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Privatizing by merger: The case of an inefficient public leader

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ABSTRACT

We compare a merger between an inefficient public leader and an efficient follower with unilateral privatization of the public leader (both eliminate the inefficiency of the leader). We identify the circumstances in which the merger increases both welfare and private profit and, for the first time, show that partial privatization by merger often dominates the unilateral privatization despite the loss of a competitor. Recognizing this helps define the extent of partial privatization by merger that should actually be observed and also suggests that more policy emphasis should be placed on privatization by merger.

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1. Introduction

At least since Merrill and Schneider (1966) the presence of a public firm has been seen as potentially regulating market power. A state-owned firm maximizing welfare produces more than an otherwise equal private firm, thereby lowering prices and increasing welfare. Yet, because it faces less competitive pressure and has a different objective function, the public firm may be less productively efficient than its private sector counterparts (Shleifer & Vishny, 1994). These offsetting traits leave the influence of privatizing a public firm in doubt and have made this influence one of the most studied issues in the literature on mixed oligopolies.[1] Yet, relatively little of this literature considers the process of privatization through merger despite the fact that such mergers are both common in practice and provide intriguing economic issues.

Many countries retain large sectors of publically owned firms (Bortolotti, Fantini, & Siniscalco, 2004) and increasingly these firms are being partially or fully privatized through mergers. Indeed, the sale of Chinese state-owned enterprises by merger has become so common that currently entire legal firms specialize in these sales as was also the case during the transition in Eastern Europe.[2] Yet, such mergers are not unique to transition economies. Europe has seen recent mergers in airlines, banks and autos that involve private firms and publically owned, or partially publically owned, firms (see Artz, Heywood, & McGinty, 2009).

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[1] This emphasis is clear from the early review by DeFraja and Delbono (1990), the more than 150 citations to the seminal article by Matsumura (1998) and from the many recent articles on the subject (see the review in Heywood & Ye, 2009).

[2] For more on these law firms in China see http://www.jtnfa.com/practices.aspx?PageID=12 and in Romania see http://www.musat.ro/expertise/2/Mergers-Acquisitions-Privatisation.html

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Among the more controversial North American cases was the sale of the public Canadian aerospace firm de Havilland to its rival Boeing in 1986. Even within the United States, Iceweb Inc. a leading private provider of network infrastructure solutions acquired the federal government business operations of True North Solutions Inc. in 2006. These mergers routinely decrease or eliminate the share of public ownership in the newly merged firm.[3]

The finance literature typically documents a decline in the returns to rivals following privatization by means other than merger, suggesting that the public firm becomes an increasingly efficient private rival (Megginson, 2005; Otchere, 2007; Otchere & Chan, 2003). Yet, when privatization is by merger the productive efficiency gain can be offset by increased market concentration and by the loss of a welfare maximizing public firm. Thus, in their study of public Turkish cement firms bought by private rivals, Altintig, Ayca, Arin, Feess, and Schumacher (2009) show that the returns to rivals actually increased as a result of the privatizing merger suggesting the dominance of the concentration influence. As even this brief review suggests, the consequences of privatization by merger remain in doubt both theoretically and empirically and deserve more study.

This paper examines the privatization of an inefficient public leader via a merger with an efficient private follower under the assumption of linear costs. It then compares such a merger with unilateral privatization of the public leader. The use of linear costs allows us to put aside one of the primary theoretical motives for both partial privatization and merger. The asymmetric marginal costs generated by the public firm's greater output represent inefficiency and Matsumura (1998) proves that with increasing marginal cost there always exists an optimal degree of unilateral partial privatization. At the same time it is well recognized that the presence of increasing marginal costs provides private firms a motive for merger as they can decrease output and efficiently spread this decrease across two plants (Heywood & McGinty, 2007; Perry & Porter, 1985). As partial privatization by itself can increase welfare, and as merger by itself can increase profit, it may not be surprising that partial privatization by merger has been shown to increase welfare and profit when assuming increasing marginal costs (Artz et al., 2009; Mendez-Naya, 2008; Nakamura & Inoue, 2007).[4] Thus, we adopt linear costs and, critically, compare the case of privatization by merger with that of unilateral privatization of the public firm.

Our alternative assumption of linear costs builds from work on the merger paradox in private markets. Huck, Konrad, and Müller (2001) show that merger between an equally efficient private leader and follower can increase their joint profit but that the excluded followers benefit more than merging firms (a critical part of the merger paradox). Gelves (2010) builds on this setting by showing that if the private leader is sufficiently inefficient and becomes efficient by merger, not only do the merging firms profit but the excluded followers need not benefit more than the merging firms.[5] This consequence for excluded rivals is critical for confirming the incentive for merger (Salant, Switzer, & Reynolds, 1983). We take this logic to the mixed oligopoly showing that privatization by merger is viable for the participants, welfare increasing and preferred to the alternative of being excluded from the merger. In addition to being the first to examine this particular context, we are unique in demonstrating that privatization by merger can enhance welfare by more than does unilateral full privatization that also eliminates the inefficiency. This reflects the fact that the welfare reduction associated with the loss of a firm because of the merger can be outweighed by retaining a weight for welfare in the objective function of the newly merged firm. Again, we emphasize that focusing on this tradeoff is unique to our paper.[6]

The assumption that merger and the resulting partial private share enhance efficiency deserves a defense. It can follow either because the private follower has superior production technology which it transfers to the previously public firm (Gelves, 2010, Oliveira, Roth, & Ponte, 2003) or because monitoring of managers is improved. The former has been an explicit objective for several of China's state owned enterprises (Price, Brightbill, Weld, & Nance, 2007). The latter may result because of improved incentives and information resulting from the creation of a stock price that provides information about manager performance (see Laffont & Tirole, 1993 for a theoretical treatment and Gupta, 2005 for empirical evidence).

The paper proceeds as follows: Section 2 introduces the model and sets out the pre and post-merger equilibrium. Section 3 evaluates the merger by showing that there is always a range of ownership shares that generates an incentive to merge and by providing illustrations. Section 4 emphasizes that there is no free rider problem for these mergers as so often exists in other merger contexts. It also shows that the merger can actually hurt excluded rivals. Section 5 shows that a range of the ownership shares identified as supporting merger can, under limited circumstances, actually increase welfare more than does simple unilateral privatization of the public leader without merger. Section 6 concludes.

2. Setting the stage: the pre and post- merger equilibrium

As our purpose is to show when an endogenous merger will take place, we compare the equilibrium in a model before merger to the equilibrium after merger. Only when both the public and private firms emerge better off after the merger can we anticipate

[3] Wang and Chen (2011) show how privatization could also arise by simply having foreign presence in domestic markets. They show that in such a case the public firm should increase the degree of privatization along with the domestic ownership of multinational firms. As a consequence, Haller (2009) suggests that this presence ultimately leads to an increase in total investment at expense of domestic investment.

[4] Bàrcena-Ruiz and Garzon (2003) study a duopoly with differentiated products and imagine a merger in which the private firm receives an exogenously given degree of ownership in the previously public firm. They emphasize that merger is more likely when the two firms' goods are poor substitutes. They do not consider the more traditional market with many firms producing identical products, nor do they focus on the incentive issues associated with the merger paradox.

[5] This represents an application of Farrell and Shapiro (1990) who demonstrate that rivals can be hurt only if a merger generates a large enough cost saving.

[6] Thus, our emphasis on the consequences for excluded rivals, our comparison with privatization without merger and our explicit comparison to otherwise equal private sector mergers separate our work from that of Kamijo and Nakamura (2009), Artz et al. (2009) and Gelves (2010).