

Strategic buyers, horizontal mergers and synergies: An experimental investigation [☆]

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Abstract

This paper reports an experiment designed to evaluate interrelationships between strategic buyers, market power and merger-induced synergies. The experiment consists of 40 posted-offer quadropolies. Treatments include the use of simulated or human buyers, seller consolidations and merger-induced fixed cost and unit cost synergies. In the simulated-buyer markets we observe behavior generally consistent with comparative static predictions: prices rise post-merger, and unit (but not fixed) cost synergies may exert some price-moderating effect. The addition of powerful buyers changes results markedly. Although prices are lower in the human buyer markets, outcomes are more variable and predicted comparative static effects are no longer observed.

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1. Introduction

Most standard treatments of oligopoly behavior assume that buyers are passive, full demand-revealing agents. Although this assumption conforms well to a number of industrial contexts, in other situations buyers are often quite concentrated. Indeed, as [Inderst and Wey \(2003\)](#) observe, following the emergence of large retail chains, buyer concentration has become a critical feature of the relationship between manufacturers and retailers. Commentators have long suggested that strategic buyer behavior might affect market outcomes. The idea of countervailing power dates at least to [Galbraith \(1952\)](#), who argued that powerful buyers might offset the effects of seller market power.²

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² Empirical studies documenting the effects of countervailing power include [Lustgarten \(1975\)](#), [Chipty \(1995\)](#), and [Chipty and Snyder \(1999\)](#).

Countervailing power is particularly important for horizontal merger policy. In the last decade, *unilateral effects analysis* has become an important focus of horizontal-merger enforcement in the United States.³ Central to unilateral effects analysis is the notion that merger-related market power concerns emanate from changes in the strategic situation facing sellers. However, the pertinent models (e.g., Deneckere and Davidson, 1985; Farrell and Shapiro, 1990; Werden and Froeb, 1994) uniformly assume that buyers are passive. Powerful strategic buyers may affect importantly the predictions of such models. Not only may strategic buyers undermine seller market power both pre-merger and post-merger, they may also extract some or all of any merger-related synergies.

In antitrust investigations, consolidating parties often argue that large buyers will expropriate merger-induced cost efficiencies, and then pass these savings along to consumers in the form of lower prices. Consolidating parties make these claims even if the efficiencies involve only unavoidable fixed costs.⁴ For example, in *FTC v. Cardinal Health* (1998) and *FTC v. McKesson Corp.* (1998), the third and first largest pharmaceutical wholesalers proposed to purchase, respectively, the second and the fourth largest wholesalers. The plaintiffs argued that the consolidations would generate hundreds of millions of dollars of merger-specific fixed-cost savings, the vast bulk of which would be passed along to consumers. An important part of the respondent's case was that the relevant market included very large buyers, and that the price reductions would be extracted by powerful buyers who would not settle for less.

The effects of countervailing buyer power are not well understood either theoretically or empirically. Understandably, the *United States Department of Justice and Federal Trade Commission Horizontal Merger Guidelines* (1997) articulate no standard for identifying circumstances where buyers may be expected to counteract the anti-competitive effects of mergers. Courts in the

United States, however, have not been entirely unsympathetic to arguments that countervailing power can offset the effects of increased seller concentration. For example, in *United States v. Country Lake Foods, Inc.* (1990), the court refused to enjoin a merger where three large customers accounted for 90% of all fluid milk sales in the relevant market.⁵ Some research also suggests that other countries are more receptive to the notion that countervailing power can balance increasing seller concentration. Dobson and Waterson (1997) contend that increased concentration in the British retail industry relative to that in the United States reflects a more sanguine view in Great Britain about the ameliorative effects of countervailing buyer power.

This paper reports an experiment conducted to shed some light on the interrelationships between powerful buyers, market power, and merger-induced efficiencies. Laboratory methods present a useful way to generate insights into the effects of strategic buyers, for two reasons. First, for markets with strategic buyers, no counterpart to the standard Bertrand and Cournot models exists that is both analytically tractable, and describes the effects of withholding reasonably well. Adding strategic buyers complicates the analysis, because the potential for withholding obfuscates critical features of the underlying game, such as the price formation mechanism (bargaining, posted prices, etc.), the game's extensive form, and the appropriate information structure. Analyzing the possibility of strategic buyer withholding also requires the contemplation of repeated interactions, since foregoing purchases in one time period can only be rational if such behavior elicits more desirable prices in future periods. Experiments are a useful way to initiate theoretical research on these issues, as they have the potential to provide guidance to theorists about how such markets work.

Second, inherent data problems impede the evaluation of interrelationships between mergers, synergies and strategic buyers with naturally occurring data. In natural contexts both costs and merger-associated cost synergies are observable only indirectly. A number of factors other than cost changes or changes in the strategic context induced by the merger may drive post-merger prices. The relevant dataset may also suffer from selection bias, as antitrust authorities often challenge the very cases that are of primary interest. In the laboratory, costs and the magnitude and type of cost savings can be controlled. All consolidations are legal and both market power and countervailing buyer behavior can be observed directly.

³ In the 1992 revision of their *Horizontal Merger Guidelines* the United States Department of Justice and the Federal Trade Commission added to the traditional cooperative effects enforcement focus a unilateral effects focus.

⁴ That fixed cost savings often loom large as a component of consolidating parties' case for cognizable efficiencies is unsurprising. Although some consolidations may allow rationalization of production lines, or other changes that reduce unit production or distribution costs, overhead savings attributable to the elimination of duplicative central administrative offices represent an almost generic merger-induced efficiency. Further, given the often immense costs of reorganizing the administrative structure of a consolidating firm, administrative fixed costs are most plausibly viewed as unavoidable in any reasonable operating horizon.

⁵ Other factors important in the decision to not enjoin the merger include low entry barriers and a complete absence of brand differentiation.

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