

“Corporate Disclosure as a Tacit Coordination Mechanism: Evidence from Cartel Enforcement Regulations”

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- Analyze two key types of data of interest for studying collusion:
 - earnings call transcripts
 - SEC filings
- Analyze firms' strategic use of financial disclosures to sustain collusion
 - increased product-related discussions during earnings calls
 - fewer requests for confidential treatment for material sales contracts in SEC filings
- Interpretation: passage of leniency laws in foreign countries has caused US firms to stop explicitly colluding and start tacitly colluding—with tacit collusion based on communication through earnings calls and SEC filings

- Theories for usefulness of earnings calls and SEC filings in collusion include:
 - coordinate future conduct
 - public price announcements (or capacity/other)
 - in advance of effective dates
 - monitor past conduct
 - SEC enforcement (however disclosure “somewhat voluntary”)
 - mitigate buyer resistance
 - negotiate aggressive contracts and reveal those as benchmarks to anchor other negotiations

- Completely willing to believe that firms will use all (legal?) avenues available to them to enhance profits
- Including:
 - communication and signalling via earnings calls
 - communication and signalling via SEC filings
- Exciting that big data techniques open doors for new analyses of “non-numerical” data
- Great to see attention paid to antitrust implications of communication
- Not convinced that certain alternative interpretations of the results have been ruled out



- SEC redaction data: 2000–2012
- Earnings call data: 1994–2012?

- Attempt to explain earnings call comments and failure to redact contracts in SEC filings based on the introduction of antitrust leniency in countries that have exports into the two-digit SIC code
- Claim: identify a causal impact of increases in explicit collusion costs on firms' disclosure choices
 - collusion costs \iff foreign leniency

j = 2-digit SIC industry; t = year; k = foreign country

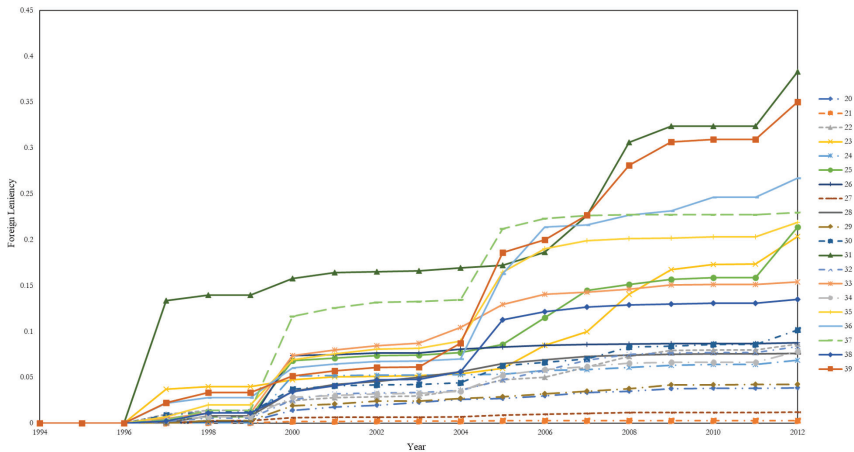
- Foreign leniency:

$$\text{foreign leniency}_{jt} = \sum_k w_{kj} L_{kt}$$

- w_{kj} : given two-digit SIC code j (e.g., “Electronic & Other Electric Equipment”) and country k (e.g., China), share of SIC code j output imported to the US from country k in 1990 
- L_{kt} : given country k and year t , 0/1 based on whether the country offers antitrust leniency 
- sum over countries
- roughly: import share in the two-digit SIC code from countries with antitrust leniency

Leniency variable

Note: 2008: financial crisis *and* China's leniency policy

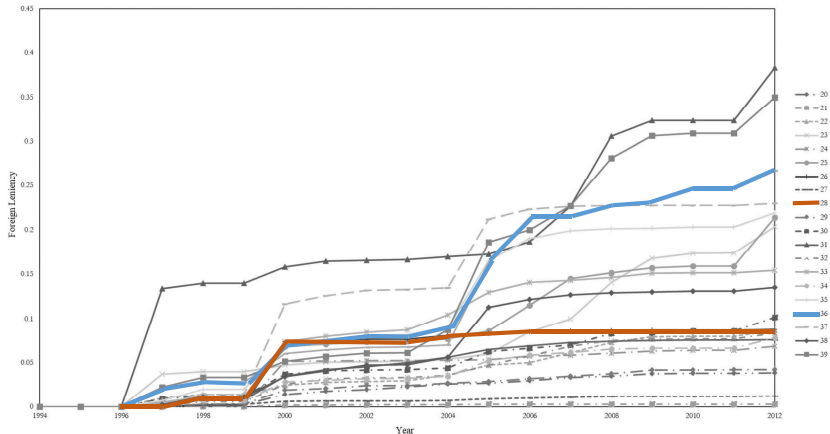


Leniency variable: electronics and chemicals

Approx. 30 EC countries

Germany 2000

EC leniency 2002 (robustness check)



$i = \text{firm}; \quad j = \text{2-digit SIC industry}; \quad t = \text{year}$

- Redacted contracts

redacted contracts $_{ijt} \in \{0, 1\}$

- material sales contracts (exhibit 10)
 - exclude contracts not related to product sales
- 414 firm-year material contracts (exclude others)
- keywords: “confidential treatment,” “confidential request,” “confidential ... redacted”
- variable coded 1 if at least one keyword for at least one material sales contract for the firm/year
- roughly: 50% coded 1 in any year

- %Product Conference Calls

$$\% \text{product conference calls}_{ijt} = \frac{\text{keywords}}{\text{total words}} \cdot 1000$$

- Earnings calls with equity analysts
- CEO or CFO opening statements
 - exclude transcripts with fewer than 150 words
- Count use of:
 - “product,” “service,” “customer,” “consumer,” “user,” “client”
 - scale by total number of words in transcript
- Average over calls in a year

- return on assets
- total assets
- HHI for two-digit SIC code (avg. 600)
- import penetration (four-digit SIC level)

- Claim: demonstrate that passage of leniency laws leads to dissolution of cartels
 - test whether foreign leniency variable captures an increase in collusion costs
 - data from 1994–2012
 - regress log of 1 plus number of convicted cartels (alt. firms) in two-digit SIC industry on foreign leniency variable and fixed effects
 - positive, significant (380 obs)
- Great—leniency works!
- Concerns
 - use of “foreign leniency” variable to explain foreign cartels
 - were the cartels discovered through leniency?
 - what if replace foreign leniency with a time trend?
 - don’t observe initiations of collusion (relevant for interpretation of other findings)

- Regress *redacted contracts* on foreign leniency
 - negative, significant (414 obs)
- Regress *%product conference* calls on foreign leniency
 - positive, significant (9,713 obs)
- Interesting/provocative results
- Raise questions related to:
 - measurement
 - interpretation

Paper

- Firms are explicitly colluding at $t = 0$
- Leniency abroad is bad news
- Causes firms to switch from explicit to tacit collusion
- Structure of tacit collusion involves fewer redactions and more use of product words

Alternative

- Firms are not explicitly colluding at $t = 0$
- Leniency abroad is good news—lower fines or reflects a rise in collusive activity (increased profitability)
- Firms start explicitly colluding
- Structure of explicit collusion involves fewer redactions and more use of product words

- What are these firms/industries that were explicitly colluding but switched to tacit?
 - maybe statute of limitations has not run out
- Examples (not widgets)
 - details of product language and un-redactions
- Is a richer analysis possible?
 - what is the information content of the un-redactions?
 - what is the intent of earnings call comments?
 - perhaps big data techniques open up new possibilities for analysis

- Great to see this data being examined with an eye towards antitrust
- I worry that the story is more one of firms expanding anticompetitive conduct than one of them curtailing it

- Exclude financial (6000–6999) and utility (4900–4999)

D. Manufacturing

- 20 Food & Kindred Products
- 21 Tobacco Products
- 22 Textile Mill Products
- 23 Apparel & Other Textile Products
- 24 Lumber & Wood Products
- 25 Furniture & Fixtures
- 26 Paper & Allied Products
- 27 Printing & Publishing
- 28 Chemical & Allied Products
- 29 Petroleum & Coal Products
- 30 Rubber & Miscellaneous Plastics Products
- 31 Leather & Leather Products
- 32 Stone, Clay, & Glass Products
- 33 Primary Metal Industries
- 34 Fabricated Metal Products
- 35 Industrial Machinery & Equipment
- 36 Electronic & Other Electric Equipment
- 37 Transportation Equipment
- 38 Instruments & Related Products
- 39 Miscellaneous Manufacturing Industries

Firm	Cartels
Chunghwa	CRTs, LCDs
Hitachi	CRTs, auto parts (alternators and starters), electrolytic capacitors, DRAM, optical disk drives, gas insulated switchgear, power transformers, smart card chips
LG/Philips/LPD	CRTs, optical disk drives, lithium-ion batteries, LCDs, smart card chips
Mitsubishi	CRTs, auto parts, DRAM, smart card chips, gas insulated switchgear, power cables, elevators/escalators
Panasonic	CRTs, auto parts, compressors, capacitors
Samsung	CRTs, DRAM, LCDs, smart card chips, optical disk drives, CRT glass
Toshiba	CRTs, DRAM, gas insulated switchgear, power transformers

▶ return

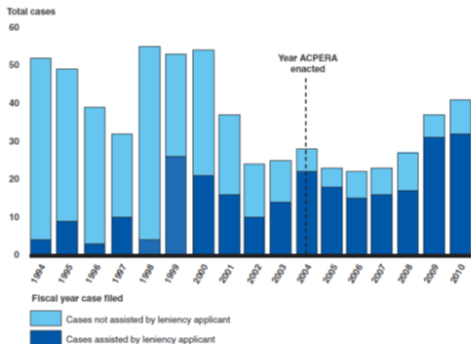
Countries with leniency

Country	Year	Country	Year
Argentina	None	Latvia	2004
Australia	2003	Lithuania	2008
Austria	2006	Luxembourg	2004
Belgium	2004	Malaysia	2010
Brazil	2000	Mexico	2006
Bulgaria	2003	Netherlands	2002
Canada	2000	New Zealand	2004
Chile	2009	Nigeria	None
China	2008	Norway	2005
Colombia	2009	Oman	None
Croatia	2010	Pakistan	2007
Cyprus	2011	Peru	2005
Czech Republic	2001	Philippines	2009
Denmark	2007	Poland	2004
Ecuador	2011	Portugal	2006
Estonia	2002	Romania	2004
Finland	2004	Russia	2007
France	2001	Singapore	2006
Germany	2000	Slovakia	2001
Greece	2006	Slovenia	2010
Hong Kong	None	South Africa	2004
Hungary	2003	Spain	2008
Iceland	2005	Sweden	2002
India	2009	Switzerland	2004
Indonesia	None	Taiwan	2012
Ireland	2001	Thailand	None
Israel	2005	Turkey	2009
Italy	2007	Ukraine	2012
Japan	2005	United Kingdom	1998
Jordan	None	Venezuela	None
Korea	1997	Zambia	None

- Noise in timing between enactment and implementation of leniency (ACPERA)

U.S. DOJ: Growth in Role of Leniency Applications

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.