Merger control and endogenous information provision: When being tough may become a weakness

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Abstract

Merger control relies on costly evidence provision to screen submitted merger projects. We model the enforcement of merger policy as a confrontation of evidence between the agency and the merging firms, and examine the opportunity of a tougher stand against mergers. We show that a stricter merger enforcement can increase the probability to block anticompetitive

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mergers but also impact the evidence production. This may undermine the effectiveness of merger control.

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1 Introduction

Enforcement of merger control plays a critical role for the overall effectiveness of antitrust (Baker et al. 2018). Agencies can typically screen pro-/anticompetitive deals by undertaking a thorough assessment of how the submitted merger is likely to affect market competition. Although agencies still rely on market definition and market shares for their horizontal merger assessment, they have recently added more complex and thus debatable methods focused on firms' conduct (such as UPP or merger simulations for instance). This weakening of the structural approach has arguably led to a more lenient merger enforcement in the US (Shapiro 2019, or Hovenkamp and Shapiro 2018). In this paper we develop a theoretical model to discuss the opportunity for a competition agency to take a tougher or a more lenient stand against mergers, by considering the amount of information that is provided and used to screen the submitted merger projects.

Merger control is effective when pro-competitive mergers are cleared while anti-competitive mergers are banned. The outcome of merger control clearly hinges on both the deterrence of anticompetitive merger projects and the evidence provided by both the insiders and the antitrust agency. A tougher stand against mergers will directly impact the population of actually submitted mergers, as well as the evidence produced upon assessment. Several contributions examined the design of institutional features that may impact the severity of merger control, such as the pro-consumer bias in the approval criterion (Besanko and Spulber, 1993), the ex post assessment of mergers instead of the typical ex ante proceedings (Ottaviani and Wickelgren, 2012), or even the evidentiary requirement to show the merger will lessen future competition (Shapiro, 2019). This paper complements the existing literature by framing the merger assessment process as a confrontation of evidence between the insiders and the agency,[1] and discusses the opportunity of a stricter merger control against this background. For this, we develop a streamlined model where a tougher stand against mergers improves the ability of the agency to block anticompetitive merger projects, but also provides weaker incentives for insiders to invest in evidence provision. We label this the informational effect of a stricter merger control, and show it may be welfare-reducing when the lower evidence production counterbalances the higher probability to block the merger. This allows us to identify the situations where a stricter merger control actually improves the efficiency of the merger assessment.

[1] Lagerlöf and Heidhues (2005) also consider investment in evidence provision, but by the merging firms only. They do not deal with the severity of merger control either.

2 The model

Consider a reduced-form merger control game between two risk-neutral agents: the merging firms and the competition authority (CA). All merger projects enhance market power and thus have anticompetitive effects, but may also generate a pro-competitive effect[2], denoted e. We consider two merger types: $e = \underline{e}$ and $e = \overline{e}$. The prior probabilities for each type are $p(\underline{e}) = p$ and $p(\overline{e}) = 1 - p$ respectively. Denote $\pi(e)$ the profit gain from merger for type e, with $\pi(\overline{e}) > \pi(\underline{e}) > 0$. Denote $W(e)$ the change in total surplus due to a merger of type e: $W(e)$ is increasing with e and let $W(\underline{e}) < 0 < W(\overline{e})$ to avoid trivial cases. Finally, let the expected effect of the merger be negative: $pW(\underline{e}) + (1 - p)W(\overline{e}) < 0$. Neither the merging firms nor the CA know the true type of the merger. The objective of the merger control is to identify the good merger type.

We frame the merger assessment process as a confrontation of evidence between the CA and the insiders, which may lead to errors because parties find and provide more or less convincing evidence.

To challenge the merger, the CA needs to prove its anticompetitive effects. Denote x the cost of evidence provision for the agency: x is distributed on $[0, +\infty[$

[2]Typically, cost savings or a quality increase due to synergies.

according to the cdf $G(x)$.

In order for the insiders to secure the merger approval if the CA makes a challenge, they need to provide in response enough evidence on the merger's pro-competitive effect. We denote by c the monetary investment in information provision. This comprises both a direct, evidence production expenditure, and an opportunity cost, the latter due to the delay that the firms incur when they are subjected to the lengthy merger assessment and which will prevent them from engaging in alternative projects.[3]

An investment c in evidence provision by type e merger leads to a clearing probability of $q(e, c, a)$ if the CA decides to challenge the merger. The parameter a captures the ability of the agency to challenge effectively a merger, which we interpret as the severity of its intervention. Various institutional features of merger control may impact its severity: the weight placed on consumers' surplus within the welfare standard applied by the agency[4], the evidentiary requirement to show that the merger will lessen future competition,or even the timing of the assessment (since after consummation, better or cheaper evidence may be available to prove the

[3]Merger projects may be abandoned in anticipation of an active merger control - see for instance Ormosi (2012).

[4]For a given level of efficiency gains, the stronger the focus on consumers' surplus, the lower the level of consumers' surplus loss that is required for the merger to be found anticompetitive.

anticompetitive outcome of the merger). Thus, we assume that:

(A1) $0 < q(\underline{e}, c, a) < q(\overline{e}, c, a) < 1$,

(A2) $\frac{\partial q(e,c,a)}{\partial c} > 0$, $\frac{\partial^2 q(e,c,a)}{\partial a \partial c} < 0$, and $\frac{\partial^2 q(e,c,a)}{\partial c^2} < 0$,

(A3) $\frac{\partial q(e,c,a)}{\partial a} < 0$ and $\frac{\partial^2 q(e,c,a)}{\partial a \partial e} > 0$.

Assumption (A1) ensures that a bad merger type has a lower probability to be cleared than a good merger type. Assumptions (A2) ensure that a higher investment in evidence provision has an increasing but concave impact on the clearing probability, such that the tougher the merger control, the lower the marginal effect of information provision. Assumptions (A3) state that a tougher merger control makes it easier to ban a merger, but more so for the bad merger type as compared with the good merger type.

Finally, the merger is considered cleared if not challenged by the CA.

Given this framework we assess the opportunity to increase the severity of merger control. To formalize the argument we consider the following timing for the evidence production game between the agency and the insiders:

Stage 1: the CA observes its challenge cost x and decides whether to challenge the submitted merger.

Stage 2: if the merger is challenged, the merging firms decide the investment in evidence provision c.

The agency makes its decision maximizing the resulting expected given the cost of challenging a merger. We determine next the Subgame Perfect Equilibrium (SPE) of this game.

At stage 2, if the merger is challenged, the investment in evidence provision, denoted by $\widehat{c}(a)$, satisfies $\sum_e \frac{\partial q(e,\widehat{c}(a),a)}{\partial c} p(e)\pi(e) = 1$. The level $\widehat{c}(a)$ decreases in a : the stricter the merger control, the less willing the firms are to incur the costly assessment process in order to avoid merger prohibition. Note that the expected merger profitability, $p(e)\pi(e)$, amplifies the negative marginal impact of tougher merger control, given by $\widehat{c}'(a)$.

At stage 1, given the cost of evidence provision, the agency will control mergers only if it is worth doing so. Since the CA expects insiders to invest $\widehat{c}(a)$, it will challenge their merger iff $\sum_e q(\widehat{c}(a), e, a)p(e)W(e) - x \geq \sum_e p(e)W(e)$.

We denote $x^{mc}(a)$ the merger control cost threshold below which the CA challenges the merger. The SPE is characterized by the investment in evidence provision and the challenge decision by the CA.

We examine next the impact of increased merger control severity on the decision to challenge the merger. In this respect it holds that:

$$dx^{mc}(a) = \left[\underbrace{\sum_e \frac{\partial q(\widehat{c}(a), e, a)}{\partial a} p(e) W(e)}_{\text{Direct effect } >0} + \underbrace{\widehat{c}'(a) \sum_e \frac{\partial q(\widehat{c}(a), e, a)}{\partial c} p(e) W(e)}_{\text{Informational effect}} \right] da.$$

A stricter merger control has a double impact:

First, it has a direct impact on the probability to block the merger. This is the direct effect of a higher a. Clearly, the size of this direct effect varies according to the merger type e. However, since the merger is anticompetitive on average, the higher probability of a ban increases the CA's incentives to challenge the merger.

The second effect is informational: a tougher merger enforcement provides firms with lower incentives to provide evidence (since $\widehat{c}'(a) < 0$). This effect is welfare-decreasing iff $\sum_e \frac{\partial q(\widehat{c}(a), e, a)}{\partial c} p(e) W(e) > 0$. If this condition is satisfied, then the lower investment in information resulting from a stricter merger control will reduce welfare. This is the case iff:

$$\frac{\partial q(\widehat{c}(a), \overline{e}, a)}{\partial c} > \left[\frac{-pW(\underline{e})}{(1-p)W(\overline{e})} \right] \frac{\partial q(\widehat{c}(a), \underline{e}, a)}{\partial c}. \tag{I}$$

Condition (I) ensures that when the merging firms provide more evidence to support their merger, the CA is still able to block the bad merger type with a sufficiently high probability to make sure that the higher amount of evidence provided is actually welfare-increasing. We say that *evidence confrontation is efficient* in this case. Note that this condition relates the marginal impact of increased evidence provision on the probability to clear the merger to the welfare outcome of the merger. In particular, to satisfy condition (I), the higher the anticompetitive impact of the merger, i.e. $p(e)W(\underline{e})$, the higher must be the increase in the clearing probability of the procompetitive merger. In addition to its mere sign, the size of the informational effect is also based on $\widehat{c}'(a)$, which actually depends on the expected profitability of the merger: a highly profitable merger will inflate the informational effect. This implies that if the informational effect is positive, due to the efficient confrontation of evidence, it may dominate the direct effect and thereby lead to fewer merger challenges when merger control becomes stricter. The intuition is straightforward: less information is being provided, which makes merger screening less efficient, thus leading the CA to challenge less. Instead, if the confrontation of evidence is not efficient, a tougher merger control always increases the probability to challenge a merger.

The final impact of a tougher merger control depends of course on how parameter a affects the expected welfare in equilibrium. The \$latter\$ is equal to:

$$EW(a) =$$

$$\left[\int_0^{x^{mc}(a)} \sum_e q(\widehat{c}(a), e, a)p(e)W(e) - xg(x)dx\right] + (1 - G(x^{mc}(a))). \sum_e p(e)W(e).$$

Therefore a stricter merger enforcement has a marginal welfare effect of:

$$G(x^{mc}(a))\left[\underbrace{\sum_e (q(\widehat{c}(a),e)-1)p(e)W(e)}_{\text{Direct effect, }>0} + \underbrace{\widehat{c}'(a)\sum_e \frac{\partial q(\widehat{c}(a),e,a)}{\partial c}p(e)W(e)}_{\text{Informational effect}}\right].$$

Increased severity a affects both the probability to block the merger (the direct effect) and the merging firms' decision to invest in evidence provision (the informational effect). The direct effect is always positive: a tougher merger control increases the probability to block the merger. This implies that the direct effect is welfare-improving, since the merger project is anticompetitive on average. However, and as we shown before, the stricter merger enforcement also reduces the investment in evidence provision. The resulting lower amount of information available may decrease the accuracy of merger control. If the confrontation of evidence is efficient, and the merger is highly profitable, then a stricter merger assessment has a countervailing effect: by reducing the amount of information, it actually undermines the efficiency of screening. This occurs when the informational effect is negative and dominates the positive direct effect, so that $\frac{dx^{mc}}{da} < 0$. Instead, if the confrontation of evidence is not efficient, a stricter merger control will always increase expected welfare.

To sum up, the opportunity to enforce a stricter merger control hinges on the interplay of these two welfare effects. The first is the direct effect on the agency's conduct: a tougher CA will challenge more anticompetitive mergers. This is welfare-increasing. The second is the informational effect, which is either welfare-decreasing or welfare-increasing, depending on the marginal impact of a higher investment in evidence provision on the ability to screen anticompetitive mergers. As long as the lower evidence production does not counterbalance the higher probability to block the merger, a stricter merger control will be welfare-improving.

3 Conclusion

This paper discussed the opportunity for the competition agency to take a tougher stand on mergers. This may involve an ex post control, a pro-consumer bias in the approval criterion or a lower evidentiary standard to prevent a future lessening of competition. We frame merger control as a confrontation of evidence between the agency and the merging firms, and assess the opportunity of a stricter merger screening. A tougher stand against mergers will induce a higher probability to block mergers, but will also push firms to invest less in evidence provision. This may undermine the effectiveness of merger control by making more difficult the screening of mergers.

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