



International MBA

Economic Policy and Economic Integration

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Class 3

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CLASS objectives

Defining

- How firms might reduce competition by using cooperative agreements
- What the European Commission might do to deal with this issue

Market configurations

- Competition: buyers and sellers are numerous enough that their choice do not impact on the market equilibrium.
- Monopoly: 1 seller, many buyers
- Monopsony: 1 buyer, many sellers
- Oligopoly: Small number of sellers, many buyers
- Duopoly: 2 sellers, many buyers

Companies might want to develop strategies in order to increase market barriers and hence reduce competition.

- Trade barriers
- Typically, such strategies are non-cooperative



Cooperative Strategies: Collusion

Competition is a problem for firms

- Aggressive behaviours to destroy competition – non cooperative strategies
 - Look forward to eliminating competitors
 - Price wars – increased social welfare
 - Look forward to avoid market entry by potential competitors.
 - Competition is decreased – Prices increase – Social surplus is decreased
- Collusion – cooperative strategy
 - «Colluding is the fact to agree (usually secretly) in order to hurt somebody else»
 - In the study of economics and market competition, collusion takes place within an industry when rival companies cooperate for their mutual benefit.
 - Example (OPEC – 13 countries deciding of oil production)
 - Collusion might take several forms
 - Public contracts: ex ante share of the markets; coverage offer
 - Non aggression pact
 - Quotas
 - Tacit vs. Explicit



Collusion

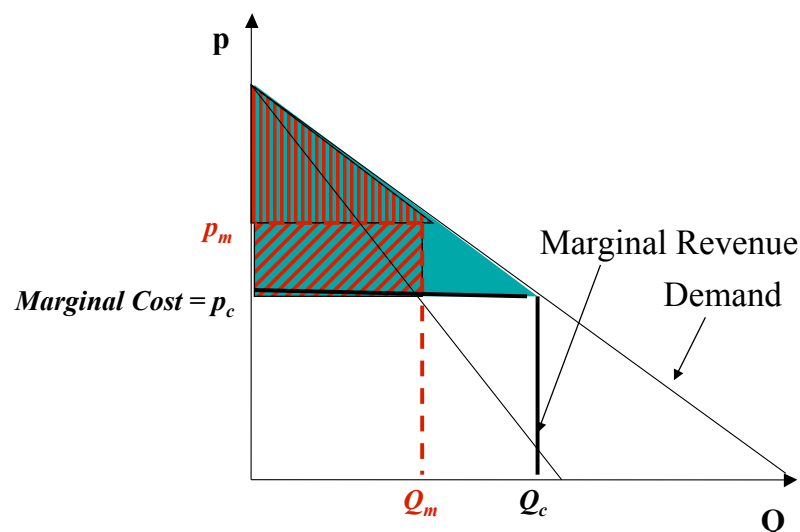
- «We rarely see people from a profession to meet, even for fun. Yet they are still plotting against the public good or raise prices. The law can not prevent these conspiracies without freedom at risk. At most it can avoid them and try to discourage». SMITH 1776
 - Sherman Act strictly forbid such agreements in the US (1890)
 - Article 85 of the Treaty of Rome (1957) makes it illegal for companies to enter into agreements that restrict or distort competition with the European Union, that is, by means of price fixing or agreements over market share.

WHY ?



Collusion and social surplus: an impact similar to monopoly

- Graphically:



Should we care about collusive behaviour?

Is this a credible strategy for firms?

- Cartel: Each firm reduces its production in order to increase prices.
 - But each firm has an interest to cheat (“free riding”) and to let partners pay the cost of collusion (reduction of production) while benefiting of high prices on the market.
- How such agreements are to be respected? Furthermore, such agreements are prohibited and then there is a cost of being detected by antitrust institutions



Should we care about collusion strategy? An economic analysis

- **Static approach and stability of collusive behaviour.**
 - Collusive strategy leads partners into a prisoner dilemma (Nash 1950).

–Such strategy should never emerge!

		Company 1	
		C	NPC
Company 2	C	(10, 10)	(19, -1)
	NPC	(-1, 19)	(0, 0)

The case of two firms splitting the market in order to share a monopoly surplus of 20.

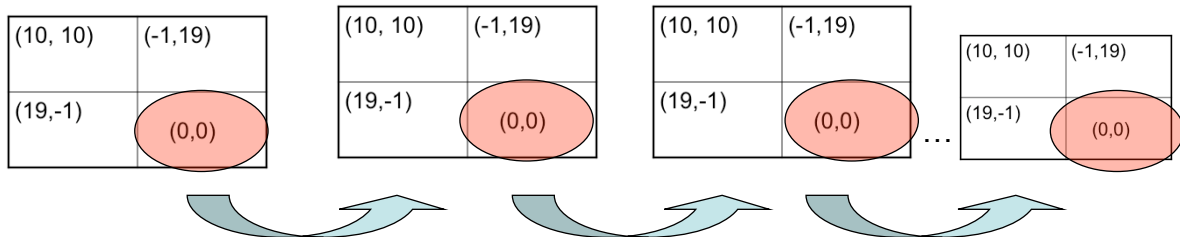
Nash Equilibrium



Should we care about collusion strategy? An economic analysis

- Repeated interactions and stability of collusive strategy.

- *Repeated game.*



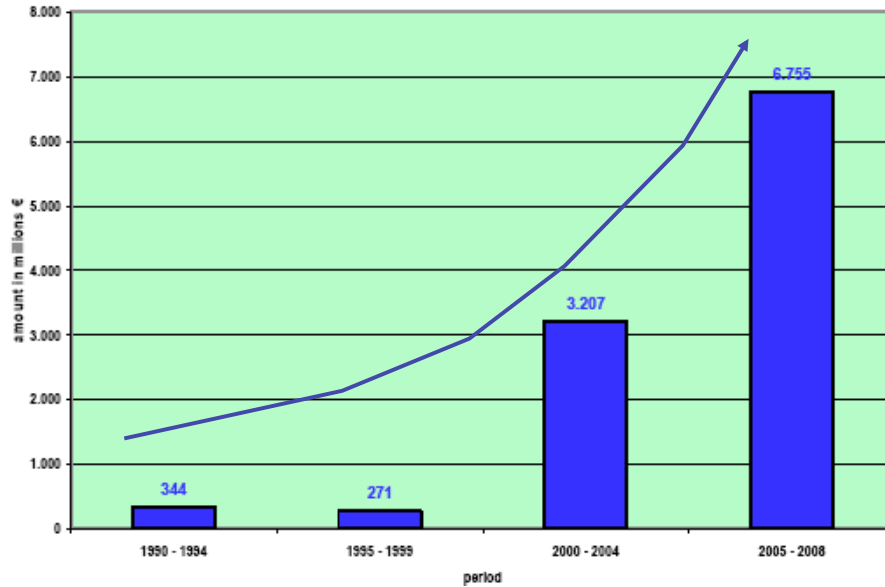
Millipede dilemma

Should we care about collusion strategy? An economic analysis

- Nevertheless we know that such collusive behaviors are numerous
- See Emmanuel Combe -Telos (April 2008 – in French) :
 - http://www.telos-eu.com/fr/article/consommateurs_les_ententes_vous_spolient
- Examples:
 - (October 15th, 2008): The European Commission has found that banana importers Chiquita, Dole and Weichert participated in a cartel between 2000 and 2002 in violation of the EC Treaty's ban on cartels and restrictive practices (Article 81). The Commission has therefore imposed a total of € 60 300 000 in fines on Dole and Weichert.
 - *Why only two fines? – wait for the end of the course!*
 - (October 1st, 2008): The European Commission has imposed a total of € 676 011 400 fines on 9 groups - ENI, ExxonMobil, Hansen & Rosenthal, Tudapetrol, MOL, Repsol, Sasol, , RWE and Total - for participating in a cartel for paraffin wax in the European Economic Area (EEA) in violation of the EC Treaty's ban on cartels and restrictive business practices (Article 81)

Should we care about collusion strategy? An economic analysis

- Fines imposed by the Commission – Sources: DG Competition



Should we care about collusion strategy? An economic analysis

Sources: DG Competition

1.5. Ten highest cartel fines per case (since 1969)

Nov 08

Last update: ++1st October 2008++ Car Glass 1.383.896.000

Year	Case name	Amount in €*
2007	elevators and escalators	992.312.200
2001	vitamins	790.515.000
2007	gas insulated switchgear	750.712.500
2008	candle waxes	676.011.400
2006	synthetic rubber (BR/ESBR)	519.050.000
2007	flat glass	486.900.000
2002	plasterboard	458.520.000
2006	hydrogen peroxide and perborate	388.128.000
2006	methacrylates	344.562.500
2007	hard haberdashery: fasteners	328.644.000



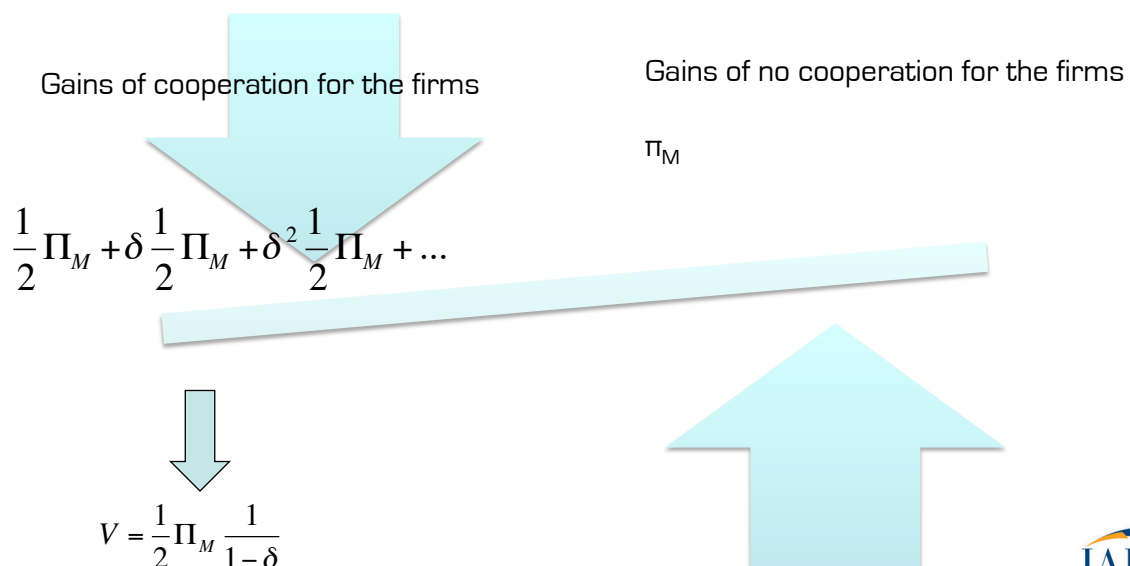
When should we care about collusion strategy? An economic analysis



Robert Gibbons
MIT

- An infinitely repeated game analysis
 - Equivalent to a game in which parties does not know when it will stop
 - Millipede dilemma disappears
- New rules of the game (Trigger strategy)
 - Parties agree to cooperate until one of them cheats. Then there is no way to recover confidence.
 - Profit to be shared is π_M
 - If there is no cooperation, then profit obtained by firms is normalized to 0

When should we care about collusion strategy? An economic analysis



When should we care about collusion strategy? An economic analysis

$$V = \frac{1}{2} \Pi_M \frac{1}{1-\delta} > \Pi_M \Leftrightarrow \delta > 1/2$$

But delta is a discount rate depending on:

$$\delta = \frac{1}{1 + \frac{r}{f}} h(1 + g)$$

With r : financial annual interest rate; f : frequency of price adjustment; h : probability to see the structure of the market the same at next period and g the growth rate of the market



When should we care about collusion strategy?

A collusion price is more probably a equilibrium when

- *The frequency with firms might adjust their prices is high*
- *The durability of the industry is high*
- *The growth rate of the industry is high.*

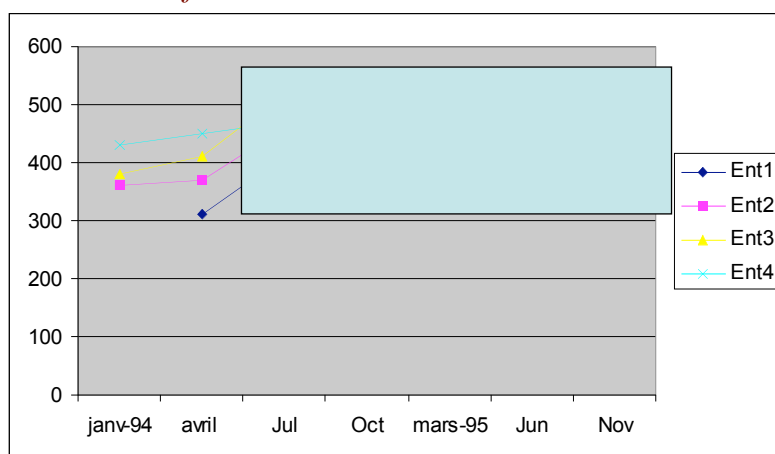


When should we care about collusion strategy?

Discussion

What about

- The number of partners (market is concentrated or not)?
- The comparability of partners?
- Information about prices are available or not?
 - The case of Carrefour, Darty and Boulanger in France
 - The case of Concrete market in Denmark



Institutional factors limiting collusion

- The antitrust division of the Department of Justice – USA put in place a Leniency program
 - Modified in 1993. New regime stipulates that the Leniency program might be applied if
 - The cartel is denounced before the authority knows its existence
 - Only one restriction: no amnesty for the party who is at the origin of the cartel
 - Results
 - In 1999, the amount of fines is higher than the amount of all fines decided since the Sherman Act!



Penalties in EU



- The penalties for companies that breach the competition rules can be very severe. For cartel infringements, the largest fine imposed on a single company is over ~~€479 million~~ €896 million the largest fine imposed on all members of a single cartel is ~~€992 million~~ €1,4 billion (in November 2008)
- In June 2006 the Commission revised its guidelines for setting fines in competition cases. These revised guidelines will often lead to fines for cartels being significantly higher than previously.



- *Optimal penalty should be equal to $X = \text{illicit gain} / \text{probability of detection}$*
- *In fact, X is a function of: Value of sales, duration, Z (to dissuade)*
 - *30% of the value of sales*
 - *Z : 15 to 25% of the value of sales*
 - *+100% max if it is not the first time*
 - *No more than 10% of yearly international turnover*
 - *Probability to be detected not taken into account!*



Penalties and Leniency program in EU



- The leniency policy offers companies involved in a cartel - which self-report and hand over evidence - either total immunity from fines or a reduction of fines which the Commission would have otherwise imposed on them.
 - It also benefits the Commission, allowing it not only to pierce the cloak of secrecy in which cartels operate but also to obtain insider evidence of the cartel infringement.
 - The leniency policy also has a very deterrent effect on cartel formation and it destabilizes the operation of existing cartels as it seeds distrust and suspicion among cartel members.



Penalties and Leniency program in EU



- In order to obtain total immunity under the leniency policy, a company which participated in a cartel must be the first one to inform the Commission of an undetected cartel by providing sufficient information to allow the Commission to launch an inspection at the premises of the companies allegedly involved in the cartel.
 - If the Commission is already in possession of enough information to launch an inspection or has already undertaken one, the company must provide evidence that enables the Commission to prove the cartel infringement.
 - In all cases, the company must also fully cooperate with the Commission throughout its procedure, provide it with all evidence in its possession and put an end to the infringement immediately. The cooperation with the Commission implies that the existence and the content of the application cannot be disclosed to any other company.
 - The company may not benefit from immunity if it took steps to coerce other undertakings to participate in the cartel.



Penalties and Leniency program in EU



- Companies which do not qualify for immunity may benefit from a reduction of fines if they provide evidence that represents "significant added value" to that already in the Commission's possession and have terminated their participation in the cartel.
 - Evidence is considered to be of a "significant added value" for the Commission when it reinforces its ability to prove the infringement.
 - The first company to meet these conditions is granted 30 to 50% reduction, the second 20 to 30% and subsequent companies up to 20%.



Institutional factors limiting collusion

- The European Commission adopted such a Leniency Program in 1996.

- In 2001, the amount of fines is higher than the amount of all fines decided since the treaty of Rome (1957) – 10 cartels are condemned - 56 companies – for an amount of 1,836 billion euros
- In 2004, 49 demands in 25 different cases have been deposited by companies



- France adopted such program in its New Economic Regulation Law (NRE) in 2001.

- Article L.464-2 in the Trade code stipulates a 50% exemption on fines for companies that do not contest decision and accept to change their future behavior.
- A complete or partial exemption is also provided for firms denouncing a cartel agreement to the French Competition Council
- Discussion: Christmas Toys case

- Today, 17 EU members adopted such program

