Settlements in the Presence of Leniency Programs: Costs and Benefits

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1. Introduction

• Leniency programs and settlement policies are tools that antitrust authorities may use in the enforcement of laws against cartels

• Leniency programs offer reduced fines to a recipient firm that comes forward with information about cartel conduct in which the recipient was itself a participant
  • The main objective is to destabilize existing cartels and deter the formation of new cartels

• Settlement policies offer reduced fines to an alleged cartel member in later stages of a legal proceeding against a cartel
  • The main objective is to expedite judicial process and reduce legal costs
  • But the reduction in fines may have an impact on cartel stability and cartel formation
Two Strands of Relevant Literature

• An extensive literature on leniency programs

• An established literature on settlements and plea bargains
  • This literature is not specifically about cartel enforcement

• No formal analysis of the interaction between leniency programs and settlement policies
Non-technical Analyses/Discussions about Settlement Policies in Cartel Enforcement

• Notable ideas from Ascione and Motta (2008), ICN (2008), OECD (2008)
  • Main benefit of settlement policies: cost-savings for all parties involved
    • Ascione and Motta: Antitrust authorities may use the resources freed through settlements to increase the detection and prosecution of cartels
  • Possible costs/drawbacks of settlement policies
    • Settlements may reduce deterrence
    • Settlements may weaken the incentive to apply for leniency
Overview of Our Model and Results

• A game of three players: An antitrust authority (AA) and two firms
  • The AA’s objective is to minimize the occurrence of cartels
  • Policy instrument at the AA’s disposal: leniency program and settlement policy
  • Firms decide whether to collude, defect, reveal, and (where applicable) settle

• The primary finding: A well-designed settlement policy can increase the effectiveness of the AA’s cartel enforcement
  • The settlement policy reduces cartel incidence and shortens cartel lives

• The key driver of our results:
  • In the absence of a settlement, a trial does not always lead to conviction
  • A settlement acts as a guaranteed conviction, thus reducing a firm’s expected gain from forming a cartel
2. The Model

- The AA and two firms play an infinitely repeated game.
- Collusion continues to the next period only if the firms are not caught and convicted (through leniency application, settlements, or a trial).
Variables and Parameters

• The AA chooses the amount of reduced fine for a leniency applicant \((L \geq 0)\) and the amount of reduced fine under a settlement \((S_i \geq 0)\)

• Exogenous policy parameters
  • \(\alpha\): probability of the AA opening an investigation in the absence of a leniency applicant
  • \(\rho\): conditional probability of conviction if the AA proceeds to trial
  • \(F\): full fine for a cartel member

• A firm’s profit per period from production and sale: \(\pi^N, \pi^M, \pi^D\), etc.
  • Assume a firm’s discount factor is sufficiently close to 1 that collusion is sustainable in the absence of antitrust enforcement
Other Details of the Model

- The AA’s objective: minimize the occurrence of cartels
- A firm’s objective: maximize the present value of its profit stream
- Firms use trigger strategy to sustain collusion (where applicable)
- We analyze and compare two scenarios
  a) The AA does not adopt a settlement policy
  b) The AA adopts a settlement policy
3. Model Solution

Equilibrium without a settlement policy

- C/NR: collude and not reveal
Equilibrium with a Settlement Policy

- The green curve is associated with the constraint that the amount of settlement cannot be negative.
Impact of Settlement Policy

- Blue area: reduction in the collusive region
- Red area: cartel forms but with a shorter life expectancy
4. Conclusion

• We have constructed a model to study the effects of settlement policies on collusive behavior in the presence of leniency programs.

• We find that a well-designed settlement policy can reduce cartel incidence and shorten cartel lives.

• The key driver of our results is that a settlement acts as a guaranteed conviction, thus reducing a firm’s expected gain from forming a cartel.