

Optimal Deterrence of Competition Law Infringements

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Deterring EU Competition Law Infringements:
Are We Using the Right Sanctions?

3 December 2012

Introduction

- 1 Simple analytics of deterrence
- 2 Current state of deterrence: Under- or over-deterrence?
- 3 Policy directions to enhance deterrence

Simple Analytics of Deterrence

When is cartel formation deterred?

- $\Delta\pi$ is the incremental profit from collusion
- γ is the penalty multiple
- Penalty is $\gamma \times \Delta\pi$

How high must γ be so as to deter cartel formation?

Simple Analytics of Deterrence

Static participation approach: Cartel formation is deterred when collusion is unprofitable.

- If α is the probability of being penalized then cartel formation is unprofitable if and only if:

$$\underbrace{(1 - \alpha) \times \Delta\pi}_{\text{Not caught}} + \underbrace{\alpha \times (\Delta\pi - \gamma \times \Delta\pi)}_{\text{Caught}} < 0$$

or

$$\gamma > \frac{1}{\alpha}.$$

- If $\alpha = 0.15$ then deterrence occurs when $\gamma > 6.67$.

Simple Analytics of Deterrence

Dynamic incentive approach: Cartel formation is deterred when collusion is unstable.

- Penalty in t^{th} period of the cartel:

$$F_t = (1 - \beta) \times F_{t-1} + \gamma \times \Delta\pi, \text{ where } 0 < \beta < 1.$$

- Penalty grows over time and converges to

$$F = \left(\frac{\gamma}{\beta} \right) \Delta\pi.$$

Simple Analytics of Deterrence

- Steady-state condition for cartel stability:

$$\underbrace{\pi^c + \alpha \times (\delta W - F) + (1 - \alpha) \times \delta V}_{\text{Payoff from colluding}} \geq \underbrace{\pi^{dev} + \delta W - \alpha \times F}_{\text{Payoff from deviating}}$$

where

- π^c is the profit from collusion
- π^{dev} is the profit from deviation
- W is the present value of the non-collusive profit stream
- V is the expected present value of the collusive profit stream
- δ is the discount factor

Simple Analytics of Deterrence

- Stability condition for collusion does not hold when

$$\gamma > \frac{\beta}{\alpha}.$$

- If $\alpha = 0.15$ and $\beta = 0.10$ then deterrence occurs when $\gamma > 0.67$.
- Takeaway: It takes much lower penalties to destabilize a cartel than to make it unprofitable.

Status of Deterrence

- Are we in a regime of under- or over-deterrence?
- Over-deterrence can reduce welfare because
 - firms are wrongly accused of collusion.
 - managers engage in unprofitable collusion.
- Welfare loss
 - Over-deterrence can create a small welfare loss in many markets.
 - Under-deterrence can create a large welfare loss in a few markets.

Status of Deterrence

Error in the discovery and prosecution process.

- Competitive firms are wrongly accused of collusion.
- Distorts behavior by competitive firms. For example,
 - not engaging in R&D joint ventures
 - not joining a trade association
 - not entering a market.

This type of error is likely to be small.

- Threshold for guilt is quite high in most jurisdictions.
- Few cases in which guilt is debated ex post.

Status of Deterrence

Non-senior managers may engage in collusion that is unprofitable but enhances their perceived performance.

- High penalties can cause senior management to invest in monitoring of employees to avoid misguided collusion.
- Investment can be excessive from a social welfare perspective.

Status of Deterrence

Measuring Deterrence

How would we go about determining whether there is over- or under-deterrence?

- 1 Calculate the expected profit of forming a stable cartel.
- 2 Examine behavior of senior management.

Status of Deterrence

Measuring Deterrence

Approach 1: Calculate the expected profit of forming a stable cartel.

- Penalty - can be estimated.
- Overcharge - difficult to estimate and only for a biased sample: population of discovered cartels.
- Probability of cartel discovery and conviction - very difficult to estimate and only for the same biased sample.
 - Estimates of around 15% annually are an upper bound because they come from discovered cartels but are from the "before leniency programs" era.

Status of Deterrence

Measuring Deterrence

Approach 2: Examine behavior of senior management.

- Is senior management taking measures to discourage their managers from participating in a cartel?
 - *Ex ante*: Institute effective antitrust compliance programs.
 - *Ex post*: Severely discipline managers who are found to have colluded.

Status of Deterrence

Measuring Deterrence

Are employees severely punished for participating in a cartel?

Status of Deterrence

Measuring Deterrence



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BA sales chief on price-fixing charge to join board

By Michael Peel, Legal Correspondent

Published: November 28 2008 02:00 | Last updated: November 28 2008 02:00

A British Airways executive facing the threat of jail for allegedly fixing fuel prices has been promoted to the company's board as part of a restructuring programme.

Andrew Crawley, BA's head of sales, will take up his post in January, less than two weeks before he is due to appear in court along with three former BA executives accused of the same offence.

Status of Deterrence

Measuring Deterrence

Are employees severely punished for participating in a cartel?

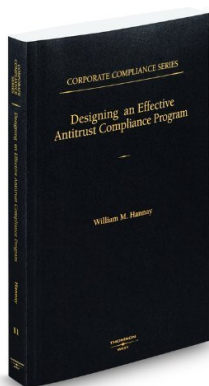
- British Airways promoted an executive when he was pending trial in the passenger fuel surcharges case (2007).
- Robert Koehler is CEO of SGL Carbon (2012) after admitting to price-fixing in graphite electrodes (1999).
- Isolated cases? More recent evidence?
- Requires careful study.

Status of Deterrence

Measuring Deterrence

Companies are instituting antitrust compliance program.

- But do they want them to be effective?



Status of Deterrence

Measuring Deterrence

AkzoNobel

- Largest global paints and coatings company and one of the largest producers of specialty chemicals.
- Involved in 9 (discovered) cartels over 1998-2011.

Competition law compliance manual



AkzoNobel

Tomorrow's Answers Today



Letter from the CEO

AkzoNobel has a policy of absolute compliance with competition law. AkzoNobel companies and their employees worldwide must strictly observe and adhere to this policy.

The Board of Management considers compliance with competition law to be more than a legal requirement; it is core to AkzoNobel's value of integrity and responsibility. Our reputation and long-term success are based not only on how effectively we serve our customers and how successful we are at increasing shareholder value, but also on the way we conduct our business and our competitive practices in the market place. We want it to be unmistakably clear to the outside world and to our employees alike, that we compete fairly and lawfully; and with integrity.

AkzoNobel operates in a global economy where competition laws play an ever more important role. As an international group of companies, we find ourselves under constant close scrutiny, from both national and supranational authorities. Breaches of competition law, even unintentional ones, can have severe consequences for the financial condition, reputation and continued viability of our company. For employees failure to comply with competition law can potentially result in loss of employment, ruined careers, fines and imprisonment.

AkzoNobel's company values put compliance ahead of business results. Every AkzoNobel employee should be aware that his or her career will not suffer should compliance with the code of conduct, which of course includes compliance with competition law, have an adverse impact on business results. On the other hand, disciplinary action will be taken against any employee who violates competition law. Such disciplinary action may include dismissal. In this area we are "a zero tolerance company".

Although competition laws are complex, there are fundamental rules that AkzoNobel employees are required to know and follow. It is essential that you are able to identify situations where competition law issues may arise and where you must seek legal advice.

Please read this manual carefully and ensure you comply fully with the competition rules at all times. If you suspect you or any other employee of AkzoNobel has infringed or may become involved in any infringement of competition law, or whenever you are considering an arrangement that gives you any doubt as to whether you would achieve your business objective in a legitimate way, you must seek timely advice from AkzoNobel Legal & IP.

Hans Wijers
CEO AkzoNobel

Status of Deterrence

Measuring Deterrence

Many cartels *involved* senior management

- 80% of cartels involved senior management (M. Berzins and F. Sofo, 2008)
 - Data: 69 publicly available cases from Australia, Canada, Denmark, the EC, Ireland, Japan, Korea, The Netherlands, New Zealand, UK, USA; 2000-06.
- 47% of cartels involved the highest level of management (J. Ashton and A. Pressey, 2012)
 - Data: 56 international cartels handled by DG Comp, 1990-2009.

Status of Deterrence

Measuring Deterrence

- No compelling evidence that senior management is getting tough on collusion.
 - Lack of implementation of aggressive compliance programs.
 - Lack of severe punishment for employees caught colluding.
- Competition authorities may under-value the importance of deterrence compared to desistance.
- Excessive reliance on leniency programs.

Status of Deterrence

Competition Authority Bias

- A competition authority decides
 - how to allocate resources across detection, prosecution, penalization, and evaluation.
 - whether to actively discover cartels or just respond to leniency applications, customer complaints, etc.
 - how many cases to take on, and which cases to take on.
 - what penalties to impose.
 - how to evaluate policies and performance.
- These choices influence
 - desistance - shutting down cartels
 - deterrence - discouraging cartel formation

Status of Deterrence

Competition Authority Bias

- Why might a competition authority not do all they can to promote deterrence?
 - Desistance is observable, deterrence is not.
- How would under-valuing deterrence manifest itself?
 - Content with prosecuting the cases that come to them, rather than increasing the likelihood of a cartel being discovered.
 - "The OFT has been too reliant on complaints as a source of its competition enforcement work. The OFT should start a greater proportion of investigations on its own initiative." (Committee of Public Accounts Report, 2006)
 - Smaller penalties to close a case - plea bargaining, partial leniency.
 - Not evaluating policies for their effect on the cartel rate.

Status of Deterrence

Leniency Programs

Are leniency programs effective enough?

- Leniency programs are active but how much are they deterring cartel formation? reducing the cartel rate?
- Excessive reliance on a leniency program could weaken non-lenieny enforcement.

Status of Deterrence

Leniency Programs

J. Harrington and M. Chang - "Endogenous Antitrust Enforcement in the Presence of a Corporate Leniency Program" (2012)

- Constructs a (theoretical) cartel birth and death process for a population of industries.
- Non-leniency enforcement is measured by the probability that a cartel is discovered and convicted (without a leniency applicant).
- Non-leniency enforcement depends on
 - number of possible non-leniency cases
 - how many cases the competition authority takes on (assumed to minimize the cartel rate)
 - competition authority resources.

Status of Deterrence

Leniency Programs

What is the effect of introducing a leniency program on non-lenieny enforcement? Non-lenieny enforcement could be

- *less aggressive* because there are fewer resources available to prosecute them.
- *more aggressive* if the leniency program deters cartel formation so there are fewer cartels and fewer non-lenieny cases to prosecute.

Status of Deterrence

Leniency Programs

A leniency program decreases the cartel rate when

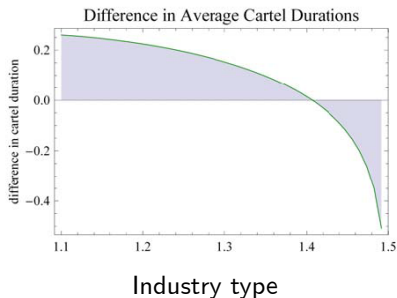
- leniency cases are handled sufficiently expeditiously or
- penalties are sufficiently strong or
- non-lenieny enforcement was sufficiently weak prior to the introduction of a leniency program.

Status of Deterrence

Leniency Programs

If leniency cases do not save much on resources and penalties are not sufficiently strong then a leniency program is shown to

- weaken non-lenieny enforcement.
- enhance the duration of the most stable cartels.



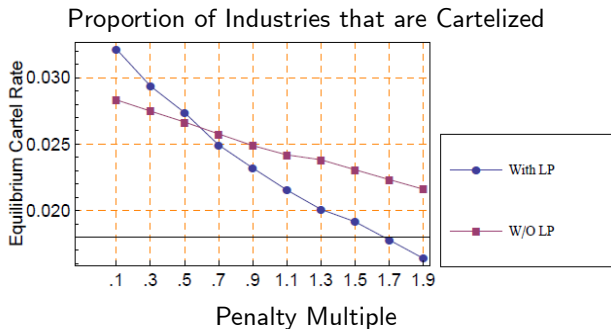
(Note: Higher industry type supports less stable cartels)

Status of Deterrence

Leniency Programs

A leniency program can actually increase the cartel rate.

- Less stable cartels no longer form because of the leniency program.
- More stable cartels have a smaller chance of detection because non-leniency enforcement is weaker.
- Fewer cartels form but they last longer.



Policy Directions to Enhance Deterrence

Whistleblower Programs

Whistleblower program: Offer rewards to individuals who report a cartel but are not part of the cartel.

- Industrial buyers may become suspicious because
 - some suppliers are no longer willing to bid for their business
 - firms' price changes are much more coordinated.
- Sales representatives of the colluding firms may become suspicious because
 - of a steady rise in prices
 - of instructions not to deviate from the price list even when business will be lost.

Policy Directions to Enhance Deterrence

Whistleblower Programs

Carbonless paper cartel (EC decision)

A Sappi employee admits that he had very strong suspicions that two fellow employees had been to meetings with competitors. He recollects that they would come back from trade association meetings with a very definite view on the price increases that were to be implemented and that they were relatively unconcerned by competitor reactions.

Policy Directions to Enhance Deterrence

Whistleblower Programs

- W. Kovacic, "Private Monitoring and Antitrust Enforcement: Paying Informants to Reveal Cartels," *George Washington Law Review* (2000).
- Korea Fair Trade Commission (2005)
 - Rewards of up to 1 billion Korean Won (approx. 700,000€)
 - Highest reward given: 210 million KRW (approx. 150,000€)
- UK's Office of Fair Trading (2008)
 - Rewards of up to £100,000.

Policy Directions to Enhance Deterrence

Whistleblower Programs

- U.S. General Accountability Report (2011):

DOJ Antitrust Division officials acknowledge that a whistleblower reward could increase ... the number of cartels detected. However, these officials maintain that the potential benefits would be outweighed by the ... disadvantages, most importantly the threat to witness credibility.

- *Recommendation:* Allow a whistleblower's company to apply for leniency.
 - If it induces a leniency application then the whistleblower's credibility is substantiated.
 - Enhances an employee's incentive to report.

Policy Directions to Enhance Deterrence

Screening

- *Screening* is the use of market data to identify markets where collusion is suspected.
- Purpose of screening is to identify markets worthy of investigation.
- Screening has been performed with some success in Brazil, Mexico, The Netherlands, South Africa.

Policy Directions to Enhance Deterrence

Screening

Leniency programs and screening are complements.

- *Screening enhances the efficacy of a leniency program:* The more likely a cartel member believes it'll be caught, the more apt it is to apply for amnesty.
- *A leniency program enhances the efficacy of screening:* If a competition authority discovers a suspected cartel, those suspicions might induce a firm to apply for amnesty.

Policy Directions to Enhance Deterrence

Individual Penalties and Leniency

- Individual penalties - fines, debarment, incarceration.
- Individual penalties not only deter but also create an opportunity for individual leniency.
- *Recommendation*: Design an individual leniency program to create a race among employees *within* the firm.
- Proposal of C. Leslie (*William and Mary Law Review*, 2008)
 - Full individual leniency to the first employee of the first firm to cooperate.
 - Partial leniency to the first employee of later firms to cooperate.
 - "Confession is not a team sport, it is an individual event."

Policy Directions to Enhance Deterrence

Joint Research

Joint research between scholars (universities) and practitioners (competitor authorities).

- If we want to deter cartels from forming, it would be helpful to better understand *why they form when they do*.
- If we want to encourage firms to come forward and cooperate, it would be helpful to better understand *why a firm applies for leniency when it does*.
- If we want to determine whether we are winning the war against cartels, it would be helpful to *measure the impact of policy on the frequency of cartels*.