms<sub>i</sub>*: this is the number of cartel participants per case *i*.
- v) *Number of consolidated firms<sub>i</sub>*: this is the number of cartel participants but all the subsidiaries and the parent company belonging to the same consolidated group (*holdings*) are counted only once.
- vi) *Number of countries<sub>i</sub>*: this is the number of different countries from which cartel participants belonged to. Each company is assigned to the country where it has its registered head office.
- vii) *Number of countries (parents)<sub>i</sub>*: this variable is similar to the previous one but discounting the effect of parent and subsidiaries, where they exist. We account for only one country in which the parent firm has its head office.
- viii) *Final fine per firm<sub>i</sub>*: the ratio between the final official fine and the total number of firms participating in the cartel *i*.
- ix) *Maximum duration<sub>i</sub>*: maximum number of years the cartel *i* was functioning.
- x) *Duration of the investigation<sub>i</sub>*: the number of years between the starting date of the Commission's investigation and the date of its final decision in cartel case *i*.

- xi) *Stability<sub>i</sub>*: binary variable which takes value 1 when there was no entry or exit of cartel's members throughout the life of the cartel.
- xii) *Case stems from...<sub>i</sub>*: binary variables which take value 1 for each way a case *i* starts with: a leniency application from one cartel member (post-1996 leniency notice), a notification (in the pre-2004 authorization regime), a Commission's own-initiative investigation (*ex officio*), or a Commission's investigation following a third-party complaint.

**Annex III: Detailed tables and figures by stages of the European Commission anti-cartel policy (1962-2014) (ONLINE ACCESS)**

**Table AIII.0: Cartel cases (all cases). 1962-2014**

Variables	Average	Median	Standard deviation	Minimum	Maximum
Number of firms	11,91	8	9,96	2	62
Number of consolidated firms	7,61	5	6,23	2	43
Final fine	189,01	71,22	288,93	0,12	1427,96
Final fine per firm	20,12	8,13	43,57	0,01	373,56
Final fine per consolidated firm	33,38	12,06	68,86	0,01	560,34
Average (percentage) reduction of fine by leniency	0,51	0,49	0,24	0,1	1
Percentage of firms benefited by leniency	0,13	0,11	0,09	0,02	0,5
Maximum duration of cartel (years)	7,66	5,83	6,23	0,02	34,92
Duration of investigation (years)	4,04	3,75	1,7	0,66	9,87
Cartel stability	0,37	-	-	0	1
Number of countries	5	5	3,22	1	18
Number of countries (parent firm)	4,3	4	2,9	1	18
Cases stem from a leniency application	0,47	-	-	0	1
Cases stem from a notification	0,01	-	-	0	1
Cases stem from the Commission's own initiative	0,39	-	-	0	1
Cases stem from a complaint	0,13	-	-	0	1

Note: Fines in constant millions of euro 2010 (GDP World Bank deflator).

Source: Authors' calculations based on data from EC publicly available decisions

**Table AIII.1: Cartel cases at the initial stage (7 total cases). 1962-1980**

Variables	Average	Median	Standard deviation	Minimum	Maximum
Number of firms	9	6	7	4	24
Number of consolidated firms	8,43	6	5,59	4	20
Final fine	7,93	1,65	16,66	0,41	45,61
Final fine per firm	0,5	0,32	0,64	0,04	1,9
Final fine per consolidated firm	0,56	0,32	0,78	0,04	2,28
Maximum duration of cartel (years)	4,3	3	2,91	1,99	10,17
Duration of investigation (years)	1,76	2	0,56	0,66	2,3
Cartel stability	0,71	-	-	0	1
Number of countries	3,28	3	1,7	1	5
Number of countries (parent firm)	3,28	3	1,7	1	5
Cases stem from a notification	0	-	-	0	1
Cases stem from the Commission's own initiative	0,71	-	-	0	1
Cases stem from a complaint	0,29	-	-	0	1

Note: Fines in constant millions of euro 2010 (GDP World Bank deflator).

Source: Authors' calculations based on data from EC publicly available decisions

**Table AIII.2: Cartel cases in the second period (28 cases considered). 1981-1995 (\*)**

Variables	Average	Median	Standard deviation	Minimum	Maximum
Number of firms	12,36	8	11,45	2	43
Number of consolidated firms	11,43	7	10,44	2	43
Final fine	40,1	10,93	75,95	0,12	349,84
Final fine per firm	3,71	1,37	4,46	0,01	14,85
Final fine per consolidated firm	4,03	1,72	4,7	0,01	14,85
Maximum duration of cartel (years)	8,02	6,54	5,97	0,02	23
Duration of investigation (years)	4,03	3,75	2,01	1,12	9,87
Cartel stability	0,64	-	-	0	1
Number of countries	5,5	4	4,61	1	18
Number of countries (parent firm)	5,57	4	4,72	1	18
Cases stem from a notification	0,07	-	-	0	1
Cases stem from the Commission's own initiative	0,64	-	-	0	1
Cases stem from a complaint	0,29	-	-	0	1

Note: Fines in constant millions of euro 2010 (GDP World Bank deflator). (\*) Cartel cases in which only associations were involved (4) have been excluded from these descriptive statistics

Source: Authors' calculations based on data from EC publicly available decisions

**Table AIII.3: Cartel cases in the third period (41 cases considered). 1996-2005**

Variables	Average	Median	Standard deviation	Minimum	Maximum
Number of firms	8,15	7	4,82	2	25
Number of consolidated firms	6,22	5	3,4	2	17
Final fine	133,27	79,92	182,86	0,54	1029,9
Final fine per firm	18,09	11,25	24,86	0,11	140,5
Final fine per consolidated firm	21,93	16,07	25,69	0,13	140,5
Average (percentage) reduction of fine by leniency	0,38	0,35	0,2	0,1	1
Percentage of firms benefited by leniency	0,16	0,12	0,11	0,04	0,5
Maximum duration of cartel (years)	8,02	6	5,61	0,25	29
Duration of investigation (years)	4,03	3,75	1,53	1,83	8,83
Cartel stability	0,29	-	-	0	1
Number of countries	3,93	4	2,42	1	11
Number of countries (parent firm)	3,63	4	1,96	1	10
Cases stem from a leniency application	0,46	-	-	0	1
Cases stem from a notification	0	-	-	0	1
Cases stem from the Commission's own initiative	0,39	-	-	0	1
Cases stem from a complaint	0,15	-	-	0	1

Note: Fines in constant millions of euro 2010 (GDP World Bank deflator). (\*) Cartel cases in which only associations were involved (3) have been excluded from these descriptive statistics

Source: Authors' calculations based on data from EC publicly available decisions

**Table AIII.4: Cartel cases in the fourth period (53 cases). 2006-2014**

Variables	Average	Median	Standard deviation	Minimum	Maximum
Number of firms	14,96	11	11,44	2	62
Number of consolidated firms	6,57	5	4,01	2	17
Final fine	334,71	175,65	369,19	5,09	1427,96
Final fine per firm	32,94	13,51	61,81	0,85	373,56
Final fine per consolidated firm	62,08	31,69	94,51	1,27	560,34
Average (percentage) reduction of fine by leniency	0,61	0,56	0,22	0,22	1
Percentage of firms benefited by leniency	0,1	0,08	0,07	0,02	0,25
Maximum duration of cartel (years)	7,64	5,67	7,09	0,39	34,92
Duration of investigation (years)	4,35	4,08	1,55	2,08	8,5
Cartel stability	0,24	-	-	0	1
Number of countries	5,79	6	2,77	2	13
Number of countries (parent firm)	4,28	4	2,11	1	12
Cases stem from a leniency application	0,77	-	-	0	1
Cases stem from a notification	0	-	-	0	1
Cases stem from the Commission's own initiative	0,21	-	-	0	1
Cases stem from a complaint	0,02	-	-	0	1

Note: Fines in constant millions of euro 2010 (GDP World Bank deflator)

Source: Authors' calculations based on data from EC publicly available decisions

#### **Annex IV: References to the Official Journal of the European Union (ONLINE ACCESS)**

[OJ 204/62. 21.2.62.] Regulation N° 17: First Council Regulation No 17 of 6 February 1962 implementing Articles 85 and 86 of the Treaty

[OJ 36, 6.3.1965] Regulation No 19/65/EEC of 2 March of the Council on application of Article 85 (3) of the Treaty to certain categories of agreements and concerted practices.

[OJ L 219, 16.8.1984] Commission Regulation 2349/84/EEC of 23 July 1984 on the application of Article 85 (3) of the Treaty to certain categories of patent licensing agreements;

[OJ L 53, 22.2.1985] Commission Regulation 417/85/EEC of 19 December 1984 on the application of Article 85 (3) of the Treaty to categories of specialization agreements;

[OJ L 53, 22.2.1985] Commission Regulation 418/85/EEC of 19 December 1984 on the application of Article 85 (3) of the Treaty to categories of research and development agreements.

[OJ L 45/95. 27.4.95] Decision of the Council and the Commission of 10 April 1995 concerning the conclusion of the Agreement between the European Communities and the Government of the United States of America regarding the application of their competition laws.

[OJ L 175, 23.7.1968] Council Regulation (EEC) N° 1017/68 of 19 July 1968 applying competition rules to transport by rail, road and inland waterway.

[OJ L 378, 31.12.1986] Council Regulation (EEC) N° 4056/86 of 22 December 1986 for the application of these rules to the maritime transport.

[1983] ECR 01825 - Judgment of the Court of Justice of 7 June 1983 in Joined Cases 100/80 to 103/80 SA Musique Diffusion Française and Others v Commission.

[OJ C 341/13. 19.12.95] Information of the European Commission concerning its policy of imposing fines for infringements of the competition rules.

[OJ C 207, 18.7.1996] *Commission Notice on the non-imposition or reduction of fines in cartel cases*

[OJ C 9/3, 14.1.98] 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

[COM(2002)45 29.01.2002 final] Report from the Commission to the Council and the European Parliament on the application of the agreements between the European Communities and the Government of the United States of America and the Government of Canada regarding the application of their competition laws.

[OJ C 45, 19.2.2002] *Commission notice on immunity from fines and reduction of fines in cartel cases*

[OJ L 1/1. 4.1.2003] 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 entered into force.

[OJ L 123/18. 27.4.2004] Commission Regulation (EC) 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

[COM(2014) 9.7.2014. 453 final] Communication from the Commission to the European Parliament and the Council “Ten Years of Antitrust Enforcement under Regulation 1/2003: Achievements and Future Perspectives”

[OJ C 101/43. 27.4.2004] Commission Notice on cooperation within the Network of Competition Authorities.

[OJ C 210/2. 1.9.2006] Guidelines on the method of setting fines imposed pursuant to Article 23(2)(a) of Regulation No 1/2003

[OJ C 298/17. 8.12.2006] “Commission Notice on Immunity from fines and reduction of fines in cartel cases”

[OJ L 171/3. 1.7.2008] the “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”

[OJ C 167/1. 2.7.2008] 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

[OJ L 349/1. 5.12.2014] Directive 2014/104/EU of the European Parliament and 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

[OJ L 145, 31.5.2001] Regulation (EC) 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission documents

[OJ L 208/3. 5.8.2015] Commission Regulation (EU) 2015/1348 of 3 August 2015 amending Regulation (EC) No 773/2004 relating to the conduct of proceedings by the Commission pursuant to Articles 81 and 82 of the EC Treaty

[OJ C 256/3. 5.8.2015] Communication from the Commission. Amendments to the Commission Notice on the rules for access to the Commission file in cases pursuant to Articles 81 and 82 of the EC Treaty, Articles 53, 54 and 57 of the EEA Agreement and Council Regulation (EC) No 139/2004

[OJ C 256/1. 5.8.2015] Communication from the Commission. Amendments to the Commission Notice on Immunity from fines and reduction of fines in cartel cases

[OJ C 256/2. 5.8.2015] Communication from the Commission. Amendments to the 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

[OJ C 256/5. 5.8.2015] Communication from the Commission. Amendments to the Commission Notice on the cooperation between the Commission and courts of the EU Member States in the application of Articles 81 and 82 EC