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Communication in vertical markets: Experimental evidence

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ABSTRACT

An upstream monopolist supplying competing downstream firms may fail to monopolize the market because it is unable to commit not to behave opportunistically. We build on previous experimental studies of this well-known commitment problem by introducing communication. Allowing the upstream firm to chat privately with each downstream firm reduces total offered quantity from near the Cournot level (observed in the absence of communication) halfway toward the monopoly level. Allowing all firms to chat together openly results in complete monopolization. Downstream firms obtain such a bargaining advantage from open communication that all of the gains from monopolizing the market accrue to them. A simple structural model of Nash-in-Nash bargaining fits the pattern of shifting surpluses well. Using third-party coders, unsupervised text mining, among other approaches, we uncover features of the rich chat data that are correlated with market outcomes. We conclude with a discussion of the antitrust implications of open communication in vertical markets.

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1. Introduction

Whether vertical mergers can have anticompetitive effects remains a central question in the largest antitrust cases. For example, in January 2011, the U.S. Department of Justice applied the "most intense scrutiny ever for a planned media merger" before approving the takeover of NBC Universal (an upstream content provider) by Comcast (a downstream cable distributor) subject to a list of conditions (Arango and Stelter, 2011). In April 2015, the European Competition Commission charged Google with the violation of favoring its affiliates over competitors in search displays (Kanter and Scott, 2015).

An influential strand of the theoretical literature (summarized in Rey and Tirole, 2007) connects the anticompetitive effects of vertical restraints to their ability to solve a commitment problem. An upstream monopolist serving downstream competitors might wish to offer contracts restricting output to the joint-profit maximum. It may fail to do so, however, because it has an incentive to behave opportunistically, offering one of the downstream firms a contract increasing their bilateral profits at the expense of all other downstream firms (the same logic extending to the bilateral contract with each downstream firm). In Hart and Tirole (1990), a vertical merger helps to solve this commitment problem by removing its incentive to behave opportunistically in a way that would harm the downstream unit with which it shares profits. While the upstream firm benefits from solving the commitment problem, overall the vertical merger has an anticompetitive effect on the market because prices rise and output falls. Similar anticompetitive effects can arise with vertical restraints aside from mergers including resale price maintenance (O'Brien and Shaffer, 1992; Rey and Vergé, 2004) and non-discrimination clauses (McAfee and Schwartz, 1994).

The commitment problem is a somewhat delicate theoretical proposition. Depending on downstream firms' beliefs after receiving a deviating secret contract offer—not pinned down in a perfect Bayesian equilibrium—there can be multiple equilibria, with the commitment effect arising in some and not in others (McAfee and Schwartz, 1994; Rey and Vergé, 2004). With *symmetric beliefs*, downstream firms reject deviating contracts generating negative profits for rivals because they infer that rivals received the same deviating contract. In this way, symmetric beliefs afford the upstream firm the ability to commit to monopolizing the market. With *passive beliefs*, on the other hand, deviation does not change downstream firms beliefs, increasing their willingness to accept deviating contracts, impairing the upstream firm's commitment power.

In the absence of a widely accepted refinement of perfect Bayesian equilibrium providing a firm theoretical foundation for selecting one or another equilibrium in this context, Martin et al. (2001) turned to experiments to gauge the significance of the commitment problem. In their baseline treatment in which an upstream monopolist makes secret offers of nonlinear tariffs to two downstream firms, labeled *SECRAN*, they found that markets were rarely monopolized; industry profits averaged only two thirds of the joint maximum. By contrast, markets were regularly monopolized when either the upstream monopoly