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Quantifying the coordinated effects of partial horizontal acquisitions[☆]

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A B S T R A C T

Recent years have witnessed an increased interest, by competition agencies, in assessing the competitive effects of partial acquisitions. We propose an empirical structural methodology, which can deal with settings involving all types of owners and ownership rights, to quantify the coordinated effects of partial horizontal acquisitions on differentiated products industries, by evaluating the impact of such acquisitions on the minimum discount factors for which coordination can be sustained. We also provide an empirical application of the methodology to several acquisitions in the wet shaving industry that give rise to cross- and common-ownership structures. The results are as follows (*i*) the incentives to coordinate of the firms that the acquiring party is – pre-acquisition – able to influence are non-decreasing with any acquisition; (*ii*) the incentives to coordinate of the acquired firm are non-decreasing with acquisitions involving full or partial both financial and corporate control rights, but non-increasing with acquisitions involving full or partial solely financial rights; and (*iii*) the incentives to coordinate of the remaining firms in the industry are non-increasing with any acquisition. This implies that the coordinated effects of partial horizontal acquisitions are, in general, ambiguous, which illustrates the importance of an empirical structural methodology.

1. Introduction

Full acquisitions eliminate competition among the firms involved in the transaction. This constitutes the basic element of a merger analysis. *Partial acquisitions*, in contrast, do not completely and permanently eliminate competition among firms.

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Nevertheless, they may present – and recent empirical work confirms this – significant competitive concerns. For instance, Azar et al. (2018) examine the U.S. airline industry and find that the interlinks in the ownership of the airlines matter for how the airlines compete. Azar et al. (2016) find the same relation for the U.S. banking industry. As a consequence, competition agencies have taken an increased interest in assessing the anti-competitive effects of partial acquisitions.

Following the long theoretical literature in industrial organization, agencies have typically focused on acquisitions settings involving owners that are *internal* to the industry (rival firms), which induce a *cross-ownership* structure. Some recent examples include the UK Office of Fair Trading assessment of the BskyB's proposed acquisition of a 17.9% stake in ITV and the European Commission assessment of the News Corporation's proposed acquisition of an approximately 25% stake in Premiere.[1]

However, the phenomenal growth of private equity investment in recent years has led agencies to focus also on acquisitions settings involving owners that are *external* to the industry, but participate in more than one competitor firm, which induce a *common-ownership* structure. A recent example includes the FTC assessment of the Kinder Morgan buyout by (among others) private equity funds managed and controlled by the Carlyle Group and Riverstone Holdings LLC, which already held a significant partial ownership position in Magellan Midstream, a major competitor of Kinder Morgan.[2]

Partial acquisitions induce *unilateral* and *coordinated effects* concerns. The assessment of the former has been recently studied by Brito et al. (2014a) and Brito et al. (2018) who propose screening indicators (for phase I-type of investigations) and an empirical structural methodology (for phase II-type of investigations) to do so. This article focuses on the assessment of the latter.

The coordinated effects of partial acquisitions (as of mergers) follow from the repeated interaction among firms in the industry, an interaction that provides a structure in which an *agreed* coordinated outcome may be supported – *not by explicit negotiation, but as a tacit non-cooperative equilibrium* – under the credible threat that *deviations* from this coordinated arrangement would trigger *punishment* by rivals (e.g., a reversion to competitive behavior). In analyzing the coordinated effects of partial acquisitions, competition agencies need to evaluate whether a proposed acquisition *changes* the manner in which firms in the industry interact, increasing the strength, extent or likelihood of coordinated conduct. To do so, they need to evaluate the impact of the proposed acquisition on the three regimes of the tacit coordination model: *agreement, deviation* and *punishment*. We propose an empirical methodology to quantitatively perform this evaluation in cases of *actual* and *hypothetical* partial *horizontal* acquisitions.

The proposed methodology identifies and distinguishes acquisitions according to whether they involve solely *financial* rights or also *corporate control* rights, in the lines of O'Brien and Salop (2000), Brito et al. (2014a), Brito et al. (2014b), and Brito et al. (2018). The former refers to rights of the (partial) owner to receive the (partial) stream of profits generated by the firm from its operations and investments, while the latter refers to rights of the (partial) owner to influence the decisions of the firm's management. We need to identify and distinguish the two rights because partial horizontal acquisitions that do not result in effective control present competitive concerns distinct from those that involve effective control due to the fact that they impact the pricing incentives of the *acquired firm* differently. In order to see why, note that when a party (internal or external to the industry) acquires solely partial *financial* rights in a firm, it acquires a share of its stream of profits. This impacts the pricing incentives of the firms that the acquiring party is – pre-acquisition – able to influence, but not those of the acquired firm, which implies that it may impact the likelihood of coordinated conduct by reducing the incentive of the former to deviate from the agreement and to punish an eventual deviation (since, in both cases, they share in the losses thereby inflicted on the acquired rival). In turn, when a party (internal or external to the industry) acquires both partial *financial* and *corporate control* rights in a firm, it acquires not only a share of its stream of profits but also the ability to influence the competitive conduct of that firm. This impacts the pricing incentives of both the firms that the acquiring party is – pre-acquisition – able to influence and of the acquired firm, which implies that it may impact the likelihood of coordinated conduct by, in addition to the above, reducing the incentive of the acquired firm to cheat on or to punish the acquiring firm.

Further, the proposed methodology considers a *structural setting* where oligopolistic firms interact repeatedly over *time* (Friedman, 1971) and across *markets* (Bernheim and Whinston, 1990). Firms are modeled (*i*) as *asymmetric multi- and differentiated-product organizations* (Kuhn, 2004; Rothschild, 1999; Vasconcelos, 2005) in order to encompass real-world industry features; (*ii*) to follow *grim-trigger strategies*, the most basic enforcement mechanism to sustain a tacitly coordinated arrangement (Friedman, 1971); and (*iii*) to be run by managers, each of which is assumed to be elected in a shareholder assembly between two potential candidates who seek to obtain utility from an exogenous rent associated with corporate office (Azar, 2017; Brito et al., 2018). This structural setting implies that managers seek to maximize a weighted sum of the stream of profits of the firms in the industry, where the weights depend on the financial and corporate control rights of (external) owners in the different firms and in which corporate control is endogenously measured by the normalized Banzhaf (1965) power index.

Finally, the proposed methodology incorporates the above structural setting into the steps identified by Davis (2006) and Davis and Huse (2010) to evaluate the impact of the proposed acquisitions on the three regimes of the tacit coordination model. First, we estimate consumer demand and assess the degree of substitutability among the competing products in

[1] Please see OFT case number ME/2811/06 for the former and European Commission case number COMP/M.5121 for the latter.

[2] Please see FTC matter/file number 0610197.