

# Collusion - The Hidden Evil in the Marketplace Are We Winning or Losing the Fight Against Cartels?

Joe Harrington (U. of Pennsylvania - Wharton)

Frontiers Lecture - Middlesex University

May 29, 2015

# Introduction

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- Mario Monti, former European Commissioner for Competition (2000): *“Cartels are cancers on the open market economy.”*
- U.S. Supreme Court Justice Antonin Scalia (2004): *“the supreme evil of antitrust.”*

# Introduction

Ministério da Justiça SDE

**Nationwide marketing campaigns**  
**(airports, weekly magazines & postal cards)**

*“Companies that participate in cartel get dirty”*

Left poster text: NÃO SEI O NOME DA SUA EMPRESA. CARTEL É CRIME.

Right poster text: EMPRESA QUE FAZ CARTEL ACABA DE SUJAR O.

# Introduction

In recent years, cartels have involved some of the largest markets and some of the most well-known companies in the world.

- Sample of companies
  - Apple, Christie's, British Airways, Samsung, Barclays, Akzo Nobel, Hoffman LaRoche, DuPont, Siemens
- Sample of markets
  - vitamins (global), auto parts (global), foreign exchange (global), elevators (EU), bread (South Africa), eBooks (US), cement (Germany), processed chicken (Chile)

# Introduction

10. AGOSTO 2013 | DOMINGO 10 DE OCTUBRE DE 2013

ECONOMÍA Y NEGOCIOS | DOMINGO | B 19

JOSEPH HARRINGTON, ACADÉMICO DE LA UNIVERSIDAD DE WHARTON:

## ¿Cárcel para los cárteles? Responde experto que hizo estudio sobre caso pollos

La Fiscalía Nacional Económica acusa a Agropurser, Ariztía y Don Pollo de repartirse el mercado y controlar la producción y obteniendo beneficios económicos por esta práctica. En un ensayo, Harrington diseña la tesis de la autoridad y argumenta que no había información suficiente entre las empresas para que el cartel funcionara. **» SÍGUELE SIGUIENDO**

**J**oseph Harrington es doctor en economía y académico de la prestigiosa universidad de Wharton, en Pensilvania. Para su tesis de la tesis defendió en el 2004 en un experimento en el área de cárteles y cárteles, donde se usó un mecanismo inventado que ha resultado la teoría en el mundo real. Sus estudios se centraron en Chile, España, Ecuador y EE.UU., entre otros lugares.

El experto vivió como parte integrante de un grupo de cárteles en un experimento de Chile 2003, organizado por la Facultad de Economía y Negocios de la Universidad de Wharton.

“Vista de mercado a mercado. Y eso es muy importante. Hay que tener un mercado particular en términos de qué tipo de información está disponible. Es el mercado del pollo, por ejemplo, donde las compañías pueden o no saber precios”, dijo en un momento de la entrevista. “En un momento, los cárteles no se ven fácilmente con las personas que los hacen, porque pueden hacer cosas buenas y más complejas”, dijo en un momento de la entrevista. “En un momento, los cárteles no se ven fácilmente con las personas que los hacen, porque pueden hacer cosas buenas y más complejas”, dijo en un momento de la entrevista.

**Evidencia económica y no económica de un cartel**

En general, los cárteles económicos son más fáciles de detectar que los cárteles económicos. En un momento de la entrevista, Harrington dijo que los cárteles económicos son más fáciles de detectar que los cárteles económicos. En un momento de la entrevista, Harrington dijo que los cárteles económicos son más fáciles de detectar que los cárteles económicos.

El experimento muestra evidencia de la forma de cómo se comportan las compañías en cárteles. “En el momento de la entrevista, Harrington dijo que los cárteles económicos son más fáciles de detectar que los cárteles económicos. En un momento de la entrevista, Harrington dijo que los cárteles económicos son más fáciles de detectar que los cárteles económicos.”

Después de haber participado en el estudio de cárteles, Harrington dijo que los cárteles económicos son más fáciles de detectar que los cárteles económicos. En un momento de la entrevista, Harrington dijo que los cárteles económicos son más fáciles de detectar que los cárteles económicos.

**“LOS DATOS disponibles no eran consistentes con el buen funcionamiento del cartel”, dice el experto sobre el caso pollos.**

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“Jail for Cartels? Answers from the Expert Who Studied the Chicken Cartel”  
El Mercurio (Santiago, Chile), October 6, 2013

# Introduction

## Overview

- 1 How do cartels work? What have we recently learned about how cartels work?



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## Overview

- 1 How do cartels work? What have we recently learned about how cartels work?
- 2 What is being done to shut down cartels and deter them from forming?
- 3 Are we winning the fight against cartels?

# How Do Cartels Work?

- Why do firms collude?
- Competition drives price down to a level such that
  - all firms could raise their profit if they were to coordinate a price increase.
  - but any individual firm would reduce its profit if it were to be the only one to raise price.
- How do firms collude?

# How Do Cartels Work?

## Challenges of a successful cartel

- 1 Coordinate on a collusive agreement
  - Communication
  - Bargaining
- 2 Sustain a collusive agreement
  - Monitoring for compliance
  - Punishing for non-compliance
  - Controlling the expansion of non-cartel supply
- 3 Elude detection by customers and the competition authority

# How Do Cartels Work?

How do firms coordinate?

- *United States v. American Airlines*, (5th Circuit Court, 1984)
- Feb 1982: Transcript of phone call between Robert Crandall (CEO, American Airlines) and Howard Putnam (CEO, Braniff Airlines)



# How Do Cartels Work?

How do firms coordinate?

- **Crandall:** I think it's dumb as hell for Christ's sake, all right, to sit here and pound the \*\*\*\* out of each other and neither one of us making a \*\*\*\*ing dime.

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- **Crandall:** Oh bull \*\*\*\*, Howard. We can talk about any goddamn thing we want to talk about.

# How Do Cartels Work?

How do firms coordinate?

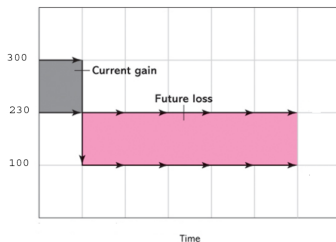
Cartel among 20-25 gasoline stations in towns in Quebec, Canada (2005-06)

- Cartel leader contacts and negotiates with a subset of firms.
- Once a price is agreed upon, the cartel leader communicates with the low-cost stations, who may negotiate a smaller price rise.
- Communications go on for 1-2 hours prior to price being increased.
- Agreement on a price increase required 65 phone calls (on average)

# How Do Cartels Work?

How do firms sustain collusion?

- How do firms structure a sustainable collusive agreement? What deters firms from cheating?



- Monitoring for compliance with the collusive agreement
- Punishing in the event of evidence of non-compliance

# How Do Cartels Work?

How do firms sustain collusion?

## Traditional understanding of cartels

- Coordinate on prices
- Monitor firms' prices for compliance
- Punishment has all firms reduce prices
  - Temporary or permanent return to competitive pricing
  - Price war - temporary implementation of prices below competitive level (perhaps even below cost)

# How Do Cartels Work?

How do firms sustain collusion?

**Property 1: In many cartels, monitoring is in terms of sales, not prices.**

- Common properties of many recent cartels in intermediate goods markets
  - Price is not public information.
  - Collusive agreement is a market allocation in terms of, for example, sales quotas.
  - Monitoring involves comparing sales to the agreed-upon quotas.

# How Do Cartels Work?

How do firms sustain collusion?

Lysine Cartel: Annual Market Allocation (tons)

Company	Global	Europe
Ajinomoto	73,500	34,000
Archer Daniel Midlands	48,000	5,000
Kyowa	37,000	8,000
Sewon	20,500	13,500
Cheil	6,000	5,000

- Each company telephoned or mailed their sales volumes to Kanji Mimoto of Ajinomoto.
- Mimoto prepared a spreadsheet that was distributed at the quarterly maintenance meetings.

# How Do Cartels Work?

How do firms sustain collusion?

**Property 2: In many cartels, punishments are not symmetric price wars.**

- Asymmetric punishments include
  - transfers such as through inter-firm sales
    - Lysine: guaranteed buy-ins
    - Citric acid: buy-backs
  - focused price war on a deviator's customers
- Why are punishments asymmetric?
  - Firms prefer to shift profit around amongst themselves than to convert it into higher welfare for consumers
  - Symmetric punishments are far less effective when monitoring is in terms of sales.



# How Do Cartels Work?

How do firms sustain collusion?

Harrington and Skrzypacz (*RAND Journal of Economics*, 2007)

- Model
  - Firms simultaneously choose prices
  - Each firm's price is private information
  - Firm's demand depends stochastically on all firms' prices
  - Firms' sales are publicly revealed
- Inference problem: If a firm has low sales, is it due to a bad firm demand shock or to a rival undercutting the collusive price?
- **Result:** When market demand is highly price-inelastic, almost no collusion is sustainable with symmetric punishments.

# How Do Firms Collude?

How do firms sustain collusion?

- Consider two firms in which there is a symmetric punishment ("price war") if either firm has a market share above  $\hat{s}$ .
- If firm 1 undercuts the collusive price,
  - it *increases* the probability that firm 1's market share exceeds  $\hat{s}$  which makes a price war *more* likely.
  - it *decreases* the probability that firm 2's market share exceeds  $\hat{s}$  which makes a price war *less* likely.
- These offsetting effects cancel each other out so a firm's price does not affect the probability of a price war.
- A firm then cheats as there is no future profit loss  $\Rightarrow$  all collusive agreements are unstable.

# How Do Cartels Work?

How do firms sustain collusion?

Two-tier asymmetric punishment will sustain collusion.

- Penalties for overproduction support higher prices.
  - A firm makes a payment of  $x$  to its rivals for each unit it sells.
  - Collusive price is the competitive price when "marginal cost" is  $MC + x$ .
  - Transfers can be consummated through inter-firm sales.
- Threat of collapse of collusion ("price war") support the making of transfers.
  - If firms do not honor the compensation scheme then collusion collapses.
  - Firms then find it optimal to make these transfers.

# How Do Cartels Work?

How do firms sustain collusion?

**Challenge:** In practice, monitoring was in terms of *self-reported* sales which, generally, were not verifiable.

Harrington and Skrzypacz (*American Economic Review*, 2011)

Model

- Firm chooses its price (private information)
- Firm learns its sales (private information)
- Firm submits sales report (cheap talk)
- Firm makes transfers (based on sales reports)

# How Do Cartels Work?

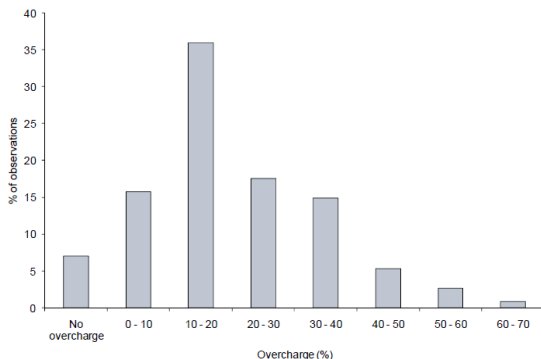
How do firms sustain collusion?

- Stability requires that firms find it optimal to
  - ① set the collusive price
  - ② truthfully report sales (binding constraint)
  - ③ make transfers
- How is a firm induced to truthfully report high sales?
  - Price war is more likely when the aggregate sales report is lower.
  - A firm that reports lower sales makes a lower transfer but then it enhances the likelihood of a price war.
- Collusion is stable when market demand is not too volatile.

# How Do Cartels Work?

## Impact of cartels

- How much do cartels raise price?
- Overcharge = percentage increase in price due to collusion

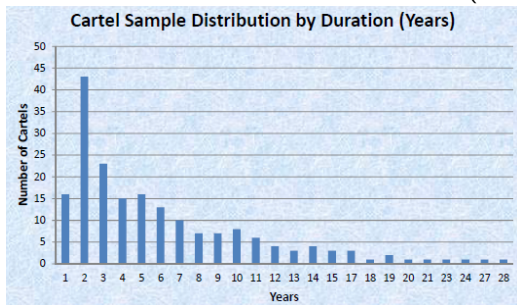


# How Do Cartels Work?

## Impact of cartels

- How long do cartels last?
- Average duration of *discovered* cartels is 5-8 years (depending on the data set)

U.S. Department of Justice, Antitrust Division (1961 - 2012)



# How Do Cartels Work?

## Impact of cartels

How much are consumers worse off? Example: Vitamins Cartel

Table 6A. Real Global Overcharges by the Vitamins Cartels, 1990-1999					
Product	United States <sup>a</sup>	Canada <sup>b</sup>	Western Europe <sup>c</sup>	Other <sup>d</sup>	World <sup>f</sup>
	<i>2005 U.S. dollars</i>				
Beta carotene	138.4083	9.919262	193.4066	82.16095	423.8951
Canthaxanthin	25.95156	1.730104	104.3956	274.6201	406.6974
Biotin (H)	30.37667	2.18712	21.36259	44.99704	98.92342
Choline chloride (B4)	191.9806	16.4034	159.3533	267.614	635.3513
Folic acid (B9)	3.159174	0.607533	8.891455	2.131439	14.7896
Vitamin A	319.9052	24.05213	417.0354	245.9954	1006.988
Vitamin B1	11.05711	1.579587	7.621247	14.20959	34.46753
Vitamin B2	38.23884	3.015682	55.74516	28.10304	125.1027
Vitamin B3	49.40758	2.725118	43.14159	45.76659	141.0409
Vitamin B5	67.53555	5.094787	101.7699	29.74828	204.1485
Vitamin B6	15.79587	4.374241	25.40416	39.07638	84.65064
Vitamin B12	60.75334	1.579587	54.27252	110.1243	226.7298
Vitamin C	294.0462	20.65614	266.7436	435.7608	1017.207
Vitamin D3	11.188	0.807382	9.78022	10.80473	32.58033
Vitamin E	760.6635	54.50237	795.354	385.5835	1996.103
Premixes	713.2701	47.39336	856.1947	813.5011	2430.359
Total 16 products	2731.738	196.6278	3120.472	2830.197	<b>8879.035</b>



# What is Being Done to Fight Cartels?



# What is Being Done to Fight Cartels?

- What do we need to do to defeat collusion?
  - Disable active cartels
  - Deter prospective cartels
- Stages of enforcement
  - Discovery
  - Prosecution
  - Penalization

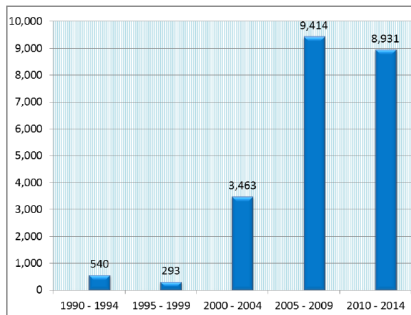
# What is Being Done to Fight Cartels?

## Corporate Penalties: Fines

- 2006 revision of European Commission guidelines for corporate fines
- Basic Amount =  $S \times a \times T + S \times b$ 
  - $S$  = value of the firm's sales in the last full business year of the firm's participation in the cartel
  - $a$  = percentage of the values of sales up to 30 percent ("gravity")
  - $T$  = number of year's of a firm's participation
  - $S \times b$  = fixed portion where  $b$  is 15-25 percent

# What is Being Done to Fight Cartels?

## Corporate Penalties: Fines



Maximum fine for a cartel: 1.47 billion € (TV and computer monitor tubes)

Maximum fine for a firm: 715 million € (Saint Gobain - Car glass)

# What is Being Done to Fight Cartels?

## Corporate Penalties: Damages

### Customer damages serve to

- compensate harmed consumers.
- deter and disable cartels by
  - linking penalties to profit
  - creating incentives for customers to monitor

### CARTEL DAMAGE CLAIMS - CDC -

THE EUROPEAN BRAND FOR PRIVATE ANTITRUST ENFORCEMENT

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#### German Cement

CDC affiliate **CDC Cartel Damage Claims SA** - 'CDC SA' is active in the German and European cement cartel. It currently enforces antitrust damage claims purchased from victims of the German Cement Cartel.

#### Background and facts

In the spring of 2002, the German Federal Cartel Office (FCO) uncovered a hardcore-cartel in the cement sector. According to the FCO, numerous cement producers had divided the **German cement market** between them, agreed on sales quotas, and fixed prices since the **beginning of the 1990s** at the latest.

# What is Being Done to Fight Cartels?

## Corporate Penalties: Damages

Damages inflicted by firm  $i$  from colluding in period  $t$  are usually calculated to be

$$\left( P_i^c(t) - P_i^{bf}(t) \right) Q_i^c(t)$$

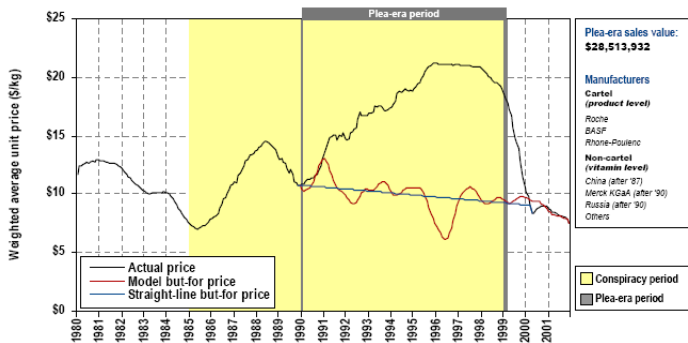
- $P_i^c(t)$  is the observed (collusive) price charged by firm  $i$  in period  $t$ .
- $Q_i^c(t)$  is the number of units sold by firm  $i$  in period  $t$
- $P_i^{bf}(t)$  is the "but for" (or counterfactual) price for firm  $i$  in period  $t$

# What is Being Done to Fight Cartels?

## Corporate Penalties: Damages

### Vitamins (Bernheim, 2002)

Figure 12-1: Vitamin E Acetate 50% Spray-Dried Feed Grade price and but-for price

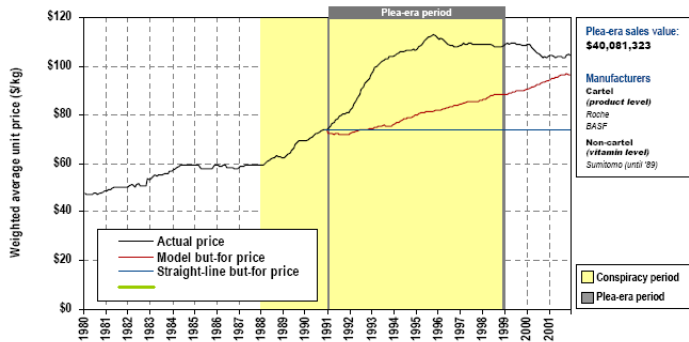


# What is Being Done to Fight Cartels?

## Corporate Penalties: Damages

### Vitamins (Bernheim, 2002)

Figure 12-18: Beta Carotene 10% Cold Water Soluble USP price and but-for price





# What is Being Done to Fight Cartels?

## Individual Penalties

### Gallery of Price Fixers



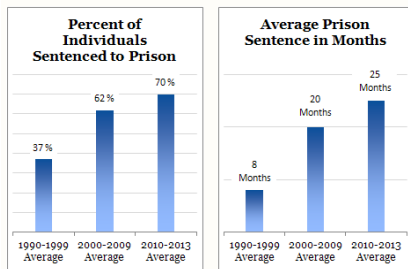
- Penalties: Government fines, Debarment/Unemployment, Incarceration

# What is Being Done to Fight Cartels?

## Individual Penalties

- 11 countries with incarceration as a penalty but only routinely used in the U.S.
- U.S. (2004): maximum jail sentence raised from 3 to 10 years

U.S. Department of Justice, Antitrust Division



# What is Being Done to Fight Cartels?

## Individual Penalties

### The Telegraph

Home Video News World Sport **Finance** Comment Culture  
 Budget Companies Comment Personal Finance ISAs Economy  
 Shares Questor Market Report FTSE 100 Currency Commodity

HOME » FINANCE » MARKETS

## Three jailed for 40-year price-rigging cartel

     Email

By Helen Power

12:01AM BST 12 Jun 2008

 Comment

Three British executives were jailed yesterday for a total of eight-and-a-half years for price-rigging after a landmark deal with the US Department of Justice enabled them to escape jail time in the United States.

The three, who worked for Dunlop Oil and Marine, ran a 40-year cartel that defrauded the Ministry of Defence and the US government out of up to £75m a year on specialist marine hose orders.

# What is Being Done to Fight Cartels?

## Leniency Programs

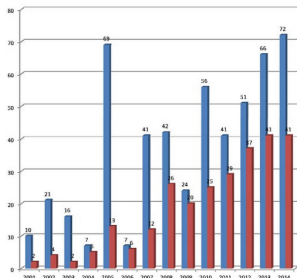
- A *leniency program* offers reduced penalties to corporations and/or individuals involved in a cartel, in exchange for cooperating with enforcement authorities.
- U.K. Leniency Program
  - Before an investigation
    - First firm to come forward: 100% reduction in penalties
    - Later firms: 0-50% reduction in penalties
  - After an investigation
    - First firm to come forward: 0-100% reduction in penalties
    - Later firms: 0-50% reduction in penalties
- Currently, more than 50 countries and unions have leniency programs

# What is Being Done to Fight Cartels?

## Leniency Programs

### Bundeskartellamt (German competition authority)

- Red: Number of cases in which leniency applications were filed
- Blue: Number of leniency applications filed



Bundeskartellamt (2010): *"The first version of the Leniency Programme was already a success. This can be seen by the number of leniency applications filed."*

# What is Being Done to Fight Cartels?

## Leniency Programs

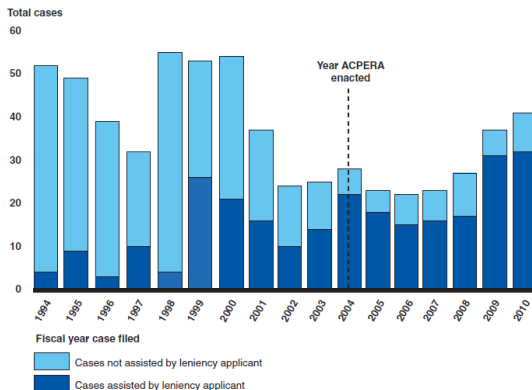
*U.S. Senator Bill Blumenthal: "My concern is that most of the cases that are brought today are ... generated exclusively from firms that decided to come forward and seek a leniency application . . . . I'm worried that the success of the leniency program combined with budget constraints that your Division faces will, in effect, give you incentives to pursue only the companies that come forward . . . [A]s I know from personal experience, some of the most egregious and harmful of the cartels may have nobody coming forward."*

*- U.S. Senate Hearing on "Cartel Prosecution: Stopping Price Fixers and Protecting Consumers" Subcommittee on Antitrust, Competition Policy and Consumer Rights, November 14, 2013*

# What is Being Done to Fight Cartels?

## Leniency Programs

**Figure 8: Number of Criminal Cartel Cases Filed Each Fiscal Year, Broken Out by Those Assisted and Not Assisted by a Leniency Applicant**



Source: GAO analysis of Antitrust Division data.

# What is Being Done to Fight Cartels?

## Leniency Programs

*Is it possible that a leniency program could raise the cartel rate?*

Harrington and Chang (*Journal of Law and Economics*, forthcoming)

Theoretical model of cartel birth, death, and discovery.

- Leniency program can cause fewer cartels to be shut down
  - Leniency program is generally used by dying cartels.
  - Focusing resources on cartels with a leniency applicant means focusing on cartels that have already collapsed.
  - Active cartels are less likely to be caught because non-lenieny enforcement is weaker.



# What is Being Done to Fight Cartels?

## Leniency Programs

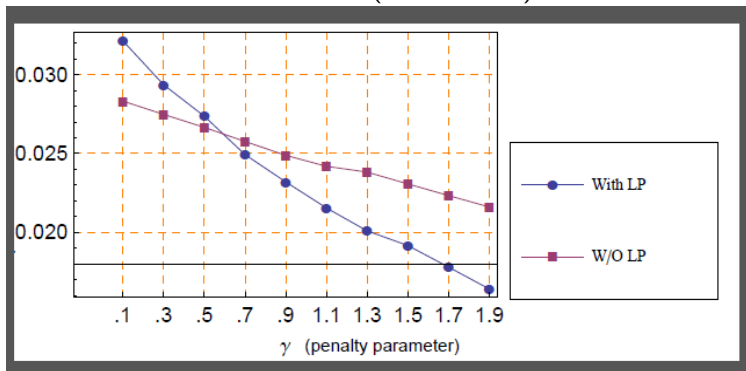
*Is it possible that a leniency program could raise the cartel rate?*

- Leniency program deters more cartels from forming
  - Leniency program ensures that dying cartels pay penalties (other than the firm that receives leniency).
- If penalties are low then the rise in deterrence is small relative to the fall in the shutdown rate  $\Rightarrow$  rise in cartel rate

# What is Being Done to Fight Cartels?

## Leniency Programs

Cartel Rate (Simulations)

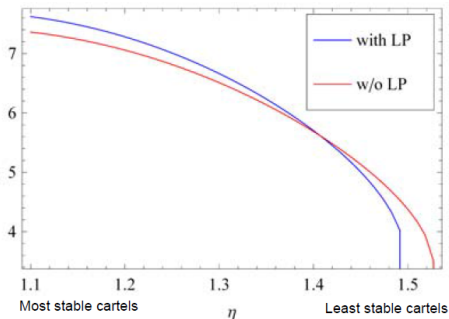


# What is Being Done to Fight Cartels?

## Leniency Programs

- Leniency program can result in fewer but longer-lived cartels

### Cartel Duration Depending on Cartel Type (Simulations)



- Policy recommendations: When instituting a leniency program, expand resources and set high penalties.

# What is Being Done to Fight Cartels?

## Screening

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

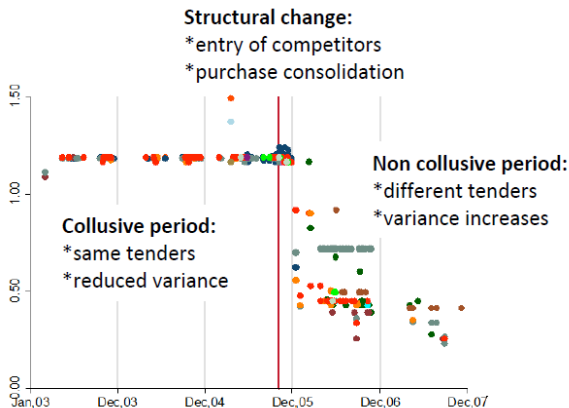
- Screen price and sales data for
  - a sudden change ("structural break") that could be due to cartel birth or death
  - patterns more consistent with collusion than competition
- Screening has been performed with some success in Brazil, Mexico, The Netherlands, South Africa.
- Deutsche Bahn has a cartel detection team comprising lawyers and economists.

# What is Being Done to Fight Cartels?

## Screening

### Mexico: Government procurement auctions for generic drugs

Figure 1. Medicine 1 average price 1



# What is Being Done to Fight Cartels?

## Screening

### U.S.: Frozen perch

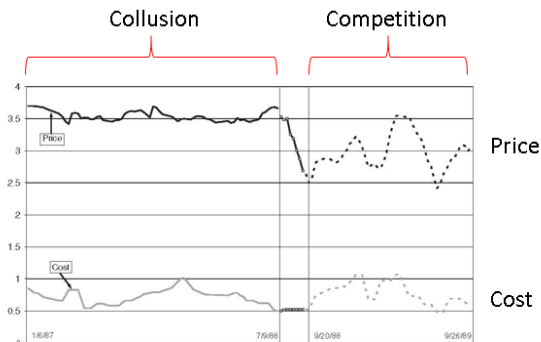


Fig. 1. Frozen perch prices and costs: 1/6/87-9/26/89.

# What is Being Done to Fight Cartels?

## Screening

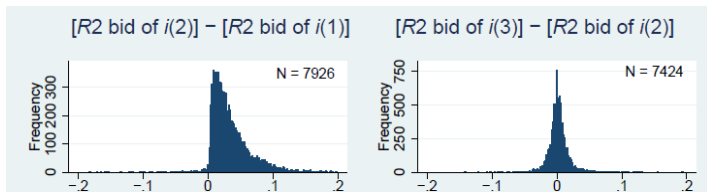
### Kawai and Nakabayashi (Working Paper, 2014)

- Japanese procurement auctions for construction projects (2003-06) - \$14 billion/year (3% of GDP)
- First-price sealed bid auction in which the lowest bid wins the project
- If the lowest bid  $>$  secret reserve price then there is a second auction (30 minutes after the first auction)
- Consider those auctions which went to a second round and the difference between the lowest and next-lowest bids is very small
  - Under competition, each bidder should have similar probabilities of winning in the second round
  - In practice, the lowest bidder from the first round won 97% of second-round auctions

# What is Being Done to Fight Cartels?

## Screening

- Difference in the 2nd round bids of the third lowest and second lowest bidders from the 1st round is symmetric around zero.
- Difference in the 2nd round bids of the lowest and second lowest bidders from the first round is almost always positive.



- Pattern is consistent with a scheme in which there was a bidding ring which designated a particular company to submit the lowest bid in both rounds.



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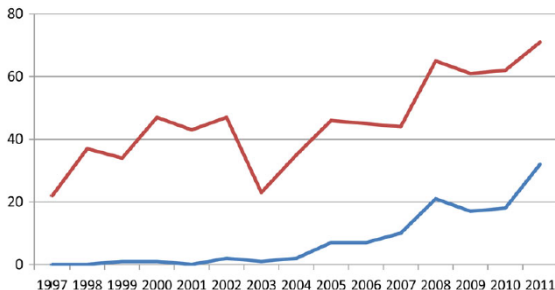
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- **But are there fewer cartels?**

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## Republic of Korea

- Red line: Number of convicted cartels
- Blue line: Number of convicted cartels with a firm awarded leniency



- *What are we to infer?*



# Are We Winning the Fight Against Cartels?

- Primary goal of competition policy is to **deter cartel formation**, not shut down cartels.
- Measurement Challenge: Cartel rate is not observed.
  - Only discovered cartels are observed. How many undiscovered cartels are out there?
  - How do we measure a change in the latent cartel rate?
  - How do we measure the impact of enforcement policies on the cartel rate?

# Are We Winning the Fight Against Cartels?

- Are the properties of discovered cartels changing in a manner consistent with a less hospitable environment for cartels?
  - Is the duration of discovered cartels shorter after introducing leniency programs?
- Is collusion less profitable?
  - Penalties are definitely higher.
  - Estimated annual probability of discovery is around 15% but is probably a biased estimate. Has it risen with the increase in enforcement?
- Is collusion generally unprofitable?
  - Are cartels involving fewer senior managers?
  - Is senior management actively trying to discourage employees from colluding?
  - Are employees involved in cartels being dismissed?

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Is collusion generally unprofitable?

Table 12A. Real Global Sanctions Relative to Real Overcharges, 1999-2005

Product Market	United States			Other Jurisdiction			World <sup>a</sup>
	Govt.	Private	Total <sup>a</sup>	Canada <sup>b</sup>	EU	Other	
	<i>Percent of 2005 U.S. dollars</i>						
Beta carotene	37.9	85.9	123.8	82.3	27.2	0	54.7
Canthaxanthin	4.3	10.1	14.4	9.8	48.9	0	13.5
Biotin (vitamin H)	0	138.8	138.7	0	0	0	42.6
Choline chloride	1.3	22.4	23.6	27.9	22.2	0	13.4
Folic Acid (B9)	0	208.5	208.5	0	0	0	44.5
Vitamin A	23.4	72.8	96.2	69.6	16.5	1.9	39.5
Vitamin B1	0	131.0	131.0	0	0	0	42.0
Vitamin B2	51.0	99.4	150.3	90.0	59.1	0	74.4
Vitamin B3	46.3	62.2	108.5	86.7	0	0	39.7
Vitamin B5	30.9	75.4	106.3	89.4	57.4	0.3	66.1
Vitamin B6	0	84.8	84.8	0	0	0	15.8
Vitamin B12	0	5.1	5.6	202.4	0	0	2.7
Vitamin C	38.1	74.4	112.4	87.6	19.1	0.8	39.7
Vitamin D3	0	0	0	0	252.4	0	75.8
Vitamin E	26.6	67.0	93.6	59.5	13.4	1.2	42.8
Premixes	23.6	48.9	72.5	110.9	0	0	23.4
<b>Total</b>	<b>24.8</b>	<b>61.3</b>	<b>86.0</b>	<b>74.0</b>	<b>15.4</b>	<b>0.5</b>	<b>33.7</b>

Sources: Tables 14A and 17A

## Are We Winning the Fight Against Cartels?

Are companies taking measures to discourage their managers from participating in a cartel?

- Many cartels *involved* senior management

Level	Frequency
Leader (e.g., CEO)	46.6%
Senior managers (e.g., Vice-President)	29.3%
Senior middle managers	6.9%
Middle managers	3.4%
Junior marketing & sales	13.8%

Data: 74 international cartels, European Commission, 1990-2009 (Ashton and Pressley, 2012)

# Are We Winning the Fight Against Cartels?



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[FT Home](#) > [Companies](#) > [By region](#) > [UK](#)

Front page

World

▼ Companies

Energy

Industrials

Transport

Retail & Consumer

Health

Technology

Media

Telecoms

Financials

▼ By region

## 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.

# Are We Winning the Fight Against Cartels?

- In the U.S. and EU, new cartel cases are initiated every week.
- We have clearly not won the war against cartels.
- Even if we think we're winning, watch out for cartels to respond to in clever ways.

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- Collusion without express communication!

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'Ian ... This is a great initiative that you and Neil have instigated!!!!!!!!!!!! However, a word to the wise, never ever put anything in writing, its highly illegal and it could bite you right in the arse!!!! suggest you phone Lesley and tell her to trash? Talk to Dave. Mike'





# Collusion - The Hidden Evil in the Marketplace

