Do *Vertical* Partial Ownership Interest Acquisitions Create a Potential for Input Foreclosure?

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1. Introduction

Input foreclosure of downstream rivals through increasing these rivals' cost is one of the main antitrust concerns that vertical mergers can raise.[1] Economists have developed quantitative tools for assessing the potential for input foreclosure in the case of full vertical mergers, among which the vertical Gross Upward Pricing Pressure Indices (*vGUPPIs*) framework is one of the more sophisticated techniques used by antitrust practitioners in the case of differentiated product markets.[2] However, many firms have been choosing sourcing strategies that require partial vertical integration, which can be achieved through acquiring partial ownership interest in their suppliers (i.e., vertical partial ownership acquisition). This raises the concern that their non-integrated rivals may be refused access to the target supplier's products or obtain these products at disadvantageous terms.[3] Therefore, antitrust authorities have also started looking more closely into these types of acquisitions by arguing that vertical partial ownership acquisitions may raise competitive concerns of input foreclosure which, under certain conditions, may even be larger than those that may arise in the context of a full vertical merger.[4]

Despite the practical and policy relevance of this phenomenon, the economics literature does not have yet a readily available tool that antitrust practitioners can turn to score incentives for input foreclosure in the context of vertical partial ownership acquisitions in differentiated product markets. To address this gap in the literature, in this article, I show how the central economic intuition of the *vGUPPIs* framework can be adapted, similar to the modified GUPPIs (*mGUPPIs*) framework,[5] to examine incentives to raise rivals' costs in the context of vertical partial ownership interest acquisitions and, in particular, to formulate the argument that such incentives:

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[1] The US Department of Justice and Federal Trade Commission, *Vertical Merger Guidelines,* (2020) [hereinafter US-VMG (2020)], *available at* https://www.ftc.gov/system/files/documents/reports/us-department-justice-federal-trade-commission-vertical-merger-guidelines/vertical_merger_guidelines_6-30-20.pdf dedicates an entire section § 4.a to this topic, and have recently raised such concerns such as while challenging the AT&T/Time Warner merger a few years ago, *available at* https://www.justice.gov/atr/case-document/file/1085516/download, or seeking to block the Microsoft/Activision Blizzard proposed merger, see complaint issued by the FTC on December 8, 2022 *available at* https://www.ftc.gov/system/files/ftc_gov/pdf/D09412MicrosoftActivisionAdministrativeComplaintPublicVersionFinal.pdf . For other examples see, for instance, Steven C. Salop and Daniel P. Culley, *Vertical Merger Enforcement Actions: 1994–April 2020*, Georgetown Law Faculty Publications and Other Works, 1529 (2020) and Michael H. Riordan and Steven C. Salop, *Evaluating Vertical Mergers: A Post-Chicago Approach*, Antitrust Law Journal, 63, 513-568 (1995).

[2] Serge Moresi and Steven C. Salop, *vGUPPI: Scoring Unilateral Pricing Incentives in Vertical Mergers*, Antitrust Law Journal, Vol. 79, No. 1 (2013) [hereinafter Moresi and Salop (2013)].

[3] For example, the acquisition by News Corp., an owner of TV stations and programming networks, of a 34% stake in Hughes Electronics Corporation which gave it control over DIRECTV Holdings LLC, a direct broadcast satellite service provider. For other examples see European Commission Staff Working Document, *Towards More Effective EU Merger Control*, SWD(2013)239 [hereinafter EC (2013)], *available at* https://ec.europa.eu/transparency/documents-register/detail?ref=SWD(2013)239&lang=en, Part 3/3; *Vertical Shareholding*, Harvard Law Review, (2019), *available at* https://harvardlawreview.org/2019/12/vertical-shareholding/; Nadav Levy, Yossi Spiegel, and David Gilo, *Partial Vertical Integration, Ownership Structure, and Foreclosure*, American Economic Journal: Microeconomics, 10, 132-180 (2018) [hereinafter Levy et al. (2018)].

[4] The US-VMG (2020) categorized "the acquisition of a partial ownership interest … *relevant to the evaluation* of the competitive effects of vertical mergers" (emphasis added). The public comments requested on the withdrawn US-VMG (2020) continued highlighting the same; see, for instance, comments by Serge Moresi and Steven C. Salop, *Quantifying the Increase in "Effective Concentration" from Vertical Mergers that Raise Input Foreclosure Concerns: Comment on the Draft Vertical Merger Guidelines*, (2020), *available at* https://media.justice.gov/vod/atr/comments-draft-vmg/dvmg-0018.pdf. Similarly, the EC has argued that non-horizontal acquisitions of minority shareholdings may raise input foreclosure concerns which may be even more significant than those in the case of a full vertical mergers; for more details, see EC (2013), Part 2/3.

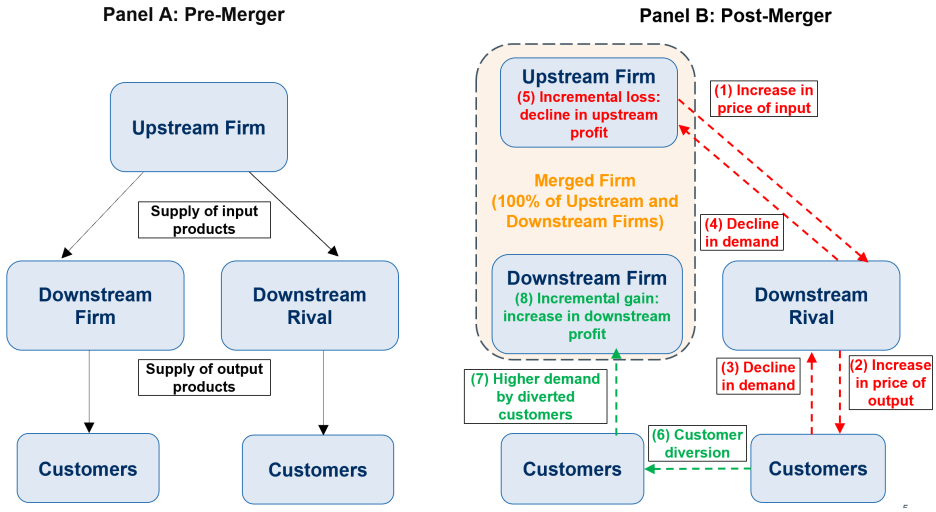
[5] The modified GUPPIs framework is used by antitrust practitioners for scoring unilateral pricing incentives that may arise in the context of horizontal partial ownership interest acquisitions. These are acquisitions of non-controlling or controlling stakes in rivals or investments in joint ventures in the same market. For more details see, for instance, Andrea Asoni and Yianis Sarafidis, *Economic Tools for Gauging the Competitive Effects of Partial Acquisitions in the Energy Sector*, ABA Section of Antitrust Law, Transportation, Energy & Antitrust, Summer 2017 Issue, 15-22; Daniel P. O'Brien and Steven C. Salop, *Competitive Effects of Partial Ownership: Financial Interest and Corporate Control*, Antitrust Law Journal, 67, 559-614 (2000), [hereinafter O'Brien and Salop (2000)].

(i) may only arise if this acquisition provides the acquiring firm control over the target supplier's prices; *(ii)* are more likely to arise when the smaller is the financial interest that the acquiring firm obtains through the acquisition in the target supplier in addition to the control over this target's prices; and, *(iii)* are the most likely to arise if the acquiring firm obtains control over the target supplier's prices without any financial interest in this target.

2. Full Vertical Mergers: A Brief Recap of Scoring Incentives for Input Foreclosure through Raising Rival's Cost

A full vertical merger may create unilateral incentives for the merged entity to engage in a strategy of foreclosing the downstream merging party's rival through increasing the price of the input products this rival buys from the upstream merging firm. In the *vGUPPIs* framework, these incentives are scored by the *vGUPPIu* which captures the key economic trade-off faced by the merged firm when considering an increase in the upstream merging firm's price charged post-acquisition to the downstream rival: the incremental gains versus incremental losses to the merged firm of such a price increase.[6] To illustrate this, I consider two firms: an upstream supplier that sells input products to a non-integrated firm in the downstream market, as shown below in Panel A of Figure 1. A full vertical merger between these two firms, as illustrated in Panel B of Figure 1, consists of the downstream firm acquiring 100% of the shares of this upstream supplier and gaining control over the pricing decisions of this supplier, thus becoming a fully vertically integrated entity post-merger. In the context of this full vertical merger, a higher price charged by the upstream merging firm to a rival of the downstream merging firm will increase the cost of this rival. Once passed into the rival's output prices, this may induce some of its customers to switch to the downstream merging firm, as illustrated below in Panel B of Figure 1.

Figure 1 Full Vertical Merger



This diversion of customers will be reflected in a lower demand for the output product of the downstream rival which thus will demand less of the upstream merging firm's input products. Consequently, the upstream merging firm will experience an *incremental loss* equivalent to the reduction in its profit associated with this decline in the demand for its input product. However, to the extent that the downstream merging party recaptures some of the rival's diverted customers, it also experiences an increase in the demand for its output product and thus an *incremental gain* equivalent to the increase in profit associated with this higher demand. Therefore, the merged entity may have the incentive to engage in a strategy of raising the rival's costs if the incremental gains from such a strategy are higher than the incremental losses. The *vGUPPIu* captures this trade-off faced by the merged entity, and it is calculated as the ratio between the merged entity's incremental gains and incremental losses from raising the price of the input product to a downstream rival. Thus, a higher incremental gain relative to the incremental loss will result in a higher *vGUPPIu* indicating a higher likelihood that incentives to engage in a strategy of raising the rival's costs may arise post-merger.

[6] See Moresi and Salop (2013).

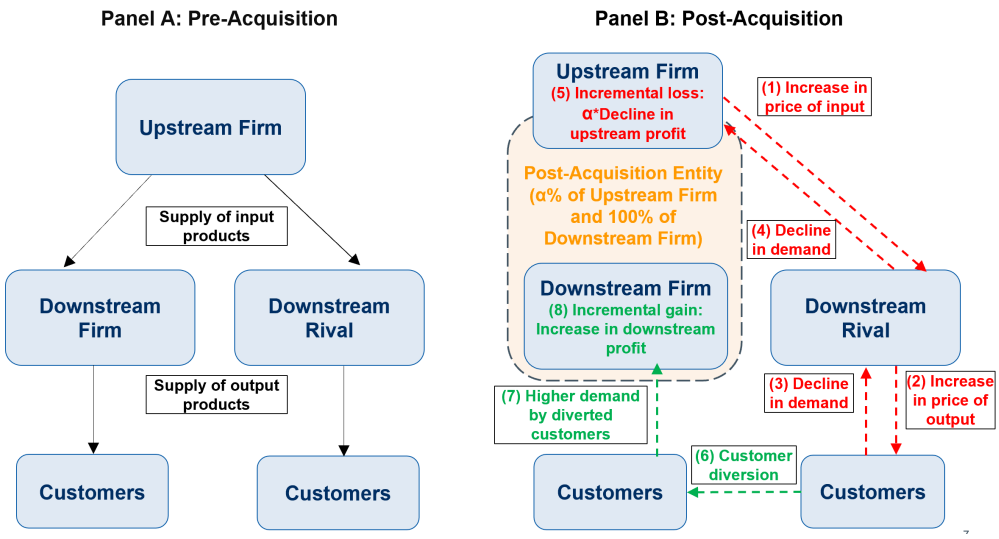
3. Vertical Partial Ownership Interest Acquisitions: Ability to Raise Rival's Costs May Only Arise If the Acquiring Firm Obtains Control Over the Target Supplier Prices Post-Acquisition

An acquisition of partial ownership interest by a downstream firm in its upstream supplier may only create ability to raise the rival's cost (and thus foreclosing the acquiring firm's downstream rival) if this acquisition conveys the right to the acquiring firm to control the target supplier's input product prices sold to this rival. In this case, there exists a non-zero *vGUPPIu* which can be used by antitrust practitioners to score these incentives. Moreover, under such circumstances, these incentives are more likely to arise than those under a full merger.

The economics literature studying the competitive effects of partial ownership interest acquisitions distinguishes two factors which drive the competitive effects of these types of acquisitions: financial interest and corporate control.[7] On the one hand, the financial interest obtained by the acquiring firm in the target firm through the acquisition of a partial ownership interest conveys to the acquiring firm entitlement to a certain fraction of the profit of the target firm post-acquisition. On the other hand, corporate control consists of any right of the acquiring firm to influence the target firm's post-acquisition operational decisions, such as setting prices, which thus can potentially have an impact on competition. By making the same distinction between financial interest and corporate control, I expand upon the example introduced in the previous section to illustrate how the core economic intuition underlying the *vGUPPIu* can be used for inference about incentives for input foreclosure through raising a rival's costs in the context of vertical partial ownership acquisitions.

An acquisition of financial interest without corporate control by a downstream firm in its upstream supplier entitles the acquiring firm to less than 100% of the target firm's profit but it does not provide any right to the acquiring firm to control this target's post-acquisition price setting. Therefore, given that the acquiring firm cannot influence what prices the upstream target firm sets for the input products sold to its downstream rival post-acquisition, the acquiring firm has no ability to raise these rival's costs and thus *vGUPPIu* implied by such acquisition is zero. However, this is not the case in the context of a partial ownership acquisition with corporate control that provides the acquiring firm the right to control the target firm's prices as explained through the following example.

Figure 2 Vertical Partial Ownership Acquisition: Financial Interest with Corporate Control



If a partial ownership acquisition consists, for example, of a financial interest of α% (which is less than 100%) in the target upstream supplier combined with full control over the target's prices, then this acquisition conveys the acquiring firm not only a right to α% of the target firm's profit but also the right to set the prices of input products the target sells to firms in the downstream market. Thus, the downstream acquiring firm may have the incentive to engage in foreclosing its downstream rival by increasing the price of the input product sold by the upstream target to this rival. Like in the full merger example presented in the previous section, such a price

[7] See, for instance, O'Brien and Salop (2000) or Levy et al (2018).

increase will raise the cost and thus output product prices of the rival. In turn, the rival may experience a decline in the demand for its output as some of its customers switch to the downstream acquiring firm, as illustrated above in Panel B of Figure 2. Consequently, the downstream rival will demand less of the input product of the upstream merging firm, which will experience a reduction in its profit associated with the decline in the demand for its input product. However, given its post-acquisition financial interest in the target, the acquiring firm will only bear α% of this decline in the upstream profit. Therefore, *the incremental loss to the acquiring firm from raising a rival's cost following the acquisition of a financial interest in its upstream supplier will be less than the incremental loss from a similar price increase under a full vertical merger* (i.e., only α% of the incremental loss under the full vertical merger). Moreover, in the limiting case, when the acquiring firm does not obtain any financial interest in the target supplier (i.e., α is zero) but it obtains full control over this target's prices, then it will bear none of the incremental losses that may result from a raising a rival's cost strategy.

As the downstream acquiring firm recaptures some of the rival's diverted customers, it may experience an increase in the demand for its output product and thus an increase in its profit. This incremental profit will be fully captured by the acquiring firm and is thus the *same as the incremental gain under a full vertical merger*. Therefore, when acquiring a financial interest in a target supplier with full control, the acquiring firm obtains the same incremental gains but incurs lower incremental losses from a strategy of raising a rival's costs than it would under a full vertical merger.[8] As a result, the incentive to engage in such a strategy is more pronounced than under a full vertical merger.

This is also reflected by a higher *vGUPPIu* implied by the acquisition of an α% financial interest in the upstream supplier than the *vGUPPIu* implied by a full vertical merger. Since the latter is the ratio between the merged entity's incremental gain and incremental loss from raising the price of the input product to the downstream rival, an input product price increase in the context of partial ownership acquisition that results in the same incremental gain but only α% of the incremental loss to the acquiring firm implies a *vGUPPIu* that equals the full merger *vGUPPIu* divided by α%. Moreover, the lower the financial interest obtained by the acquiring firm (i.e., the lower α% is) the higher the *vGUPPIu* associated with this partial ownership acquisition is, indicating a higher likelihood that incentives to raise a rival's costs will arise (other things being equal). The intuition is that for a lower financial interest, the acquiring firm incurs a lower fraction of the incremental loss resulting from the increase of the upstream input price to the downstream rival while still enjoying the entire incremental gain from such a price increase. Finally, the *vGUPPIu* is the largest when the acquiring firm obtains through the acquisition full control over the target supplier's prices without any financial interest in this (i.e., α is zero). In such case, the acquiring firm will benefit of the entire incremental gain from such a strategy without bearing any of the incremental loss. [9]

4. Conclusion

This article uses the central economic intuition of the *vGUPPIs* framework to illustrate how vertical partial ownership interest acquisitions may create incentives for input foreclosure through raising a rival's costs. It shows through examples that such incentives may arise if the acquisition of a financial interest by a downstream firm in its upstream supplier is accompanied by a right of the acquiring firm to also set the target's post-acquisition prices. These examples also indicate that such incentives may be more likely to arise the lower the financial interest that the acquiring firm obtains in the target. However, assessing the existence of incentives for input foreclosure under more complex corporate structures before and after a vertical partial ownership interest acquisition requires a more formal mathematical model, which, similarly to the modified upward pricing pressure framework, would integrate financial interest and corporate control within the *vGUPPIs* framework.

[8] So much so that the acquiring firm would bear none of the incremental losses, but it would get all the incremental gains associated with engaging in a raising a rival's cost strategy if it obtains through the acquisition full control over the target supplier without any financial interest in this.

[9] This would be reflected in an infinitely large vGUPPIu (i.e., mathematically, vGUPPIu $\rightarrow \infty$ if $\alpha=0$).