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Of Course Collusion Should Be Prosecuted. But maybe...

The Case for International Antitrust Agreements

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Motivation

- ▶ Globalization has increased the importance of anticompetitive conduct in international settings.
  - ▶ National competition authorities have reacted to the increasing globalization by devoting special attention to collusive practices involving multinational companies.
  - ▶ Specifically, large foreign companies seem to be a frequent target of antitrust enforcement (Microsoft, Google, Apple).
  - ▶ The challenges associated with international antitrust enforcement have also led to proposals for increasing international cooperation among competition authorities.
- ▶ Not much literature on the interaction between national competition authorities.
- ▶ Potential benefits from cooperation between competition authorities.
- ▶ Raises the issue of the voluntary participation of Antitrust Authorities in the cooperation process.

Motivation (cont.)

- In the absence of international considerations, collusion is always detrimental to national welfare (sum of profits and consumer surplus).

- However, in an open economy, the promotion of national welfare requires considering the profits that national firms obtain abroad, while excluding the surplus of foreign consumers.

- A nationalistic bias in antitrust incentives can be recognized: *A benevolent competition authority with a mandate to maximize national welfare prefers not to enforce antitrust policies, delaying the prosecution of domestic firms even in the presence of sufficient evidence of collusion.*

- This bias becomes even more evident when we consider informational spillovers between competition authorities

Motivation (cont.)

- ▶ Welfare vs consumer surplus:
    1. Not all competition authorities are born equal. While in some countries, the mission of the competition authority is 'to protect consumers from anticompetitive practices', in other countries the mission includes other goals such as efficiency and the development of a national economy;
    2. Political Economy considerations may dictate that firms' profits are not neglected (regulatory capture);
    3. Empirical evidence shows that foreign multinational firms are a common target of antitrust prosecution;
    4. In a closed economy employing consumer surplus or total surplus usually leads to the same policy recommendation, we show that this is not necessarily the case in an open economy in which prosecution has international informational spillovers.
    5. Finally, in a multi-industry setting, we show that it is a dominant strategy to use welfare rather than consumer surplus as the standard.

The Paper

- Study the incentives of competition authorities to prosecute domestic and foreign firms involved in collusive price-setting agreements.
- Characterize the equilibrium prosecution policies and collusion decisions.
- We show that:
    1. Competition authorities might delay prosecution of domestic firms.
    2. Why? Avoid information spillovers to other competition authorities. This scenario does not maximize global welfare.
    3. An integrated competition authority can solve this problem.

Benchmark Model

<u>Firms</u>

- 2 multinational firms $i \in \{1, 2\}$, owned by country A that operate in 2 countries $j \in \{A, B\}$.

- The stage profit in country j is given by

		Firm 2	
		Col ($a^{2,j} = 1$)	Com ($a^{2,j} = 0$)
Firm 1	Col ($a^{1,j} = 1$)	$\pi^{c,j}$, $\pi^{c,j}$	0, $\pi^{d,j}$
	Com ($a^{1,j} = 0$)	$\pi^{d,j}$, 0	0, 0

- Each firm maximizes $\Pi_t^i = \mathbf{E}_t \left[\sum_{\tau=t}^{\infty} \delta^{\tau-t} \pi_\tau^i \right]$, where $\pi_t^i = \pi_t^A - f_t^A + \pi_t^B - f_t^B$ and f_t^j are fines in country j.

Benchmark Model (cont.)

Competition Authorities

- A signal $s_t^j \in \{0, 1\}$ about the behavior of firms is received with $P(s_t^j = 1) = \alpha^j$.
- Prosecution action: $p_t^j \in \{0, 1\}$ (only if $s_t^j = 1$).
- Maximizes expected discounted welfare of the country, $W_t^j = \mathbf{E}_t \left[\sum_{\tau=t}^{\infty} \delta^\tau w_\tau^j \right]$

$$w_t^A = CS_\tau^A [\text{CS in Country A}]$$
$$+ \pi_\tau^A + \pi_\tau^A [\text{PS in Country A}]$$
$$+ \pi_\tau^B - f_\tau^B [\text{Profits Firm 1 in Country B}]$$
$$+ \pi_\tau^B - f_\tau^B [\text{Profits Firm 2 in Country B}]$$
$$w_t^B = CS_\tau^B + 2f_\tau^B [\text{CS in Country B}]$$

Timing

- Timing of events within each period is as follows:
  1. Firms choose to collude or compete in each country.
  2. Signal in country A about firms in country A. Decision to prosecute or not.
  3. Signal in country B about firms in country B. Decision to prosecute or not.

One Industry

Assumption 1

The signals received by the competition authorities are:

$$s_t^A = \begin{cases} 1 \text{ with probability } \alpha^A & \text{if } a_t^{1,A} = a_t^{2,A} = 1, \\ 0 \text{ with probability } \left(1 - \alpha^A\right) & \text{if } a_t^{1,A} = a_t^{2,A} = 1, \\ 0 & \text{otherwise.} \end{cases}$$

$$s_t^B = \begin{cases} 1 & \text{if } a_t^{1,B} = a_t^{2,B} = 1 \text{ and } p_\tau^A = 1 \text{ for some } \tau \leq t, \\ 0 & \text{otherwise.} \end{cases}$$

▶ Country A can detect collusion on its own. Country B relies on A's prosecution in order to detect collusion.

One Industry

Lemma 1 (Prosecution Policy in Country B)

If the Competition Authority of B receives a signal of collusion (information spillover), then it prosecutes the companies.

- ▶ Country B's welfare only includes consumer surplus.

Lemma 2 (Prosecution Policy in Country A)

1. *If the Competition Authority of A receives a signal of collusion, then:*
   1.1 *If there is no collusion in country B, then A always prosecutes the firms.*
   1.2 *If there is collusion in country B, then A prosecutes the firms if and only if $\delta \geq \bar{\delta} = \frac{1}{\frac{\Delta W^A - 2\pi^{c,B}}{2f^B} + 1}$, and $\Delta W^A = CS^{com,A} - CS^{c,A} - 2\pi^{c,A}$* ∎

- ▶ If firms are not colluding in B, same result as Lemma 1.
- ▶ If firms are colluding in B, tradeoff between increasing domestic welfare and decreasing foreign profits and paying fines.

Proposition 1 (Global Collusion)

Suppose firms can either collude in both countries or in none of them and they coordinate in their best equilibrium.

1. *Suppose that $\bar{\delta}^1 < \delta < \bar{\delta}$, where $\bar{\delta}^1 = \frac{\pi^{d,A} + \pi^{d,B} - \pi^{c,A} - \pi^{c,B}}{\pi^{d,A} + \pi^{d,B}}$. Then, firms collude in both countries and they are never prosecuted.*

2. *Suppose that $\delta \geq \bar{\delta}$. Then, there is a threshold $\bar{\alpha}^1$ such that:*
   2.1 *If $\alpha^A \leq \bar{\alpha}^1$, then there is global collusion until the first time that firms are caught in A and prosecuted in both countries. Thereafter, there is competition.*
   2.2 *If $\alpha^A > \bar{\alpha}^1$, then there is always competition.* ∎

▶ Firms can collude in both countries and are unaffected by α^A.

One Industry

<u>Extensions</u>

- ▶ Market-specific collusion decisions:
    - ▶ Generalizes Proposition 1.1
    - ▶ Firms will decide where to collude based on the informational spillovers. Colluding only in country B avoids detection.
- ▶ Country B can detect collusion independently:
    - ▶ Value of no prosecution decreases with α^B for country A.
    - ▶ Finite prosecution delays.
- ▶ Endogeneous Detection Probabilities:
    - ▶ Ownership structure determines competition authorities effort.
        - ▶ Domestic firms that operate in foreign countries: low α
        - ▶ Foreign firms: high α

Failure to Integrate Competition Authorities

- Under independence of competition authorities it is possible to have delays in prosecution. (This does not maximize aggregate welfare of both countries)
- Under integration of competition authorities: $\Delta W_t^A < 0$, $\Delta W_t^B > 0$. (Country A will never accept it, No possibility of international agreements)
- But this might not be the case with 2 industries.

Two Industries

- 2 industries $\{X, Y\}$ in each country. 2 multinational firms in each industry.
- Country A owns firms in industry X (and B in Y).
- Both competition authorities have detection power.
- 2 scenarios:
  - (Independent CA) Each CA does not prosecute their own firms. Firms collude in both countries.
  - (Integrated CA) Integrated CA prosecutes as soon as it detects collusion. Firms collude in both countries.

- Country A obtains a lower aggregate welfare in industry X under integration ($\Delta W_0^{X,A} < 0$).
  - Why? Integrated competition authority does not delay prosecution in industry X, so Country A loses.
- On the other hand, country A obtains a higher aggregate welfare in industry Y under integration ($\Delta W_0^{Y,A} > 0$).
  - Why? Integrated competition authority does not delay prosecution in industry Y, so Country A wins.
- The welfare comparisons for country B follow the same logic, except that we must reverse the industries.
- The benefits of integration depend on $\Delta W_0^{X,A} + \Delta W_0^{Y,A}$
  - (Symmetric Case) $\Delta W_0^{X,A} + \Delta W_0^{Y,A} > 0$

- If countries commit to do not delay, same result as integration. How? Make competition authorities maximize consumer suplus rather than national welfare.
- Not straightforward
  - Best reaction for any country is to delay prosecution.
  - Suppose competition authority A only considers consumer surplus. Then, no delay in industry X and delay in Y. Worst possible scenario for country A.
  - Only possible if both countries agree to only consider consumer surplus.
- Mandate of a competition authority should not be defined independently of the mandate of the other competition authority.

Conclusion

- ▶ We present a model of antitrust enforcement in an open economy.
- ▶ We find that prosecution is not always optimal by a benevolent competition authority.
- ▶ Integration of competition authorities (in a setting with 2 industries) could solve the problem.
- ▶ Competition authorities objective should not be set up independently.
- ▶ Our results have implications for the international cooperation of competition authorities for instance in the context of the European Union.