Serial Collusion in Context: Repeat Offenses by Firm or by Industry?

Margaret Levenstein, Catarina Marvão, Valerie Suslow*

*University of Michigan, SITE-Stockholm School of Economics and Trinity College Dublin, and Johns Hopkins University (respectively)

OECD Global Forum on Competition
Serial Offenders: Sectors That Are Prone to Endemic Collusion
30 October 2015
Outline

• Research Questions
• Cartel Prevalence
  • Industries and Firms Prone to Collusion
• Defining “Serial Offender”
  • Industry and Firm Recidivism
• Policy Tools
Research Question 1 – Locating Recidivism

• Which industries are more prone to collusion?
  • Distinguish recidivism from prevalence
• Is recidivism at the industry level?
  • Specific product/technology characteristics, barriers to entry
    – e.g., High-fixed costs (cement)
  • Design of selling mechanism (e.g., auctions)
• Is recidivism at the firm level?
  • Organizational culture (e.g., diamonds)
  • Using leniency strategically
• Is it a mix?
  • Do multi-market collusive firms spread the behavior?
Research Question 2 – Effective Policies

• Anti-recidivism policies can be thought of as post-cartel policies. Anti-cartel policies alone are not sufficient.

• If recidivism is at the industry level:
  • Merger reviews require additional vigilance
  • Consider structural remedies or ways to encourage entry
  • Monitoring, Screening

• If recidivism is at the firm level:
  • Sanctions for managers/executives
  • Consent decrees
  • Compliance programs
Industries Prone to Collusion

- Collusion occurs in all sectors, but there are discernable patterns
- US: construction and chemicals common before leniency (1961-92) and after (1993-2013)
  - Other changes over sample period reflect changes in economic structure, e.g., “information” sector cartels comprise 1.3% of pre-leniency sample and 8.1% of post-leniency sample
- EU: again, chemicals common before leniency (1969-1997) and after (1998-2014)
- Others studies, e.g., Grout & Sonderegger, “Predicting Cartels,” OFT Report (2005)
- Firms may not be the same over the years => industry recidivism
Prevalence of Chemicals Cartels in EU

23 cartels and 106 firms => industry is prone, not solely specific firms
Prevalence: Patterns in US Data

• Local markets
  • e.g., retail gasoline/petrol stations and dealers, ready-mix concrete
  • Collusion in these local markets is frequently uncovered, but not necessarily the same firms. Localized markets can make collusion easier (e.g., publicly posted prices for gasoline stations). If stations are owned by multi-market firms (chains of stations or suppliers of gasoline), that can also contribute to repeated collusion over time and/or across geographic locations.

• Government procurement
  • e.g., construction projects (roadways, buildings), school milk, medical supplies, military supplies
  • Our sample highlights the importance of government procurement in collusion. Many “repeat industries” are actually repeat customers where the government is a customer.
    – Possibly result of auction design or transparency rules, or could also be the result of public corruption.
This Is Not a New Phenomenon: Similar Historical Patterns in Certain Industries*

<table>
<thead>
<tr>
<th>Industry</th>
<th>Length of Cartel Episodes (years)</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>5 1901 2 1906 2 1912 3 1923 4 1926 5 1931</td>
<td>Eckbo</td>
</tr>
<tr>
<td>Coffee</td>
<td>1 1957 1 1958 3 1959</td>
<td>Eckbo</td>
</tr>
<tr>
<td>Copper</td>
<td>2 1888 4 1918 6 1926 4 1935 19 1968</td>
<td>Griffin</td>
</tr>
<tr>
<td>Steel</td>
<td>4 1926 0.5 1930 0.2 1931 6 1933</td>
<td>Eckbo</td>
</tr>
<tr>
<td>Sugar**</td>
<td>2 1926 4 1931 2 1937 2 1959 5 1968 3 1974 3 1978</td>
<td>Griffin</td>
</tr>
<tr>
<td>Sulfur</td>
<td>3 1907 10 1922 5 1934 11 1947</td>
<td>Griffin</td>
</tr>
<tr>
<td>Tin</td>
<td>2 1929 3 1931 2 1935</td>
<td>Eckbo</td>
</tr>
</tbody>
</table>

* Levenstein & Suslow (2006, Table 3)

**Sugar pattern continues, e.g., on 7 October 2015, Colombian Competition Authority imposed a record fine on 12 sugar mills, a trade association, and 2 trading companies.
Some firms do have a history of collusion, but it is not always colluding in the same way. It may be in a new industry or product line, with a new set of co-conspirators.

  - e.g., VSL: 1970 cartel began in Highway Bridge Projects, 1974 cartel began in Concrete Construction Projects with 2 overlapping members plus others (first cartel indicted 1979), 1994 cartel began in Cable-stayed Bridge Projects

  - e.g., Akzo Nobel: Distinct products in each of 9 cartels

Is it corporate culture? Are they using what they learned in previous cartel?
Are There Predictable Determinants of Industry Prevalence?

• Unfortunately, no. Determinants of cartel activity (whatever degree of success) are varied and endogenous.
• Example – Concentration: Observe numerous cartels with multinational firms in concentrated industries, competing in multiple markets and along multiple product lines. Yet, there is no established empirical relationship between industry concentration and likelihood of collusion.
  • Endogeneity in this context: Collusion may allow more firms to survive, reducing concentration
• Other hypothesized factors: High fixed costs, Industry Culture, Learning from experience
• One predictable factor: Inelastic demand. However, necessary but not sufficient.
Are There Predictable Determinants of Cartel Timing?

• For example, do firms choose to begin colluding during economic downturns?
  • Evidence indicates that there may be a link between cartel formation and increases in the intensity of competition in a particular market, not falling prices in the aggregate.
  • Descriptive evidence (Levenstein & Suslow, 2014, pp. 447-48)

<table>
<thead>
<tr>
<th>Sample</th>
<th>% formed during recessionary months</th>
<th>% recessionary months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case studies (12)</td>
<td>67%</td>
<td>63%</td>
</tr>
<tr>
<td>US cartels (184)</td>
<td>39%</td>
<td>39%</td>
</tr>
<tr>
<td>Intl cartels (81)</td>
<td>11%</td>
<td>13%</td>
</tr>
</tbody>
</table>
What Happens *After* Cartel Breakup?

• Increased competition
  • Goal
• Tacit collusion
  • Concern
• Mergers (with co-conspirator or other firm)
  • Concern
• Cartel forms again (recidivism)
  • Concern: While anti-cartel policies can be effective, if cartels learn over time, the cartel formation and organization costs could fall (e.g., Alexander 1994, Chicu, Vickers, and Ziebarth 2013)
## What Is Recidivism? How Much Is There?

<table>
<thead>
<tr>
<th>Author</th>
<th>Scope</th>
<th>Sample Period</th>
<th>Multiple convictions</th>
<th>Recidivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Werden et al. (2011)</td>
<td>US Post-leniency</td>
<td>1999-2011</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Levenstein &amp; Suslow</td>
<td>US Pre- and post-leniency</td>
<td>1961-2013</td>
<td>113/2054</td>
<td>14/2054 NA</td>
</tr>
</tbody>
</table>

* denominator = number of cartel member firms in each sample
# ABB: One Serial Offender

<table>
<thead>
<tr>
<th>Case</th>
<th>Producer</th>
<th>Start</th>
<th>End</th>
<th>Invest.</th>
<th>Fined</th>
<th>Mkt Share</th>
<th>#Firms</th>
<th>Place Queue</th>
<th>Report aft.end</th>
</tr>
</thead>
<tbody>
<tr>
<td>35691</td>
<td>Pre-insulated pipe cartel</td>
<td>1990</td>
<td>1996</td>
<td>1997</td>
<td>1998</td>
<td>40%</td>
<td>10</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>38899</td>
<td>Gas insulated switchgear</td>
<td>1988</td>
<td>2004</td>
<td>2004</td>
<td>2007</td>
<td>19%</td>
<td>11</td>
<td>1st</td>
<td></td>
</tr>
<tr>
<td>39129</td>
<td>Power Transformers</td>
<td>1999</td>
<td>2003</td>
<td>2004</td>
<td>2009</td>
<td></td>
<td>7</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>39610</td>
<td>Power cables</td>
<td>1999</td>
<td>2009</td>
<td>2009</td>
<td>2014</td>
<td>19%</td>
<td>18</td>
<td>1st</td>
<td></td>
</tr>
</tbody>
</table>

- 4 Cartels: price-fixing, market sharing (2), customer allocation
- Power cables also fined in US
- EU granted immunity in gas and power cables cartels
- Pipe cartel: 55% reduction but 50% fine increase for leadership
Distribution of Cartel Members per Sector EU (1999-2015)

Comments:
• High proportion of RO: Chemicals (sector 7), and Mfg of Electrical Equip. (sector 12)
• High proportion of SO: Transportation & Storage (sector 20) – active collusion but no RO => distinction between recidivism and prevalence
Important to understand what leads to collusion to select appropriate policy tool:

• Fines & Leniency
• Individual Accountability
• Follow-on Damages
• Structural Remedies
• Consent Decrees
• Monitoring
• Screening
POLICY TOOLS
Policy Tools: Company Fines and Leniency

• Evidence on fines for repeat offender firms (Marvão 2015)
  • Repeat offenders receive larger leniency reductions
  • Akzo, 9 fines: 2x 100%, 20%, 25%, 30%, 40%. No fine increases for recidivism
  • Sumitomo, 7 fines: 5x 100%, 45%

• Can leniency/amnesty be used to facilitate future collusion?
  • Firms learn how to reduce penalties
  • Example: ABB received 100% reduction in fine and then colluded again
Policy Tools: Individual Accountability

• Fines and prison terms for individuals
  • Ashton & Pressey (2012) document that marketing and sales managers involved in 43% of 56 cartels from EU sample, 1990-2009
  • Buccirossi & Spagnolo (2008), Spagnolo (2012) document for LIBOR scandal that fines alone are insufficient: bankers may hide their wealth, companies indemnify them for their losses

• Clearly not sufficient in certain cases. What additional tools could be used?
  • e.g., disqualification from leadership role in industry
    – Robert Koehler: Admitted to price-fixing graphite electrodes cartel (EC 36490/2000) and became CEO of SGL Carbon in 2012.
    – British Airways promoted an executive pending trial for the EU passenger fuel surcharges cartel in the EU (EC, 2007)
Policy Tools: Follow-on Damages

• Complementarity between public and private enforcement
• Ability of injured private parties to initiate a civil suit or class actions
• US: public and private law enforcement has co-existed since the Sherman Act (1890); private litigation plays a major role
  • Treble damages for all but the reporting cartel member
  • e.g., Deutsche Bahn sued Lufthansa (12/2014), the immunity recipient in airline cargo cartel, fined by EC and DOJ, for 2 billion US$ in damages
• EU: Cartel Damage Claims firm – 1 case, 3 ongoing
  • EU Directive on damages (11/2014): prevents use of leniency statements in subsequent actions for damages
Policy Tools: Structural Remedies

• Alter industry structure: hypothesis that this will change the nature of competition in the market
  • Tighter scrutiny for merger reviews (see, e.g., Davies et al. 2014, Marx & Zhou 2015)

• Tradeoff between risk and reward
  • Structural remedies may provide higher rewards but are risky; behavioral remedies are generally less effective but also less risky (Motta et al, 2007)
Policy Tools: Consent Decrees

• According to one study, consent decrees for collusion are the “gold standard of antitrust enforcement” (Epstein 2007, p. 14)
  • Lowers costs of prosecuting recidivists (although already a felony offense in US, it is easier to bring new charges for repeat behavior if firm violates consent decree)

• Commonly used in US in 1960-1980
  • e.g., US v. Rea Construction (1980), concrete: Ten-year consent decree enjoined defendant “from fixing prices, rigging bids, or allocating customers or territories on contracts for asphalt or concrete paving projects.” Included provision to conduct inspections.
  • e.g., US v Rockwell Int’l, Singer Co., Textron Inc. (1980), gas meters: Ten-year consent decree: “Fixing the prices, discounts or other terms or conditions...Exchange of information concerning bids, prices, or production...”

• More recently: Brazil (CADE) enacted 2007 resolution to allow for use of consent decrees to settle cartel investigations
Policy Tools: Monitoring

• Watch lists
  • Australia (ACCC): “Cartel Intelligence Project” has watch list of firms and markets, with detailed assessments

• Price monitoring by administrative bodies
  • e.g., Belgium, France, Spain
  • Also occasionally publication of price lists (e.g., Netherlands)

• Require compliance programs and training
  • Necessary but not sufficient, e.g., Akzo Nobel: “The Board of Management considers compliance with competition law to be more than a legal requirement; it is core to Akzo Nobel’s value of integrity and responsibility....[D]isciplinary action will be taken against any employee who violates competition law....[including] dismissal. In this area we are “a zero tolerance company”.” (CEO’s note in the Competition Law Compliance manual (2008-present))
Policy Tools: Screening

• Statistical screens by competition authorities
  • US FTC and Brazil: gasoline price monitoring
  • Korea and Mexico: bid-rigging screens
  • Sweden: bids and contracts in public procurement reviewed (2009-2013) to develop screening tool
  • Italy: price screens detected cartel for infant milk sold in pharmacies (2004)

• Screens applied by academics
  • US - LIBOR (Abrantes-Metz et al., 2012)
Future Research

• If firms who are serial offenders are learning to collude, then repeat offenses should be associated with longer-lived cartels.

• If serial offenders continue to form cartels after getting caught but they are not learning (or the industry characteristics are not conducive), then repeat offenses should be associated with shorter-lived cartels.
  • In EU data, the latter appears to be true (shorter-lived), but the difference is small.
THANK YOU
References