Deterrence Effect of Competition Authorities Cartels

Luca Aguzzoni
Chief Economist Team*
European Commission DGComp

*Disclaimer: The views expressed are solely those of the presenter and cannot be regarded as stating an official position of the European Commission
Cartels and deterrence

• When firms participate in cartels?
  \[ \text{E(Gain)} > \text{E(Cost)} = p(\text{Sanction} + ...) \]

• Role for Antitrust Policy in deterrence
  – Raise expected cost

• When cartels are detected
  – Estimate direct effects (easy?)

• Indirect effects?
Compliance to Cartel Law and the Determinants of Deterrence

Rob Van der Noll

• Study determinants of compliance
  – Firms characteristics?
  – Policy instruments? -> deterrence effect

• Experimental study
  – Cartel participation decision -> taken by managers

• Survey data
• Conjoint analysis
• Econometric analysis
Compliance to Cartel Law and the Determinants of Deterrence

Rob Van der Noll

Attributes of scenarios

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Coefficient (Standard Error)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal fine (€ 1,000)</td>
<td>0.0010 (0.0002) ***</td>
</tr>
<tr>
<td>Company fine 20% or 30% of annual turnover</td>
<td>0.2566 (0.1103) **</td>
</tr>
<tr>
<td>Industry listed in NCA work plan</td>
<td>0.0488 (0.1103)</td>
</tr>
<tr>
<td>There is a leniency program</td>
<td>0.0367 (0.1126)</td>
</tr>
<tr>
<td>Publicity after infringement finding medium (NCA website and trade journals)</td>
<td>-0.0756 (0.1227)</td>
</tr>
<tr>
<td>Publicity after infringement finding high (all newspapers and TV news)</td>
<td>0.0213 (0.1452)</td>
</tr>
</tbody>
</table>

Firm-level characteristics

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Coefficient (Standard Error)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand cartel law</td>
<td>0.4864 (0.2748) *</td>
</tr>
<tr>
<td>Compliance officer</td>
<td>0.6671 (0.2345) ***</td>
</tr>
<tr>
<td>Consult lawyer</td>
<td>0.5298 (0.2444) **</td>
</tr>
<tr>
<td>Number of employees</td>
<td>-0.0002 (0.0002)</td>
</tr>
</tbody>
</table>
Compliance to Cartel Law and the Determinants of Deterrence
Rob Van der Noll

Some issues

• Reliability of surveys
  – 4.831 sent out -> 248 response
  – Variation (96 resp.)

• Private damage claim?

• Impact of leniency

• Other firm-level characteristics
  – Sectors?
  – Experience with cartels/other violations?
Estimation of indirect effect
From undeterred and detected harm...
...to an estimate of
− harm of non-detected cartels
− deterrence effect
Framework to overcome selection bias
Montecarlo simulations
Calibrated model Survey data
The Economic Impact of Cartels and Anti-Cartel Enforcement

Peter Ormosi

Estimation based on

- Population distribution of harm (calibration)
- How probability of selection varies with harm (increase?)
- Rate of detection / deterrence (monte carlo)
- Deterrence/Undeterred non detected
  - Depend on how detection varies with harm

\[ H = \frac{H^S}{\lambda + (\lambda_M - \lambda_L)(P_L - H_L) - (\lambda_M - \lambda_H)(H_H - P_H)} ]
The Economic Impact of Cartels and Anti-Cartel Enforcement

Peter Ormosi

Diagram:
- Illegal observe only: undeterred and detected
- All legal
- Undeterred and detectable
- Illegal deterred?
- Illegal undeterred and undetected?
The Economic Impact of Cartels and Anti-Cartel Enforcement

Peter Ormosi

Some issues

• Legal vs Illegal cartels
  – Sectorial/temporal/country bias
  – Stability of cartels
  – Work on a comparable sub-sample?

• Sensitivity (harm thresholds)

• Impact Leniency & Private damage claim

• Relating indirect effect as a multiple of direct effect, is it right?