

Discussion of
Cartels Uncovered &
An Anatomy of Cartel Contracts
by Hyytinen, Steen & Toivanen

Francesco Decarolis

Bocconi University

March 6, 2018

A Unique Dataset

Usually, the **unobservability** of cartels limits empirical investigations; **however, during 1951 - 1990, Cartels were legally registered with government in Finland.**

The historical dataset assembled has:

- ▶ 900 registered cartels: 359 manufacturing and 539 non-manufacturing
- ▶ 193 Finnish manufacturing industries: 69% of them had at least 1 nation-wide horizontal cartel
- ▶ births, deaths and other activities of each cartel

This unique dataset allows the authors to answer a few questions:

- ▶ how common are cartels and how long do they live? – **Hyytinen et al. [2017]**
- ▶ how the type of cartel agreement is affected by structural industry characteristics – **Hyytinen et al. [2018]**

Summary - Hyytinen et al. [2017]

- ▶ Uses a **Hidden Markov Model (HMM)** that separately identifies the probabilities for cartels formation and continuation v.s. the probabilities of observing them
- ▶ Recovers the hidden dynamics of cartelization across industries

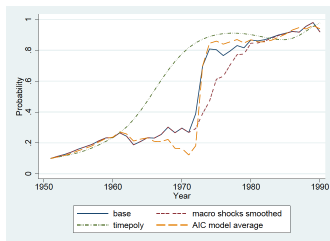


FIGURE 3. ESTIMATED PROPORTION OF CARTELIZED MARKETS.

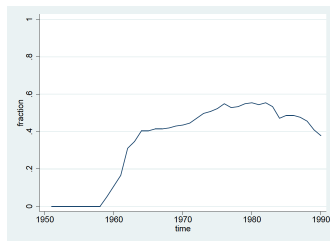


FIGURE 4. FRACTION OF INDUSTRIES WITH A REGISTERED CARTEL.

- ▶ Shows that cartels are more likely to form and persist when
 - ▶ homogeneous goods are sold
 - ▶ GDP is more volatile
- and more likely to be correctly observed when the industry already has a cartel registered

Summary - Hyytinen et al. [2018]

- ▶ Proposes a **taxonomy of cartels**: price vs market allocation
 - ▶ pure price fixing cartels,
 - ▶ pure market allocation cartels,
 - ▶ quota cartels
 - ▶ mixed cartel type
- ▶ Shows that the type of cartel may depend on (1) whether the industry is in manufacturing sector; (2) whether demand mostly comes from retail buyers; (3) capital intensity, etc.
- ▶ Characterizes different types of cartels by (1) number of members (2) possibilities of being nationwide (3) number of main clauses, etc
- ▶ Finding 1: cartels in manufacturing sector rely more often on market allocation-based clauses, whereas in the non-manufacturing sector cartels rely more often on price-based measures (pricing in particular)
- ▶ Finding 2: cartels based on market allocation-based clauses are more stable, and less likely to readjust contract clauses

Broad Comments

In general, these papers **effectively answer the questions** that the authors pose, offering many important insights for an antitrust authority

They **provide a in-depth understanding of the Finnish industrial economy from 1955-1990** the dataset used is remarkably detailed and spans a very long period. It covers several economic sectors, and provides details on contract clauses

Exploit the institutional environment where cartels are legal to **overcome the selection bias** suffered by most preceding studies

The estimation method used in Hyytinen et al. [2017], **HMM, is innovative as well as sensible**

For policy, however, attention is needed when the techniques are applied in cartel investigation

Areas of Attention 1: External Validity

Data covers the Finnish economy between the post-WWII period and 1993. It might be the case that new technologies (e.g., algorithmic collusion), the integration of the economies at global scale and other **changes to the technological/economic environment had effects on the cartel characteristics** at sectoral level. Even though the main result of the paper would be unchanged (“cartel features are sectoral-dependent”), the external validity of some results would be harmed.

The legal nature of the cartels analyzed poses an issue in trying to generalize the result as to include all cartels, mostly with respect to actual (illegal) cartels in developed countries. These have a more limited **scope for “clauses,”** which are by definition not enforceable in any court, and are arranged taking this fact into account. Example: in the reference literature **action space often involves only price (or few other actions), but here the action space might be way larger** (go for ADR, post a bond, etc.)

Areas of Attention 2: Selection Bias

Although the legality of cartels circumvents the selection of exposed illegal cartels among all cartels, it is still suspicious of the selection of **industries that ever had a cartel (out of all industries)**. It limits its validity in uncovering cartels when there is no prior detected cartel in the industry.

In particular,

- ▶ Hyytinen et al. [2017] estimates H_1 , the probability of cartel formation, with a sample of **industries from Registry**. It means that there was a cartel in those industries in at least one period;
- ▶ similarly, in Hyytinen et al. [2018], the probabilities of having a specific type of cartel is **conditional on having a cartel**.

Areas of Attention 3: Stochastic not Deterministic

Both Hyytinen et al. [2017] and Hyytinen et al. [2018] focus on the probabilities of cartelization: providing a **direction of investigation instead of direct criterion** for detecting cartels.

For example,

- ▶ Hyytinen et al. [2017] shows that industries providing homogeneous goods are 20% more likely to initiate a cartel, thus concentrate investigative resources on homogenous product industries
- ▶ Hyytinen et al. [2018] shows that B2C industries are 16.4% more likely to have pure price fixing cartels and pure price fixing cartels are more likely to have nationwide cartels. Thus, focus on price agreements in B2C industry.

Caution needed: even **within a narrowly defined market** many types of strategies. Conley and Decarolis (2016): from subcontracts to side payments to bid rotation, in part driven by firms' size

Areas of Attention 4: Market Definition and Number of States

1. **Market Definition:** Industry data (from the Registry) different from antitrust markets
 - ▶ Suggestion: might use machine learning on contracts to identify markets
2. **Number of states:**
 - ▶ Hyytinen et al. [2017] considers only 2 states (c, n) , but “deviation” and punishment states exist in most literature models: (c, n, d, p)
 - ▶ Suggestion: look at episodes of cartels’ death (e.g., Igami and Sugaya, 2017)
 - ▶ Different but related aspect: paper classifies as cartelized an industry/year where at least one cartel is present, but if more than 1 cartel competition between associations might make the market quite competitive
 - ▶ Suggestion: expand states; offer further details on outcomes

Further Questions

There are additional questions that these data might be able to answer and that would be valuable for both policy and research:

1. **Welfare effects of cartels:** elephant in the room is assessing how detrimental (and for whom) is a cartel. This likely requires a structural analysis of demand and supply
2. **Validating screening tests:** If we take it as given your classification: how well do mean/variance screens work? What about other tests: behavioral vs structural?
3. **Cartel vs. Mergers:** In 1985 new competition law banning cartels (enacted 1998): M&A operations before the ban?
4. **Price vs. Entry:** How successful were these cartels in blocking entry of new firms? How in keeping prices high? Interesting to analyze the effectiveness of different cartel behaviors/structures, especially with partial cartels
5. **Price vs. Quality:** Were they fixing high quality? Like medieval guilds?

Minor Issues

- ▶ Why national and local cartels? Why national cartels are way more likely to do price fixing relative to market split compared to local cartels? Is that just from the size of the collusive group?
- ▶ Interesting that cartels were forbidden in tendering (procurement): can be exploited somehow?

References

- Ari Hyytinen, Frode Steen, and Otto Toivanen. Cartels uncovered. 2017.
- Ari Hyytinen, Frode Steen, and Otto Toivanen. Anatomy of cartel contracts. 2018.