The Ups and Downs of the Doctrine of Collective Dominance: Using Game Theory for Merger Policy

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Outline of Presentation

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  - Models of tacit collusion
  - Conditions facilitating tacit collusion
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- Economic Evaluation

Introduction and motivation

- European competition law uses the idea of "dominance" where economists would normally talk in terms of "market power"
- This is fine as long as we are interested in single dominant firms – but sometimes there is market power in a market when no single firm is dominant
- Could be due to the sum of individual market power of several firms (US calls this "unilateral effects")
- Or to firms behaving like a monopolist by tacit collusion (US and EU call this "coordinated effects")
- The legal solution – "collective dominance" (like "group monogamy?" Or "democratic centralism"?)

Introduction and motivation (contd.)

- This is important because it is the most significant application of to public policy of *game theory* (the formal study of strategic interactions between rational agents)
  - Most public policy does not use game theory at all
  - Most anti-trust policy uses non-strategic economic concepts (market structure, elasticities of demand, efficiencies etc)
  - Only in tacit collusion do we really consider strategic firm interaction
- Applying the theory of tacit collusion needs different techniques in two different contexts:
  - Cartel policy: are firms colluding (explicitly or tacitly)? This needs evidence about *actual behavior*
  - Merger policy: are conditions created that will make firms likely to collude in the future? This needs evidence about *market conditions*
- More on this later….

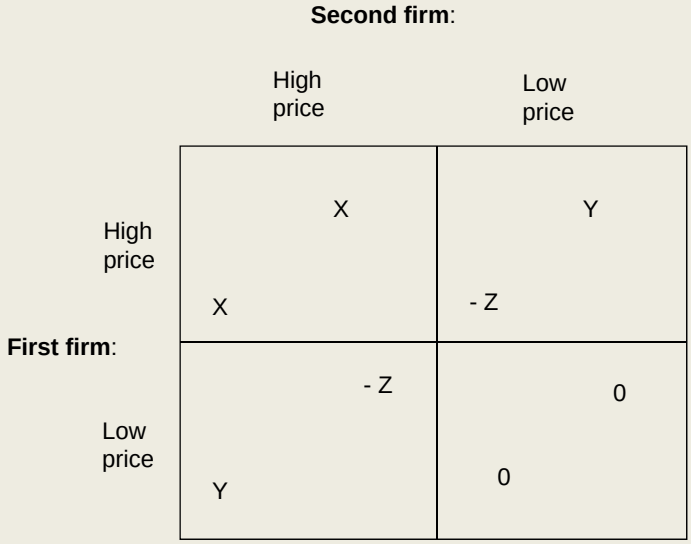
What is tacit collusion?

- Tacit collusion is where firms coordinate their behaviour in a way that takes account of their independence
- Requires two things:
  - Taking into account that a firm's behavior can influence its competitors – they will respond consciously and actively to its decisions
  - Using that influence to induce all firms to behave more like a monopolist than if they ignored their interdependence
- These are not so easy to define rigorously – what is the difference between responding passively and responding « consciously and actively »?
- Klemperer & Meyer showed that if firms competed in « supply functions » any outcome up to monopoly was possible
- This is too strong for our purposes – we want to see if firms are coordinating on relatively simple strategies (prices or outputs, say) and trying to influence each other in this dimension

The costs of collusion

- To customers:
  - High prices
  - Often low innovation (if there is collusion on product choice and design)
- To the firms themselves:
  - Have to restrain temptation to "cheat"
  - This is a Prisoners' Dilemma game!
  - So if the firms interact repeatedly they may be able to sustain collusion over time

Let's represent the payoffs to firms from high (collusive) and low (competitive) prices



Co-operation through threat of retaliation

- Suppose firms decide that if one of them "cheats" there will be no collusion from that time on
- Then the gain to one firm from cheating is Y – X
- The cost of cheating is that you lose future cooperation X
- How much does the future matter? Suppose next year's profits have a weight of g (which is less than 1)
- So collusion will happen if $Y-X < gX + g^2X + g^3X +\ldots$
- This can be expressed as $Y-X < gX/(1-g)$

Factors facilitating collusion

- Low temptation to cheat
  - Small number of firms
  - Not too easy to steal business from others
- Large benefits from collusion
  - High barriers to entry in the market, so collusion will not be undermined by new entry
- The future matters
  - Firms interact repeatedly, or on many markets
  - Demand is growing – unless this encourages new entry
- They can observe each others' behaviour
- This is crucial – without observability there can be no retaliation against cheating

Price and capacity competition

- When products are fairly homogeneous, price competition leads to prices very close to marginal cost, thus creating big gains from collusion, but also big temptations to cheat
- However, when firms first make capacity choices, then compete in prices, the result can be similar to what happens when they compete directly in output levels (see Kreps & Scheinkman 1983)
- So observability of capacity choices by rivals can compensate for lack of observability in prices
- Also capacity choices, if observed by competition authorities, can distinguish collusive from competitive behavior
  - Under collusion, there are co-movements in prices and capacitie
  - Under competition, prices co-move but not capacities

Summary: evidence of collusion

Setting	Question	Evidence type	Communic-ation that increases likelihood of collusion	Evidence distinguishing collusion from competition	Evidence not distinguishing collusion from competition
Cartel Policy	Are firms explicitly colluding?	Firm behavior	Directly between competitors	Capacity co-movements	Price co-movements
Cartel Policy	Are firms tacitly colluding?	Firm behavior	Within firm, indirectly to competitors	Capacity co-movements	Price co-movements
Merger Policy	Has merger created conditions that will facilitate tacit collusion?	Market conditions, product characteristics	Within firm, indirectly to competitors	Many firms, frequent interaction, entry barriers, transparency, predictability, symmetries, product homogeneity for each firm	Demand growth, product heterogeneity across firms

The *Airtours* Case

- In 1999 *Airtours* announces takeover of *First Choice*
- 4 main operators, with market shares Thomson 27%, Airtours 21%, Thomas Cook 20%, First Choice 11%
- Commission blocks transaction in Septembre 1999
- Court of First Instance overturns decision in 2002
- Cites inadequate analysis of tacit coordination
- In particular, no attention to way in which firms could enforce collusion by retaliation
- Collusion would not be in prices but in capacities
- Issue turned on whether firms could infer each others' capacity decision in pre-season planning period

The « Airtours criteria »

- The market must be sufficiently transparent to enable each member of the oligopoly to monitor whether other members of the oligopoly are "cheating" (i.e., acting independently of the oligopoly and deviating from the coordinated behavior);
- The oligopolists' coordination must be sustainable over time, meaning that there must be a credible threat of punishment that will deter companies from "cheating";
- The common policy of the oligopolists must be able to resist external constraints, such as new entrants, the ability of smaller operators to compete and the ability of customers to switch products in response to price increases.

The *Sony/Bertelsmann* case

- Crated four main firms in the recorded music market
- EU Commission decided not to oppose this deal although there was concern about tacit collusion in recorded music
- Two main grounds
  - Lack of transparency in pricing of albums
  - No evidence of retaliation in the past
- Court of First Instance unconvinced by former
- Said latter irrelevant – might show effective collusion
- Also criticized lack of prospective analysis
- And said *Airtours* criteria could be established on "very mixed series of indicia and items of evidence relating to the signs, manifestations and phenomena inherent in the presence of a collective dominant position".
- Overturned Commission decision in July 2006
- Case has gone back to the Commission

Economic evaluation

- It seemed as though Airtours judgement had established a clear procedure with an unambiguous burden of proof at each stage
- Airtours looks an easier case than Sony-BMG! (see the table)
- The luxury of clearing in case of doubt is no longer an option
- Watch this space!

Airtours criteria	A procedure for implementation	Application to Airtours	Application to Sony-BMG
Is market sufficiently transparent?	What is the variable on which parties collude?	Capacity in planning period: total bed-nights	Not clear: retail prices are multi-dimensional, capacity meaningless
	Can deviations be detected?	Can rivals observe changes in bed-nights?	Commission originally thought not, Court unconvinced
Will credible threat of punishment deter firms from cheating?	Is punishing deviators rational?	Are capacity retaliations not too costly?	Depends on sensitivity of demand to price
	Does this hurt deviators overall?	Would "capacity war" outweigh gains from cheating?	Ditto
Can collusion resist external constraints?	What can firms gain from collusion?	Will profit increases avoid inducing competitive fringe to expand?	Are there large marketing barriers to entry?

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