

# "Leniency programs, mergers and collusion."

Giancarlo Spagnolo

Stockholm School of Economics

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My research has focused only on Leniency Programs, which turned out to be a more fertile and important research topic than anticipated. The topic Mergers and Collusion had to be left for future work.

## 1 Introduction

The new Corporate Leniency Policy for cartels, introduced by the US Department of Justice (DoJ) in 1993, is widely regarded as a tremendous policy success. Since its inception an unprecedented number of international cartels has been discovered and successfully prosecuted, very large fines have been levied against price-fixing firms, and several top executives have experienced jail sentences.<sup>1</sup> This highly celebrated success led Australia, Canada, the European Union, Germany, New Zealand, the UK and other countries to introduce analogous programs, and many more to discuss their possible introduction (OECD, 2001).

A crucial feature of the new Corporate Leniency Policy – shared by its mirror images abroad – is its Section A (Section B in the EU) that “automatically” awards immunity from fines and criminal sanctions to the first member of a cartel that spontaneously reports information before an investigation of the cartel is opened.<sup>2</sup> According to DoJ officials and other observers, it is this new feature that led many companies to come (and sometimes rush) forward with information on their cartel.<sup>3</sup>

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<sup>1</sup>Leniency policies/programs reduce sanctions against wrongdoers that report information on their crime and cooperate with the law-enforcing agency during prosecution. The DoJ introduced a leniency policy for cartels already in 1978, but the old policy was much less generous than the new one. As a result, very few firms applied for leniency before 1993.

<sup>2</sup>The amnesty typically includes all the firm’s employees. In February 2002 the European Commission revised its eight-year-old leniency policy exactly to introduce a similar feature: “automatic,” complete exemption from fines for the first firm of a cartel that spontaneously self-report before any investigation of the cartel is opened (European Commission, 2002). The previous version, introduced in 1996, left substantial discretion to the European Commission, which may have scared potential applicants (no firm spontaneously self-reported under the old program).

<sup>3</sup>According to Scott Hammond, Director of Criminal Enforcement of the DoJ Antitrust Division, about 50% of the leniency applications are now spontaneous reports falling within Section A of the Corporate Leniency Policy (personal communication). He claimed that “over the last five years, the Amnesty Program has been responsible for detecting and prosecuting more antitrust violation than all of our [other investigating tools]” (2001). Similar statements can be found in Spratling (1998, 1999). See

Clearly, one cannot be sure that these policies are the success they are claimed to be. The ultimate objective of antitrust laws against cartels is deterrence at the lowest cost, not easy prosecution, and the deterrence effects of the policies, the change in active cartels caused by the Corporate Leniency Policy, cannot be observed. In principle, the increase in uncovered cartels might be due to an increase in cartel activity. Still, the optimistic view that the increase in convicted cartels brought by the new Corporate Leniency Policy should improve the deterrence effect of Antitrust laws against "hard core" long-term cartels appears plausible.

My research has focussed on two issues: the in depth analysis of a potentially counterproductive effect of leniency programs, in "Self-Defeating Antitrust and Procurement Laws"; and the characterization of "Optimal Leniency Programs."

## 2 "Self-Defeating Antitrust and Procurement Laws"

The paper draws attention on a problem connected with current leniency programs, a potentially counterproductive feature of these celebrated policies. It shows that even if they help deter hard core cartels sustained by repeated interaction, current leniency programs may be generating new cartels by making collusion enforceable in occasional market interactions – isolated or infrequently repeated Bertrand oligopolies and sealed bid auctions – where no collusion would be supportable in the absence of Antitrust laws, nor if leniency programs were better designed.

The way current leniency programs may achieve the remarkable result of solving one of the oldest puzzles in economics is by providing firms with the otherwise missing credible threat necessary to enforce promises of cooperation (collusion) among rivals. In fact, two are the features of Antitrust laws that, together, may lead to this paradoxical result and possibly to deadweight welfare losses in society. The first one is the size of sanctions against colluding firms, way too low to deter cartels given the investigation resources available to Antitrust Authorities.<sup>4</sup> The second is the reduction in sanctions leniency

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also the OECD's (2001) report on leniency programs.

<sup>4</sup>This is particularly true for EU's Antitrust laws, having absolutely no sanctions against individuals, and monetary fines for convicted firms only up to 10% of their yearly turnover. The fact that many cartels have recently been uncovered in the US and the EC reveals that the deterrence effect of current expected sanctions is still pretty low.

policies award to firms that spontaneously report information on their cartel when the Antitrust Authority has yet no information on it; the design of Section A of the US's leniency policy (Section B of the EU's one), the one considered at the root of the success of the policy.

The first feature, too low overall sanctions, ensures that firms are willing to collude if they find a way to discipline each other's temptation to "cheat". The second feature, the immunity from sanctions for the first firm that spontaneously reports information on its cartel to the Antitrust Authority, provides the credible threat necessary to discipline the collusive agreement in occasional interactions: it ensures that if one firm unilaterally defects from collusive strategies, other firms will find it convenient to punish it by reporting information on the initial agreement to the Antitrust Authority. This legally provided threat is credible, as in occasional interactions that resemble a Bertrand oligopoly after a firm undercuts the collusive price it becomes a strictly dominant strategy for each other firm to report and seek amnesty. And since the interaction is occasional, there are neither carrots nor sticks firms could use to refrain each other from reporting information. As long as a firm that unilaterally defects from collusive strategies has no incentives to report itself, the possibility to obtain amnesty by reporting under the leniency policy can be used as a credible threat. Under current leniency policies "folk theorems" obtain for a number of one-shot or infrequently repeated market interactions: perfect collusion becomes enforceable, independent of discount factors, in the homogeneous Bertrand oligopoly, the Bertrand-Edgeworth (capacity-constrained) oligopoly, split-award low-price (pay-your-bid) procurement auctions, discriminatory auctions of shares, other multi-unit first-price auctions and even – under some additional conditions – in single-unit first-price auctions.<sup>5</sup>

A crucial necessary condition for this counterproductive effect to realize is that a firm that unilaterally undercuts its cartel has not incentives to report itself information to the Antitrust Authority. If a firm could profit by simultaneously undercutting its cartel and reporting information under the leniency policy, other cartel's members would

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<sup>5</sup>Such general results do not obtain for games like the Cournot oligopoly, where the payoff of a player that sticks to the agreed collusive strategies is a smooth function of the strategic variable set by a player that unilaterally deviates from collusive strategies. This is because the deviating player can then choose to restrain the "size" of its deviation to leave sufficient profits to non-deviating firms to induce them not to report.

have no stick left to punish such defection (the first reporting firm obtains amnesty) and collusion would not be enforceable. Unfortunately, there are features of Antitrust, Civil and Procurement laws that guarantee that this necessary condition is very often satisfied. The "Restitution" requirement of the US Corporate Leniency Policy, according to which – to obtain leniency – the reporting firm must give back all the illegally obtained profits, does the job. The lack of protection from Civil law (treble) damage suits for reporting firms, shared by all leniency policies, may also prevent a defecting firm from reporting. But the most obvious factor guaranteeing that a firm that undercuts a cartel cannot gain by simultaneously reporting the cartel to the Antitrust Authority is the temporal separation between market interaction (price competition, auction, etc.) and the actual execution of the correspondent transactions.

The temporal separation between market interaction and actual transactions is pervasive in real world markets, particularly in auctions, and for Public Procurement it is even established by law. A mandatory temporal separation between end of procurement auctions and actual procurement contracting has been present for a long time in countries like Belgium, France, and Italy. Other European countries, like Germany, are currently introducing such temporal separation forced by a 1999 ruling of the European Court of Justice.<sup>6</sup> In the US, Procurement auctions and actual contracting need not be formally separated, but the Federal Acquisition Regulation (FAR) allows to interrupt the execution of an awarded contract in case of a protest after the award, thereby effectively inducing a temporal separation in the case of firms reporting evidence of a cartel.<sup>7</sup>

The temporal separation between a procurement auction and the corresponding transaction may have benefits.<sup>8</sup> However, it turns out that whenever the determination of price through the market mechanism is separated from the realization of payoffs through the execution of the related transactions, the counterproductive effect of leniency policy discussed above becomes extremely robust: then no gains from undercutting a collusively

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<sup>6</sup>Article 2 of Council Directive 89/665/EEC (21/12/89) already required Member States to establish review procedures for violations of EU law in awarding public procurement contracts, including measures to "suspend or ensure the suspension for the award of a public contract" (1a) and "set aside or ensure the setting aside of decision taken unlawfully..." (1b).

<sup>7</sup>See FAR §14.408-8 (sealed bid auctions), and §33.104 (protest after award). An application for amnesty of a ring member together with a protest would block the execution of an awarded contract (the FAR explicitly requires the "rejection of offers suspected of being collusive", §3.103-2b).

<sup>8</sup>The EC favors it because it is thought to make discrimination of foreign producers more difficult.

agreed price ever realizes. Consider, for example, a collusive agreement between bidders to share items at a low price in an occasional sealed bid first-price multi-unit auction. With separation between auction outcome and effective transaction, if a bidder defects from the collusively agreed strategies other bidders can observe the defection and punish it by reporting the initial cartel to the Antitrust Authority before any payoff realizes. The seller will then find it convenient, and often mandatory to nullify the auction distorted by the collusive agreement and repeat it under stricter monitoring and/or higher reserve prices. Similarly, suppose a bidder simultaneously defects from collusive strategies and reports information about the cartel to seek amnesty. Since no transaction occurred yet, the seller will then nullify the auction distorted by the collusive agreement and repeat it under stricter monitoring or higher reserve prices. In other words, the separation of market outcome and actual transaction – together with current leniency policies – may generate stable collusive agreements in occasional interactions by ensuring that when a party unilaterally defects, a punishment takes place but no gains from defection ever realize.

### 3 “Optimal Leniency Programs”

This paper consider the effects of the first sections of current leniency programs in terms of their crime deterrence effects, of their ability to induce undetected law violators to self-report.<sup>9</sup> The idea, of course, is that leniency programs for law violators who are not under investigation may destabilize cartels and organized crime by undermining internal trust with the increased risk that one of the involved parties unilaterally reports to enjoy the benefits of the leniency program (which are typically restricted to the first reporting party only).

Within a very stylized model we first focus on the “moderate” leniency programs common in reality, that only reduce or at best cancel sanctions for a self-reporting agent. We show that, in general, these programs can have little deterrence effect against long-term criminal relations. This is because if such relations were enforced before the introduction of the leniency program, it means that there where sufficient expected gains from the

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<sup>9</sup>Note that from a narrow economic point of view, deterrence is all what matters, it is the ultimate objective of law enforcement. If one disregards moral concerns (including justice-related psychological effects on victims), were prosecution to have no deterrence effects it would be a pure deadweight cost for society.

relation to both curb incentives to cheat and compensate for the probability of being caught and sanctioned. Then, self-reporting within a leniency program that reduces or cancels the sanctions for a reporting agent brings this agent only a loss of expected gains from the criminal relation.

We then proceed by analyzing “courageous” leniency programs, programs that allow wrongdoers that report “hard” information on their criminal organization to be rewarded, and by characterizing optimal leniency programs under different assumptions about the costs of administering sanctions and rewards. We find that, at least in our model, optimally designed leniency programs for undetected wrongdoers can be very powerful. When political and moral constraints on their design are not too tight, optimal leniency programs can costlessly deter most cartels and other illegal transactions enforced by reputational considerations. To have such pervasive effects, leniency programs must really be courageous. They should not only reduce sanctions, but also pay sufficiently high rewards to wrongdoers that spontaneously report, allowing to prove guilty their partners.

Of course, there may be drawbacks in giving rewards to law violators that self-report. Abstracting from moral and political considerations, one possible drawback is that such programs would give agents incentives to distort information in the attempt to get the rewards. In the paper we focus on programs that require agents to report “hard” information, so this problem is absent. The problem emerges when agents reporting “soft” information, e.g. by witnessing, are also entitled to the program’s benefits. In that case, the drawback can be taken care of by substantially increasing the sanctions for reporting false information within a leniency program. The denounced agents will have all the incentives to demonstrate that the reported information was false.