

Achieving Cooperation *Industrial Organization*

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Outline

- Facilitating Practices
 - Multimarket Contact
 - MFN's
 - MCC's
 - Switching Costs
- Christie's and Sotheby's

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Pop Quiz 1

- What is the main result in the Green and Porter paper?

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Pop Quiz 2

- What is the main result in the Rotemberg and Saloner paper?

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Pop Quiz 3

- What drives the difference in the results in the Green and Porter and Rotemberg and Saloner papers?

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Mechanism of Collusion

- Colluding firms must agree on a price structure without speaking (FOCAL POINTS)
- All agreements whose violation would be profitable must be enforced (ENFORCEMENT)
- For enforcement, need to be able to detect violations (DETECTION)

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Multimarket Contact

- When one large conglomerate enterprise competes with another, the two are likely to encounter each other in a considerable number of markets. The multiplicity of their contact may blunt the edge of their competition.
 - Corwin Edwards, 1955
- Potential for “mutual forbearance” is not limited to conglomerates
- Can exist for single-product firms operating in distinct geographic markets

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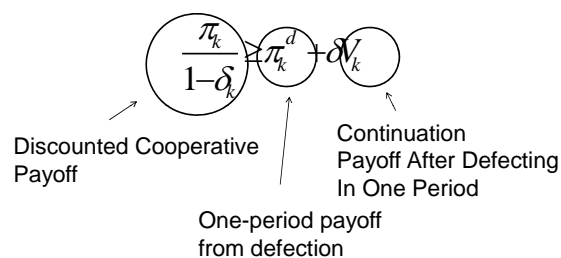
Multimarket Contact

- Consider firms competing in more than one market. The condition for collusion to be sustained in any one market (Let’s call this market k) is

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Condition For Collusion in One Market



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Now, suppose firms are competing in markets A and B. Collusion is sustained as long as

$$\frac{\pi_A}{1-\delta_A} + \frac{\pi_B}{1-\delta_B} \geq \pi_A^d + \delta_A V_A + \pi_B^d + \delta_B V_B$$

(Just add up the discounted cooperative payoffs for both markets on one side and the one period payoff from defection and continuation payoffs in both markets on the other side)

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- Note: It doesn’t help if markets are just replications of one another. Need differences in costs, discount rates, or number of firms.

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How does this work?

- Multimarket contact serves to pool the incentive constraints of the two markets
- Collusive outcomes are easier to sustain because the incentive constraint is more easily satisfied
- A slack incentive constraint in one market can be used in the other market

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The intuition prior to game theory...

- Informally (according to Edwards)
 - [Firms which compete against each other in many markets] may hesitate to fight local wars vigorously because the prospects of local gain are not worth the risk of general warfare... A prospect of advantage from vigorous competition in one market may be weighted against the danger of retaliatory forays by the competitor in other markets.

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A Worked Example

Suppose Bertrand competition in both markets. (Deviation profits are zero). Let market A have 2 identical firms and let market B have N identical firms including the two of which are competing in market A. Total profits under collusion for each market are 1 and let's assume that when firms cooperative they choose to split the profits fairly, i.e. $1/2$ to each firm in market A and $1/n$ to each firm in market B.

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Questions

- Q1: What are the discounted cooperative payoffs in each market?
- Q2: What is the profit from deviating for one period in each market?
- Q3: What are the remaining profits after defecting in one period, assuming the grim strategy?

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More Questions

- Q4: What is the condition for collusion to be sustained in Market A?
- Q5: For what values of delta will there be a "slack" (i.e. strictly greater than) incentive constraint?
- Q6: What is the condition for collusion to fail in market B?
- Q7: What can the two firms do that compete in market A do in market B to make collusion occur in market B?

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It is possible that

$$\frac{1}{1-\delta} \frac{1}{2} \geq 1 \text{ so collusion is sustainable in market A.}$$

Furthermore, for $\delta > 1/2$, there is surplus enforcement power, i.e. the incentive constraint is slack.

Suppose $\frac{1}{1-\delta} \frac{1}{n} \leq 1$ so collusion will fail in market B, without multi-market contact.

The two multimarket firms could remedy the situation by cutting their supplies in B by enough to ensure that the single market firms have an incentive to sustain collusion. They will have the ability to do this by using up part of their slack incentive constraint in market A.

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Multi-market contact conclusions

- 'Powerful' conglomerate firms may deliberately maintain lower market shares in some of their markets
- Multimarket operation is potentially very profitable
- If enforcement is more rapid (detection/punishment lag shorter) in one market than another, then multimarket collusion is strengthened

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Multimarket contact in US domestic airlines

- Evans and Kessides (QJE 1994):
- Analyzed 1000 largest city pair routes from 1984-1988. Three key variables explained price on a particular route:
 - A) average route contact – the number of routes over which the competitors on the particular route are competing – moving from the lowest 25th percentile to the 75th percentile raised prices by 5.1%
 - B) airport market share – controlling a hub matters for airline market power
 - C) When competition on a particular route goes from monopoly to duopoly, prices decrease by 11%, but further increases in competition only affect prices marginally.

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		Firm 2		
		p_H	p_L	
Firm 1	p_H	100,100	-10,140	
	p_L	140,-10	70,70	

Changing the Pay-offs

		Firm 2		
		p_H	p_L	
Firm 1	p_H	100,100	-10,90	
	p_L	90,-10	70,70	

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Most-Favoured-Nation (MFN)

- Provides buyer with protection against the the seller offering a lower price to another customer
 - Example from GE and Westinghouse
 - If at any time before [buyer] takes delivery of said generator, [seller] offers a lower price for a generator of comparable size and quality to another purchaser, [seller] will also offer that lower price to [buyer].

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- Provision of an MFN by even one rival may be advantageous to all sellers, including the one that institutes the MFN.
 - Instituting MFN puts seller at a disadvantage vs. rivals; more than offset by price stabilization
 - MFNs work by making price cutting expensive

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Difference between posted prices and MFNs

- Posted prices vs. MFNs
 - MFN is a binding contractual clause
 - Price posting (with no discounting) is adopted unilaterally and voluntarily

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Meet the Competition Clauses (MCC)

- Provides buyer with protection if the buyer is offered a lower price by some other seller.
- For example, retailers offer to refund the price difference + 10% of the price difference if a lower price is found elsewhere
 - John Lewis
 - Circuit City

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Meet or Release MCC Clauses

- Requires buyer to give supplier opportunity to supply at the lower price offered by another firm
- Information exchange device; eliminates detection lag
- Facilitates selective matching of otherwise secret discounts
- Primarily used in business-to-business contracts

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No release MCC clauses

- Forces the supplier to supply the buyer at the lower price offered by another firm
- Can lead to allocative inefficiencies
- Inefficiencies may be small relative to anti-competitive effects

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Predation, Entry Deterrence and MCCs

- An incumbent's threat to lower price after entry generally lacks credibility
- A no-release MCC adds credibility to the threat
- Even if below-cost pricing is unprofitable, it must be carried out

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Switching Costs Klemperer (1995)

- Costs of switching to a competitor's product, even when the two firms' products are functionally identical
 - Airline frequent flyer miles
 - Computer operating systems and programs
 - Tide detergent

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Conditions for Switching Costs to Apply

- Need for compatibility with existing equipment
- Transactions costs of switching suppliers
- Costs of learning to use new brands
- Uncertainty about the quality of untested brands
- Discount coupons and similar devices
- Psychological costs of switching, or non-economic brand-loyalty

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How Switching Costs Work

- If a fraction of consumers have purchased from Firm A and a fraction have purchased from Firm B, then these consumers will not want to switch unless the price difference outweighs the cost of switching. This means it is then very costly for each firm to attract the other firms customers. This is a facilitating practice that allows the firms to keep high prices.

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- In a two period model, if consumers are locked in during the second period, prices will be lower in the first period (to attract new customers) and higher in the second period than in a model without switching costs
- Examples:
 - Banks give university students gifts and free banking to induce them to open current accounts
 - Computer equipment is offered cheaply to students through their educational institutions
 - Auto insurance sold to new customers is less profitable than that sold to old customers

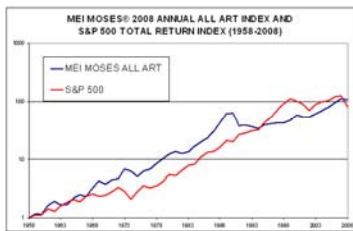
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Christie's and Sotheby's

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Effective September 5, 1995

DOLLAR AMOUNT	PRIVATE	DEALER	MUSEUM
0- \$99,999			
	Current commission rates		
\$100,000-\$249,999	9%	6%	5%
\$250,000-\$499,999	8%	6%	5%
\$500,000-\$999,999	6%	6%	5%
\$1,000,000-\$2,499,999	5%	5%	3%
\$2,500,000-\$4,999,999	4%	4%	2%
\$5,000,000-\$9,999,999	2%	2%	2%
\$10,000,000-\$24,999,999			
\$25,000,000+			
	lower of 2% or 50% of expenses		
	lower of 2% up to \$25 million and 1%		
	on any amount of \$25 million or 50%		
	of expenses		

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