Collusion, Firm Numbers and Asymmetries Revisited

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BACKGROUND

- A well-established result of collusion theory is that when there are a large number of firms or asymmetries among them, it is more difficult to prevent some members from deviating from the collusive agreement. Consequently, the conventional wisdom is that cartels are most likely to arise in markets with a few firms, often considered to be no more than three or four, that are relatively symmetric.
- However, mounting evidence on the features of prosecuted cartels suggests that many cartels do not seem to arise in markets that standard theory predicts. In particular, the median number of cartel members is higher and the extent of asymmetries between members can be large.
- One explanation for this puzzling evidence is that "firms in highly concentrated industries often do not need to collude explicitly, but can rely on tacit collusion or 'conscious parallelism' to achieve a near monopoly price".[1]

METHODOLOGY

- The aim of our paper is to develop a simple framework that captures the benefits and costs of explicit collusion compared with tacit collusion so we can revisit the question: under which types of market structures are cartels most likely to arise?
- We explore this issue by analysing an infinitely repeated game with asymmetrically capacity constrained firms that have the potential to make secret price cuts. We draw on our earlier work,[2] where we analysed tacit collusion in this setting and showed that firms may need to initiate costly price wars on the equilibrium path when at least one firm receives sufficiently low sales.
- In this paper, we build on our previous analysis by also modelling explicit collusion where each firm can secretly share its private information with their rivals to improve their ability to monitoring each other's actions. Consequently, explicit collusion can raise profits relative to tacit collusion by avoiding price wars, but this is illegal and runs the risk of sanctions.

KEY FINDINGS

- Consistent with the previous literature, we find that asymmetries in capacities hinder both forms of collusion.
- However, in contrast to the conventional wisdom yet consistent with the empirical evidence, firms have less incentive to form a cartel in markets with a few symmetric firms, because tacit collusion is relatively more appealing in such markets.

[1] Hay, G. and Kelley, D. (1974, p.14) "An Empirical Survey of Price Fixing Conspiracies" Journal of Law and Economics, 17(1), 13-38

[2] Garrod, L. and Olczak, M. (2016) "Collusion under Imperfect Monitoring with Asymmetric Firms," MPRA Paper No. 70647, https://mpra.ub.uni-muenchen.de/70647/

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POLICY ISSUES

- Our results question the effectiveness of structural screens that are used in practice to identify industry characteristics associated with collusion to search proactively for as yet undetected cartels. If such devices are constructed according to the conventional wisdom, then they have the potential to overlook markets where cartels are most likely to occur and where cartels cause the greatest marginal detriment to consumer surplus.
- Our results also question whether it is appropriate to base anti-cartel enforcement fines on the revenue of the cartel members, as is currently the case in Europe and the US. Instead, a fine regime that is based on damages would be more effective, as this would allow cartels that cause the greatest marginal detriment to consumer surplus to receive higher fines.

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