Duopoly Competition, Escape Dynamics and Non-cooperative Collusion

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Abstract

In this paper, we study an imperfect monitoring model of duopoly under similar settings as in Green and Porter (1984), but here firms do not know the demand parameters and learn about them over time though the price signals. We investigate how a deviation from rational expectations affects the decision making process and what kind of behavior is sustainable in equilibrium. We find that the more common information firms analyze to update their beliefs, the more room is for implicit coordination. This might propagate escapes from the Cournot-Nash Equilibrium and the formation of cartels without explicit cooperative motives. In contrast to Green and Porter (1984), our results show that in a model with learning, breakdown of a cartel happens even without a demand shock. Moreover, in this model an expected price serves as an endogenous price threshold, which triggers a price war. Finally, by investigating the durations of the cooperative and price war phases, we find that in industries with a higher Nash equilibrium output and a lower volatility of firm-specfic shocks, it is easier to maintain a cartel and harder to break it down.

Keywords: Beliefs, Escape Dynamics, Implicit Collusion, Self-Confirming Equilibrium, Learning

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