Deterring Cartels or Convicting Them?

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Introduction

Is the world becoming inhospitable for cartels?

- More aggressive policies

  - Penalty formulas are more severe

    - US: 1991 Revision of Federal Sentencing Guidelines, ex: Ho¤man LaRoche - $500 million.
    - EU: 2006 Fine Guidelines, ex: Saint Gobain - e896 million.

  - US: maximum jail sentence raised from 3 to 10 years
  - EU: introduction of customer damages
  - Corporate Leniency Programs

    - U.S. (1978, revised 1993, revised 2004)
    - EU (1996, revised 2002)
    - Over 50 countries and unions have leniency programs.

- Evidence of increased enforcement

Introduction

Annual Cartel Detections by the US & EC Peaked in 2005-07
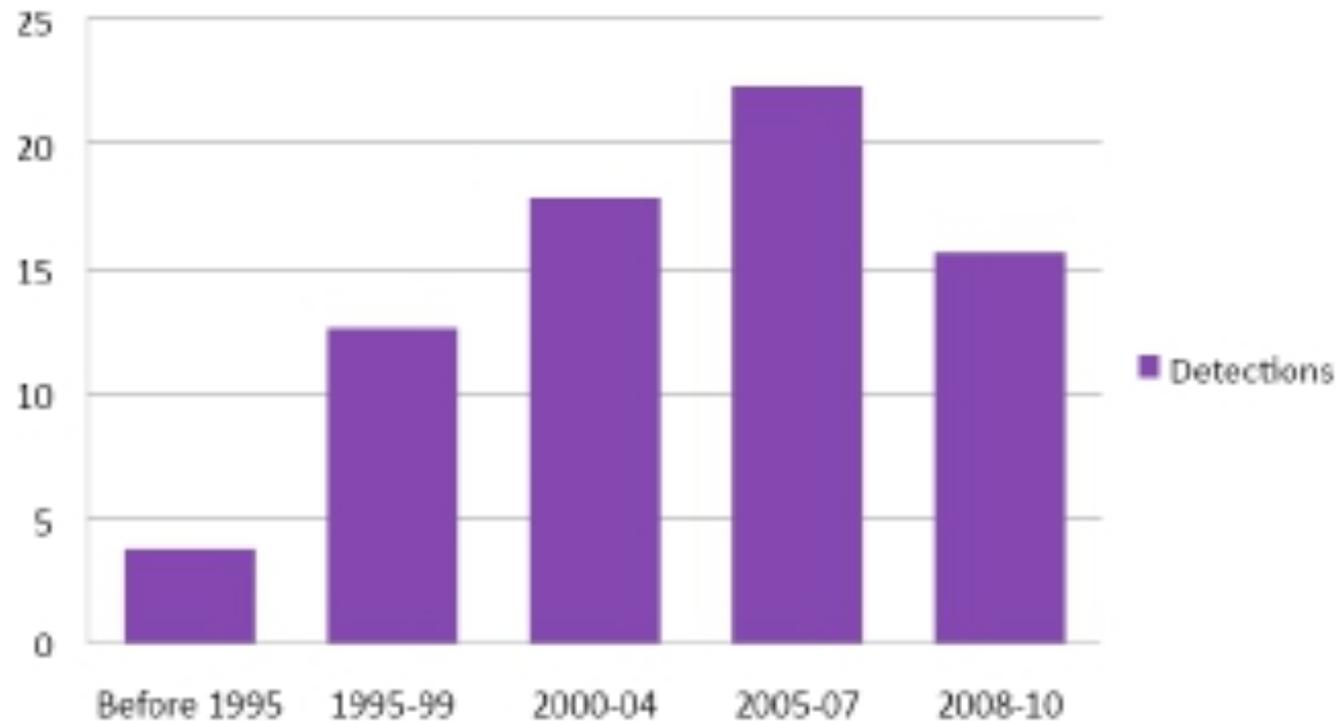
Source: Connor (2011)

Introduction

Detection Rates by the **EU's NCAs** Surpass All Others since 2000
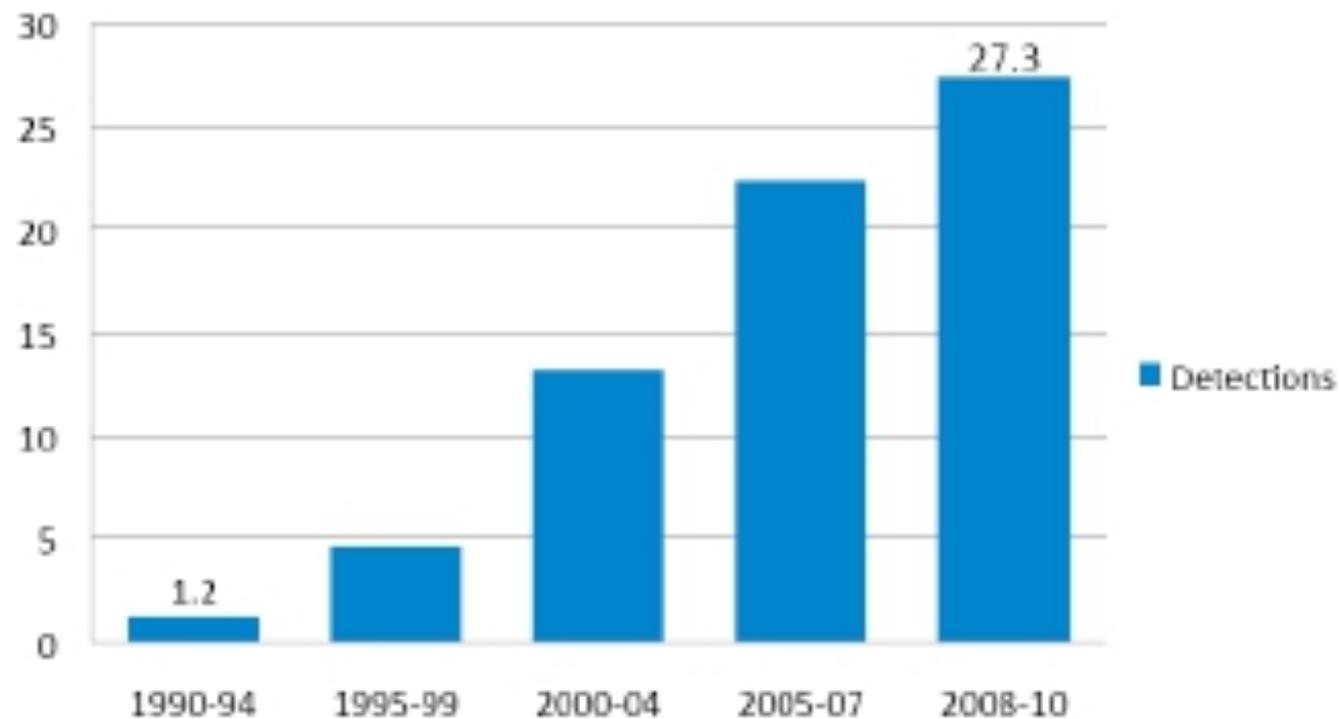
Source: Connor (2011)

Introduction

- ## US DOJ
  - 1998 - 2004: 44% of defendants were sentenced to jail.
  - 2004 - 2010: 74% of defendants were sentenced to jail.

Figure 6: Total Days of Jail Time Imposed in Criminal Cartel Cases, by Fiscal Year of Sentencing
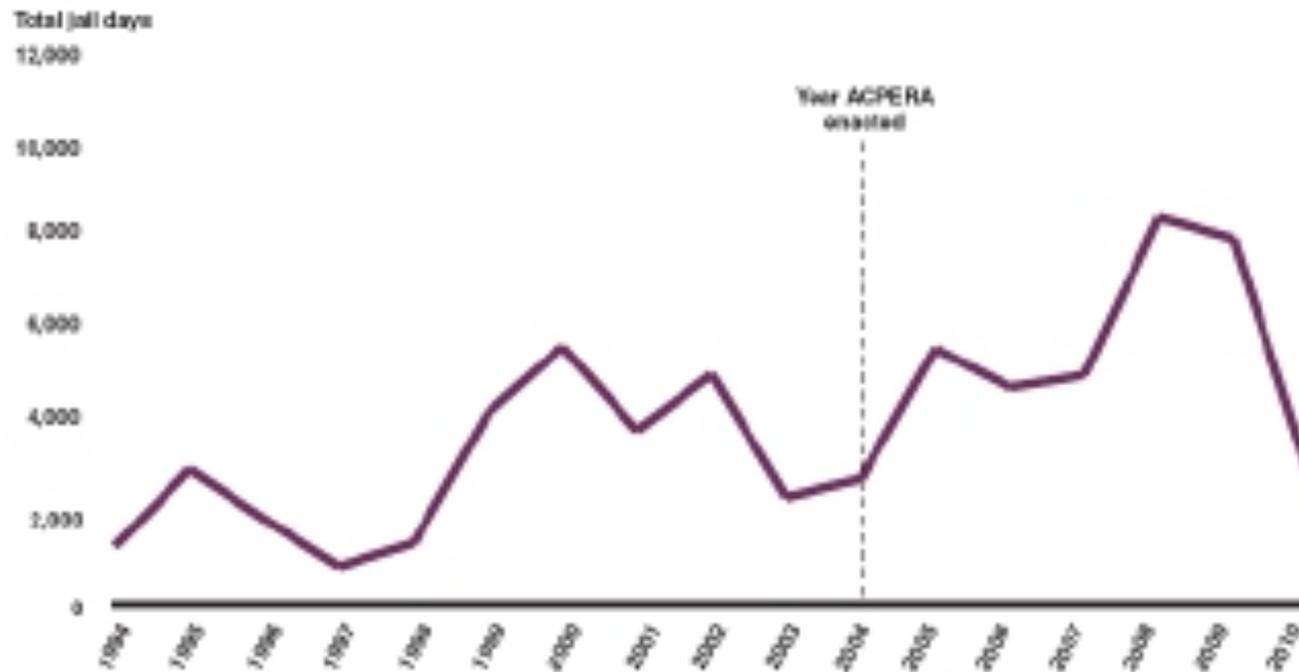
Source: GAO (2011)

Introduction

Figure 1 Total and per firm fines, 1999-2010.
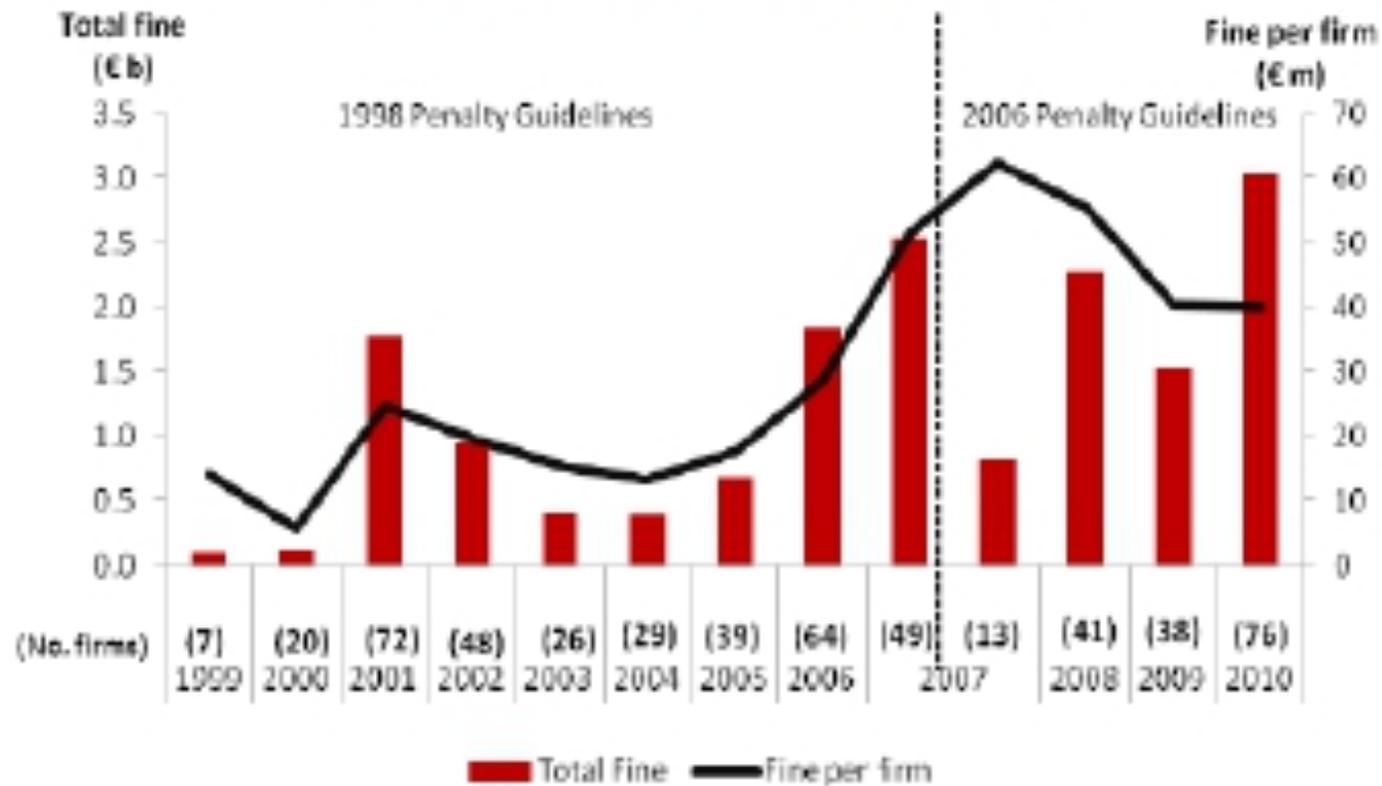
Source: Veljanovski (2011)

Introduction

Cartels are still forming!

- 1993: Revision of U.S. leniency program
- 1996: Introduction of EC leniency program
- 1999: DRAM cartel formed
- 2001: LCD Panel cartel formed
- 2002: Revision of EC leniency program
- 2004: Flat Glass cartel formed

Introduction

- Are we winning the war against cartels?

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- Are we winning the war against cartels?
    - Measurement challenge

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  - Measurement challenge

- Are we trying to win the war?

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- Overview
  - Measuring the impact of enforcement
  - Analyzing competition authority behavior

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- Overview

  - Measuring the impact of enforcement
  - Analyzing competition authority behavior
  - Some policy directions

Measuring the Impact of Enforcement

- How many cartels are there? Have their number and severity been declining?
- Are policies - such as leniency programs - proving effective?
  - Have they reduced the cartel rate?
  - Have they reduced the overcharge?
  - Have they reduced cartel duration?
- Are policies reducing the incentives to collude?
  - Have they reduced the expected profitability of forming a cartel?
  - Have they increase the probability of detecting cartels?
  - Have they aiding in prosecuting cartels?

Measuring the Impact of Enforcement

- Empirical challenge: The key performance measure - the total population of cartels - is not observed.

  Question How can we measure the impact of competition policy on cartel activity?

1. Survey companies and law firms.
2. Assess what actions companies are taking to discourage their managers from participating in a cartel.
3. Estimate the effect of enforcement activity on price-cost margins.
4. Estimate the effect of policy on the population of cartels by drawing inferences from the population of discovered cartels.

Measuring the Impact of Enforcement
Firm Behavior

- Are companies taking measures to discourage their managers from participating in a cartel?
  - Instituting effective antitrust compliance programs (ex ante)
  - Severely disciplining managers who collude (ex post)
- Senior management may act in this manner if
  - collusion is unprofitable for shareholders (but is it?)
  - collusion is beneficial to managers through their compensation
- These conditions are unlikely to hold in the U.S. where
  - collusion appears profitable
  - convicted price-fixers are imprisoned
- Many cartels involved senior management
  - CEOs: graphite electrodes, fine arts auction houses, packaging (Australia), marine hoses, food flavor, Dutch industrial gases, carbonless paper

Measuring the Impact of Enforcement

Firm Behavior

- Is the adoption of an antitrust compliance program evidence that senior management wants to discourage collusion?
- Does senior management want its antitrust compliance program to work?
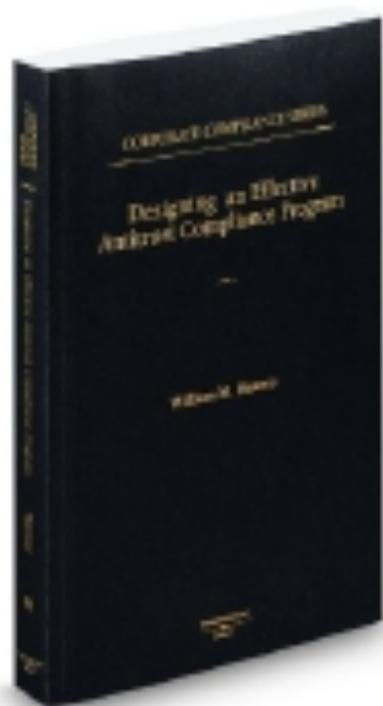
Measuring the Impact of Enforcement
Firm Behavior

Are employees severely punished for participating in a cartel?

U.S.: Non-issue as they are often imprisoned.

EU: Are companies starting to punish employees?

Robert Koehler is still CEO of SGL Carbon after admitting to

price-fixing in graphite electrodes (1999).
British Airways promoted an executive when he was pending trial
in the passenger fuel surcharges case (2007).

- Thierry Desmarest, CEO of Total between 1995 and 2007 and involved in three cartels, remains a director at Total and Chairman of the Total foundation.
- Bock Kwon who served one year in jail (CEO of LG Display Taiwan) returned to LG to serve as the Head of the China Center.

Needed: An examination of the career impact of being a convicted colluder. We are doing for the banking sector (soon).

Measuring the Impact of Enforcement
Firm Behavior

Measuring the Impact of Enforcement
Firm Behavior

- Compliance programs are likely not effective, otherwise law firms would not need to convince law enforcers that firms that adopt them should get a fine discount if caught.

- Until companies fire employees who participated in a cartel, they have not revealed a preference to discourage collusion.

- Collusion is probably still in shareholders' best interests and, therefore, senior management does not want to discourage it.

Measuring the Impact of Enforcement
Price Effects

- Consider a collection of related markets
    - Retail gasoline markets
    - Road construction procurement auctions
    - Chemicals

- Does antitrust enforcement in one of these markets reduce

  price-cost markups in related markets?

- Block, Nold, and Sidak (1981)
    - Regional markets for white pan bread, 1965-76.
    - Observe price p and construct marginal cost mc to estimate price-cost
      margin, (p-mc)/mc .

- Is the price-cost margin lower
    - when the U.S. Department of Justice filed an action in another city in
      that region in that year? YES
    - for the city in which an action was filed in the preceding year? YES

Measuring the Impact of Enforcement
Price E¤ects

Klein (2010)

- 23 OECD countries, 23 two-digit industries

- National leniency programs were associated with a reduction in the average price-cost margin of 3 - 5%.

  Critique

  - Difficult to distinguish one program effect from other aspects of more aggressive enforcement.
  - Are there enough cartels in the economy to have a significant impact on the average price-cost margin?
    Focus instead on the impact on the upper tail of PCMs.

Measuring the Impact of Enforcement
Discovered Cartel Activity

- Using data on discovered cartels.

- If the number of discovered cartels is rising, is that because cartel enforcement is

  - working as detection is more effective?
  - not working as there are more cartels?

- If the number of leniency applications starts to fall, is that because

  - there are fewer cartels due to the leniency program?
  - cartels have modified their practices to make the leniency program less effective?

Measuring the Impact of Enforcement
Discovered Cartel Activity

- How do changes in the observable population of discovered cartels relate to changes in the latent population on discovered cartels?

- Build a model that endogenizes the stochastic process producing a population of cartels.

- Derive how a policy change impacts

  - population of discovered cartels
  - population of cartels.

Measuring the Impact of Enforcement

## Discovered Cartel Activity

- Miller (2009)

- Data: 1985 - 2005

- Hypothesis #1: If the 1993 revision resulted in an increase in the probability of discovery then there is an immediate rise in the number of discovered cartels.

- Hypothesis #2: If the 1993 revision resulted in a decrease in the rate of cartel formation then the number of discovered cartels should adjust to a lower steady level.

Measuring the Impact of Enforcement

Discovered Cartel Activity

- Actual and estimated number of DOJ cartel cases (over a six-month interval).
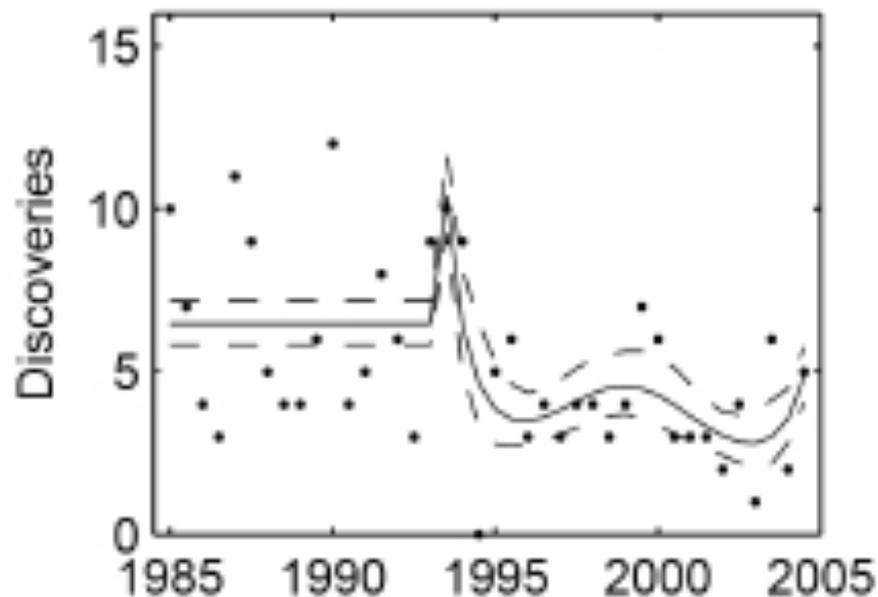
- Kai-Uwe Kühn's critique: Is this pattern really there? Is it driven by other enforcement changes?

Measuring the Impact of Enforcement
Discovered Cartel Activity

- Harrington and Chang (2009) and Brenner (2006)

- Proxy for the cartel rate: Average duration of discovered cartels.

- Consider a policy that is intended to make detection more likely.

- If the policy is working average duration of discovered cartels rises because

    - the least stable cartels shut down (and exit the cartel population)
    - surviving cartels are relatively stable (and thus have longer duration).

- If the policy is ineffective then there is no impact on the average duration of discovered cartels.

- Implication: If a new anti-cartel policy is working then the average duration of discovered cartels should rise (in the short-run).

Measuring the Impact of Enforcement
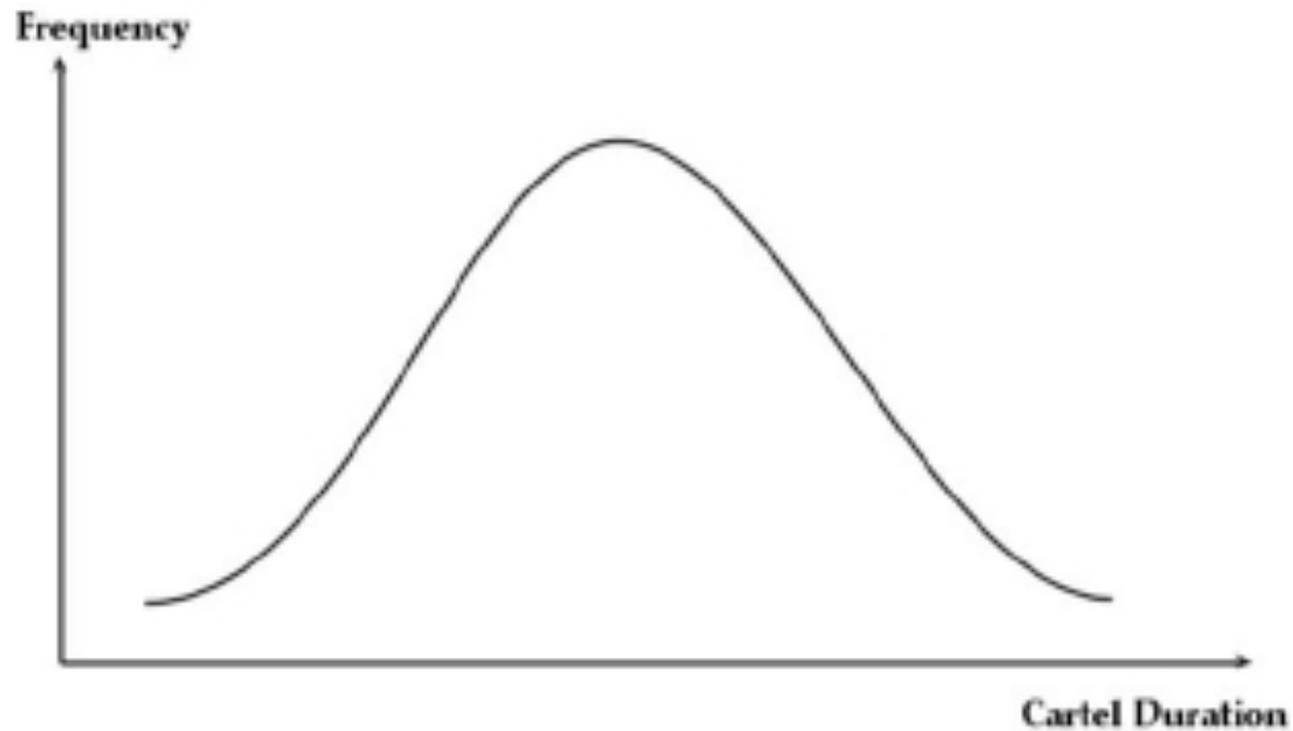
Discovered Cartel Activity

Measuring the Impact of Enforcement
Discovered Cartel Activity
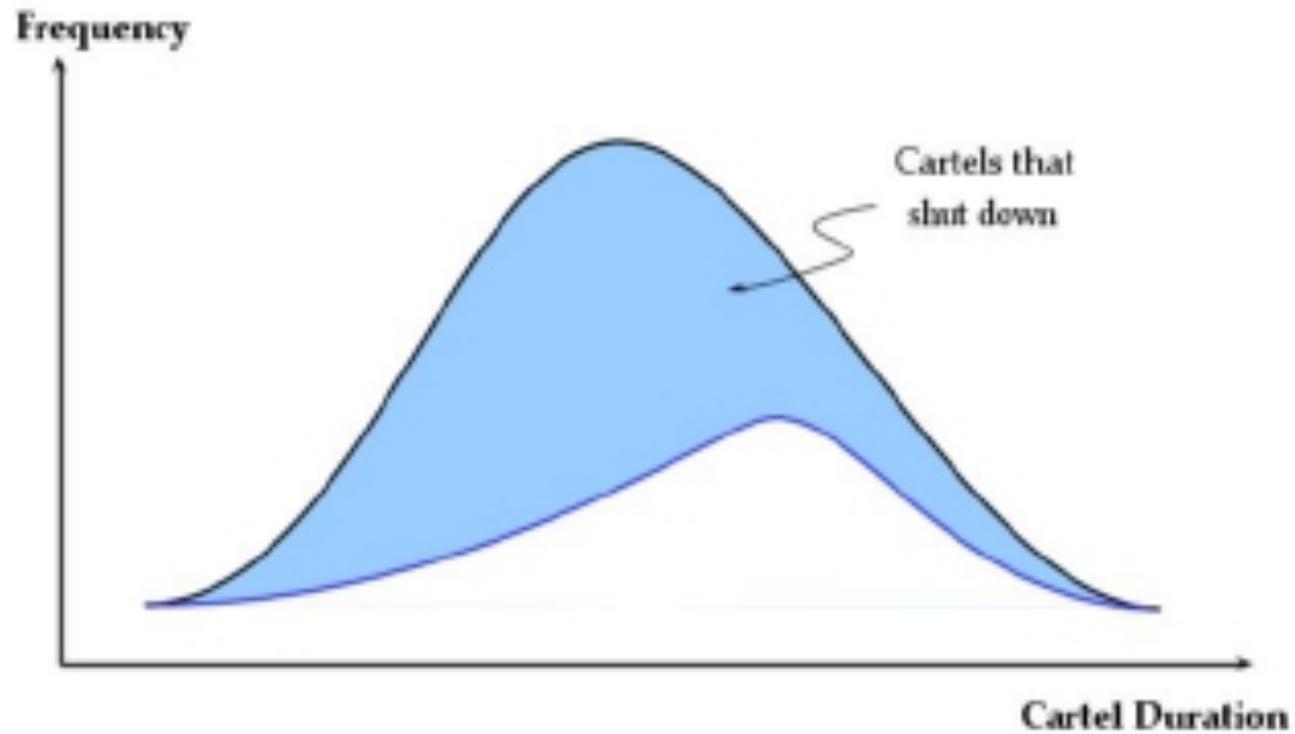
Measuring the Impact of Enforcement
Takeaways

- Open questions
  - Is the cartel rate lower now than in 1990? in 2000? in 2005?
  - Have leniency programs reduced the frequency of cartels?

- Competition authorities need to focus more on measuring impact of their policies.
  - Collecting and sharing relevant data.
  - Working with scholars.

Competition Authority Behavior

- What is the objective of a competition authority?

    - Minimize the cartel rate?
    - Minimize the impact of cartels on the economy?

- Are there inherent biases due to how performance is measured and rewards are determined?

- What are the implications for enforcement?

Competition Authority Behavior

- 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.
  - whether to evaluate policies and performance.

- These choices influence

  - desistance - shutting down cartels
  - deterrence - discouraging cartel formation

Competition Authority Behavior

- Assumption: Competition authorities maximize observable performance measures.

- Cartel rate is unobservable and thus is not a relevant performance measure.

- What do competition authorities emphasize?

Competition Authority Behavior
Measuring Performance

Thomas Barnett, Assistant Attorney General - Congressional Testimony (Sept. 25, 2007)

> "The Division set a record for the most jail time imposed (almost 30,000 jail days); obtained the second highest amount of fines in the Division's history (over $630 million); and succeeded in obtaining the longest jail sentence for a foreign national charged with an antitrust offense (14 months)."

Competition Authority Behavior
Measuring Performance

Competition: making markets work better

- In Defence of Competition Policy (October 13, 2008)

  "Enforcement may have been lacking in some financial regulators, but never in competition policy. Taking the example of cartels: eu6 billion in direct consumer benefits have been delivered in the last four years."

Competition Authority Behavior
Measuring Performance

Bundeskartellamt

open markets for competition

Effective cartel prosecution
Benefits for the economy and consumers
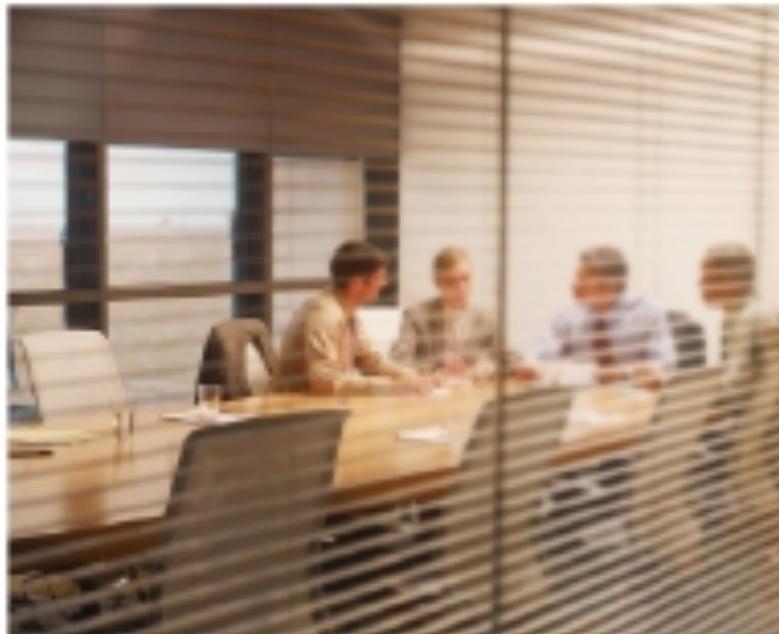
4. Number of leniency applications filed to date

The first version of the Leniency Programme was already a success. This can be seen by the number of leniency applications filed: Between 2000 and 2005 a total of 122 leniency applications were filed. Under the new Leniency Programme, a further 112 were filed in only four years (2006–2009). Thus, more than 230 leniency applications have already contributed to successfully uncover, end and punish cartel agreements.[19]

Competition Authority Behavior
Measuring Performance

- ## What is said?

  - ### Desistance

    - Number of cartel cases
    - Number of leniency applications
    - Consumer benefits from lower prices.

  - ### Penalization: corporate fines, jail time.

- ## What is not said?

  - Deterrence
  - Prevalence of cartels

- ## Possible implications are:

  - under-detection
  - under-deterrence

Under-detection

Historically, the foci of competition authorities were prosecution and desistance.

"As a general rule, the [Antitrust] Division follows leads generated by disgruntled employees, unhappy customers, or witnesses from ongoing investigations. As such, it is very much a reactive agency." (Antitrust Bulletin, 1991)

"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)

Under-detection

Biases which may lead to under-detection

- Does a CA see itself as pursuing cases reported to it, or does it perceive its role as actively discovering cartels?
- Why may there be under-detection?
  - CA may already have a lot of cases.
  - Excessive reliance on/too generous leniency programs.
  - Cases discovered by the CA may be more difficult to prosecute.
  - For international cartels, may be free-riding on detection by other CAs.

Under-detection

How e¤ective are leniency programs in detecting?

Is there over-attribution of detection to leniency programs?

- Sorbates cartel
    - Chisso received full amnesty from the EC.
    - The next day, the U.S. DOJ announced that one of the Sorbate's manufacturers pled guilty to price-fixing.

Table 2 – Proportion of US leniency success (Jul 1996 – Feb 2005)

|	No of Cases	Fines (€ million)	Proportion of Total Fines (%)
Cases Triggered By Leniency Applications	20	2,652	69.7%
But where International Cartels with prior/simultaneous U.S. policy success	14*	1,961	51.6%
EU Only Leniency Investigations	6	691	18.1%

Source: Stephan (2009)

Under-detection

How e¤ective are leniency programs in detecting?

- Antitrust Criminal Penalty Enhancement and Reform Act (ACPERA) of 2004

  - Increased corporate and individual penalties.
  - Increased leniency by reducing damages from treble to single.

- Type A leniency is available only before the DOJ has received any information about the activity being reported from any source.

- Type B leniency is available even after the DOJ has received information about the activity.

- Amnesty Plus is awarded when a firm applies for leniency while being investigated for collusion in another market.

- After ACPERA, the proportion of Type A leniency awards increased significantly.

Under-detection

How e¤ective are leniency programs in detecting?

Figure 4: The Number and Percentage of Successful Type A, Type B, and Amnesty Plus Leniency Applications in the 6 Fiscal Years Before and After ACPERA's Enactment
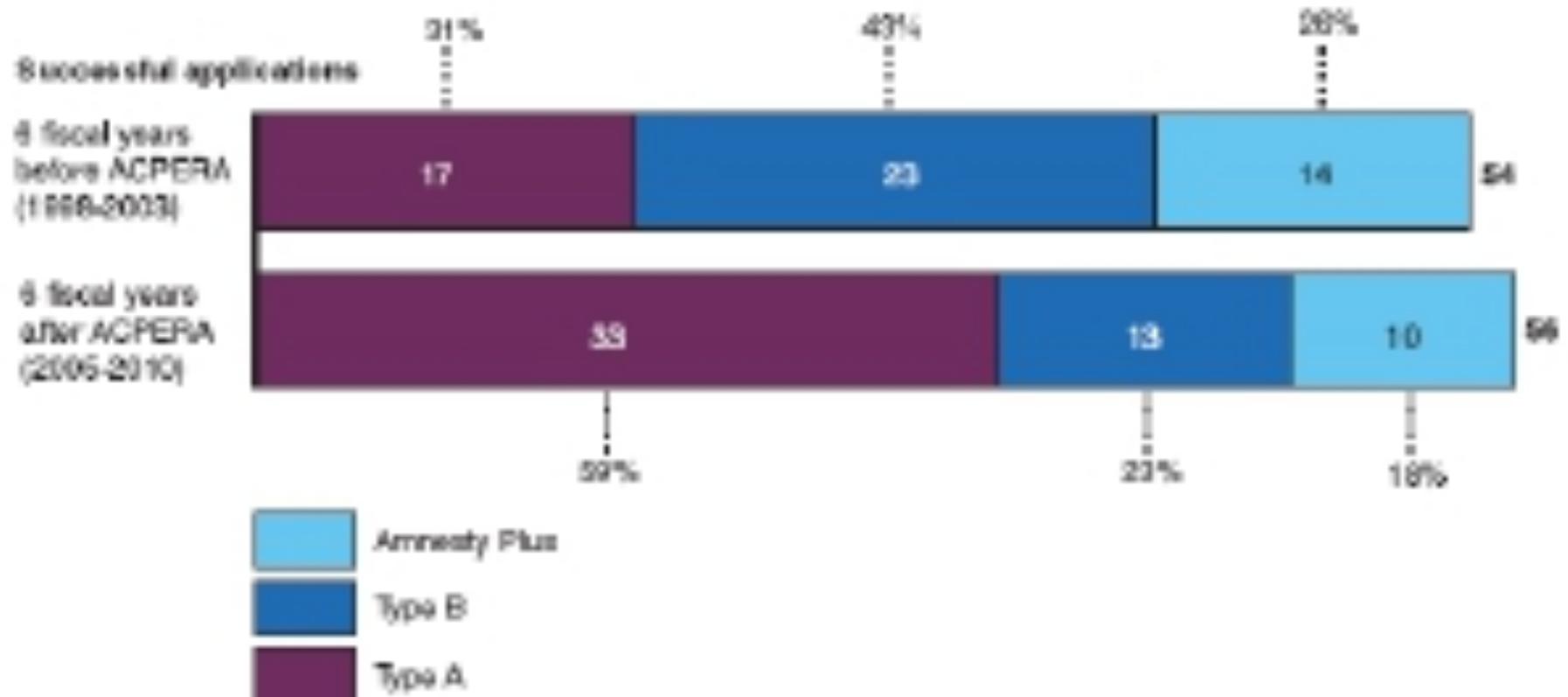
Under-deterrence

- Why might CAs not be doing all that they can to promote deterrence?

  - Desistance is observable, deterrence is not.

- How would under-deterrence manifest itself?

  - Smaller penalties closes a case but may weaken deterrence.
  - Being content with prosecuting the cases that are coming to them and not trying to increase the likelihood of a cartel being discovered.
  - Leniency programs weakening non-leniency enforcement.

Under-deterrence

Are penalties too weak?

- Vitamins case: Hoffman LaRoche

    - DOJ penalty guidelines: US$1.3 to $2.6 billion.
    - Actual fine: $500 million.

- What was behind the penalty decision?

    - Was the DOJ content to have the largest fine in history?
    - Did the DOJ inadequately value deterrence?
    - Was avoiding a court case the proper use of limited DOJ resources?

Under-deterrence

Is leniency too generous?

- Leniency should be used to increase the penalties paid by the remaining members.
- How much partial leniency is really necessary?
- Is EC giving less in terms of partial leniency?
  - 1999 - Sept 2006: 36% average leniency reduction
  - Oct 2006 - 2009: 18% average leniency reduction
- Is too much given away through plea bargaining in the U.S.?
  - Average reduction is 75%.

Under-deterrence
Pro…tability of Collusion

- Is it unprofitable to form a cartel?
  - Combe and Monnier (2009): "Fines Against Hard Core Cartels in Europe: The Myth of Over Enforcement"
  - Allain, Boyer, Kotchoni, and Ponssard (2011): "The Determination of Optimal Fines in Cartel Cases: The Myth of Underdeterrence"

- Bageri, Katsoulakos and Spagnolo (2013)

  underdeterrence much more damaging, because expected fines

  act as a distortive tax on non deterred cartels, pushing towards

  1. Underdiversification

  2. Higher prices

  3. Inter-industry differences

Incentive Challenge
Takeaways

- Competition authorities may be relying too much on leniency programs for discovering cartels

- Competition authorities may be giving too little attention to detecting cartels.

- Competition authorities may be caring about desistance too much relative to deterrence.

Policy Directions
Whistleblower Programs

- A leniency program is designed to induce people with the best information about collusion - the cartel members themselves - to report.

- Develop programs to induce other people who have information to report it to the antitrust authority.

  - Buyers
  - Employees of the colluding firms not involved in the conspiracy
  - Competing firms who are not members of the cartel

Policy Directions
Whistleblower Programs

Industrial buyers may become suspicious because

- prices are steadily rising and cost/demand factors cannot explain the price increases.
- some suppliers are no longer willing to bid for business (as part of a customer allocation scheme).
- price changes are much more coordinated; now, firms change their prices within a few days of each other.

Policy Directions
Whistleblower Programs

- Fine arts auctions cartel (EC decision)

  Sotheby's submits that some of its personnel commented that they had a "feeling" that the introduction of the fixed vendor's commission structure may have arisen out of some sort of understanding with Christie's. Such suspicions were supported by the fact that London had given strict instructions not to depart from the published commission structure and to monitor and report to senior management any discounts offered by Christie's in contravention of its published rates.

Policy Directions
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
Whistleblower Programs

- Korea Fair Trade Commission

  - 2005 - launched program
  - Whistleblower received a reward of almost e50,000 for information about a cartel among welding rod makers.

- UK's Office of Fair Trading

  - 2008 - rewards of up to £ 100,000.

- Creating a U.S. False Claims Act for Section 1 violations?

  - A non-government employee can file actions for fraud against federal government contractors.
  - Whistleblower is entitled to 15-25% of government's total recovery.

Policy Directions
Whistleblower Programs

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

   DOJ Antitrust Division officials acknowledge that a whistleblower reward could increase the number of whistleblowers reporting criminal cartel activity to DOJ and, therefore, 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.
   - Enhances an employee's incentive to report.
   - If it induces a leniency application then whistleblower's credibility is substantiated.

Policy Directions
Screening

- Screening is the use of market data to identify markets where collusion is suspected.

- Purpose of screening is not to deliver evidence to convict colluders, but rather to

  - identify markets worthy of investigation
  - induce cartel members to come forward under a leniency program
  - deter cartels from forming.

Policy Directions
Screening

- Why engage in screening when there is a leniency program?

    - Leniency programs may be ineffective iff firms are not concerned about being caught.
    - Screening can create those concerns.
    - Identifying an industry for investigation could induce a race among cartel members to apply for leniency.

- Leniency programs and screening are complements (are they??)

    - Screening enhances 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.

- But screening may be more costly than increasing sanctions!

Policy Directions
Screening

- Recommendation: Screen government procurement contracts.

- Public procurement auctions encompass 45-65% of government expenditure and 15-20% of GDP.

- Bidding rings are common at procurement auctions.

- Data is available in most countries (not Sweden).

- Foundation of solid empirical analysis on collusion in procurement auctions

- Potentially large reputation effect.

Policy Directions
Measurement of Cartel and Enforcement Activity

What is it that we can measure? What data should be collected?

- Characteristics of discovered cartels
    - Number of discovered cartels
    - Cartel duration
    - Manner in which cartel was discovered
        - Leniency program
        - Customer complaint
        - Competitor
        - Whistleblower
        - Other investigation (merger, private suit, etc.)

Policy Directions

Measurement of Cartel and Enforcement Activity

- Leniency applications

    - Number of leniency applicants
    - Reasons for applying (what induced them to come forward?)

        - Fear of being caught by the competition authority?
        - Fear of pre-emption by another cartel member?
        - Change in management?
        - No longer colluding?

- Price response

    - Comparison of pre-cartel and cartel price
    - Comparison of cartel and post-cartel price
    - Is price falling after discovery? conviction?

Summary

- Measurement challenge

  - Need to measure the impact of policy on the cartel rate.
  - Competition authorities should be more concerned with policy evaluation.

- Incentive challenge

  - Under-detection
  - Under-deterrence

- Possible policy directions

  - Whistleblower programs
  - Screening markets for cartels
  - Data collection and analysis