

Determining the Competitive Effects of Vertical Integration in Mergers

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1. Vertical Integration in Merger Enforcement

A common focus of merger review is horizontal mergers, namely transactions bringing together two firms that compete directly for at least some sales.³ However, antitrust agencies also consider the potential anticompetitive effects of vertical mergers, namely transactions bringing together one firm that sells an input with a firm that uses the input in manufacturing its product. The firm selling the input is commonly referred to as the “upstream” firm and the firm using the input (also known as an intermediate good) to produce its own product is referred to as the “downstream” firm. The downstream firm may be producing a final good that is sold to consumers, but that does not have to be the case.

The DOJ issued the Non-Horizontal Merger Guidelines in 1984 and have not revised them since, despite issuing three revisions to the Horizontal Merger Guidelines during that time.⁴ In the area of vertical mergers, the Guidelines focus on four types of potential anticompetitive effects: (1) elimination of a potential entrant, if the transaction precludes one of the parties from entering the market of the other, (2) creation of barriers to entry if, post-merger, integration is increasingly necessary to be a successful competitor, (3) facilitation of collusion because of increased information flows across levels in the production process, and (4) evasion of rate regulation as a result of post-merger opacity of transfer prices.

Since the time of the release of the non-horizontal merger guidelines, the economic literature has focused extensively on two other important potential effects of vertical transactions: (1) merger-induced efficiencies and (2) an incentive for the merged firm to raise the price of the upstream good to its downstream rivals.⁵ The experience of the authors indicates that the agencies place significant weight on these two considerations when reviewing vertical transactions. Therefore, in light of the growing trend toward alignment of guidelines with practice and a stated objective of transparency at the agencies, we encourage the agencies to review and revise the Non-Horizontal Merger Guidelines to take account of these and other developments in economic theory and understanding over the past 27 years.⁶

2. Economic Forces in a Vertical Integration

Economic theory suggests that various economic factors are potentially at play in a vertical merger.⁷ These factors can work in opposite directions so that, to appropriately evaluate the competitive effects of a vertical integration, it is necessary to weigh the pro- and anti-competitive effects of the transaction given the specific economic circumstances of the case.

The most prominent pro-competitive effect of a vertical integration is the elimination of pre-merger double marginalization. Double marginalization arises when both the upstream and downstream markets exhibit some degree of economic market power, and thus firms at each level mark up their prices above marginal cost.⁸ In the presence of some degree of economic market power, the prices charged by upstream suppliers exceed the marginal cost of providing the intermediate goods to the downstream market. This represents the first level of mark-up. The downstream manufacturers, in turn, charge an additional mark-up on the products they produce using the already marked-up intermediate goods. This represents an additional mark-up. The consumer pays a final price that incorporates both mark-ups. When the firms merge, the downstream division of the integrated entity is able to access the intermediate goods at marginal cost, which is lower than the pre-merger market price of the intermediate good. This essentially lowers the integrated producer's marginal cost for the downstream product. The post-transaction emergence of a more cost-efficient downstream producer generates downward pressure on prices in the downstream market.

The integrated firm may also face another incentive post-merger, namely the incentive to raise its downstream competitors' cost by driving up prices in the upstream market. The integrated firm may be able to do so by withholding some output from the upstream merchant market or by withdrawing from the intermediate goods market all together.⁹ This could increase the price of the intermediate good and thereby disadvantage the non-integrated downstream producers who face marginal costs that are higher than before the merger occurred. The higher price of intermediate goods creates upward pressure on the downstream prices.

These conflicting factors are well-recognized in the economics literature.¹⁰ The Chicago School produced a large volume of literature that identified the efficiency benefits of vertical integration, including empirical studies demonstrating positive effects of vertical integration in various markets. A growing body of post-Chicago School literature demonstrates possible anticompetitive effects of vertical mergers, including empirical evidences of harmful competitive effects.¹¹

3. Using Economic Analysis to Determine the Net Competitive Effect of a Vertical Integration

The bottom line from a theoretical perspective is that a vertical merger can be either pro- or anti-competitive depending on the facts of the case. Economic analysis can be used to examine the facts of a given transaction and determine the likely overall competitive effect of the transaction by establishing whether the pro-competitive effect of the elimination of double marginalization is likely to dominate the anti-competitive effect of raising rivals' cost or vice-versa.

A first step in the competitive analysis of a vertical merger is to determine whether the merging upstream firm has the ability to affect prices in the upstream market

through a restriction of supply. If not (e.g., if expansion by existing upstream firms or entry by new upstream firms is sufficiently easy and likely), even a complete withdrawal by the integrated firm from the upstream market is unlikely to have any significant effect on the price of intermediate goods.¹² The Non-Horizontal Merger Guidelines use the upstream market HHI to perform an initial assessment of this question: a vertical merger in which the upstream market has a post-merger HHI of lower than 1800 is unlikely to be challenged by the antitrust agencies.¹³ If the integrated firm has the ability to disadvantage its downstream competitors by reducing its merchant market sales of the intermediate goods and driving up their prices, the next step in the analysis is to determine whether this effect will be offset by the elimination of double marginalization. Economic models can be informative in this step of the analysis.¹⁴

Based on assumptions about the behavioral rules and the economic environment in which consumers and firms operate, an economic model can predict the actions of rationally-behaving entities and the effect of their actions on market outcomes, such as pricing and sales. Consider, for example, the classic Cournot model.¹⁵ The Cournot model embodies a particular set of assumptions such as fundamental characteristics of the products (i.e., that the firms' products are homogeneous), the goal of each firm (i.e., maximizing profit), the decision made by each firm (i.e., how much product to produce), and the absence of collusion among the sellers. The Cournot model can be adjusted to vary the number of competing firms in the market, the ownership structure of the firms, the cost structures of the firms, and market demand. For a given set of assumptions, the model can predict a level of production chosen by each firm and the resulting equilibrium market price.

Economic models can be used to estimate the effect of a vertical merger on the post-merger upstream and downstream prices and sales. One example of the use of such a model is provided by Salinger.¹⁶ With particular assumptions on the nature of demand, Salinger's model predicts that the effect of vertical integration on the price of the downstream good will depend on the number of firms in the upstream and downstream markets and the number of firms that are vertically integrated. If less than half the intermediate good producers are vertically integrated, the upward pressure on the downstream price that results from the withdrawal of the integrated firms will not be significant enough to offset the efficiency effect of eliminating double marginalization. Hence, the price of the final good will decrease post-merger. Absent any concerns about collusion or other potential concerns of vertical transactions discussed above, this merger would be beneficial for consumers. However, in different configurations of the assumptions, i.e., with a sufficiently large number of vertically integrated firms, the Salinger model predicts a net anticompetitive effect of a vertical transaction.

While in Salinger's model the effect of a vertical merger can be pro- or anti-competitive depending on the values of the model's parameters, other economic models of vertical integration were developed to isolate only the anticompetitive or

the procompetitive effect of a vertical merger. For example, the model developed by Ordoover, Salop and Saloner always predicts an anticompetitive effect of a vertical merger.¹⁷ One key assumption in the Ordoover, et al. model that drives this result is that the pre-merger upstream market is perfectly competitive. This market structure effectively rules out the existence of the efficiency effect described above because double-marginalization cannot occur if the upstream market is perfectly competitive. Thus, the only effect operating in the Ordoover, et al. model is the potential for vertical foreclosure. While such a model provides theoretical insights into the nature of the anticompetitive foreclosure effect, a different model should be chosen to analyze a real world vertical merger where an efficiency effect is a realistic possibility.

Needless to say, the practical significance of any particular model depends on the model being sufficiently similar to the market structure and dynamics of the industry in question. If the model assumptions are far removed from the real-world conditions of the particular industries at issue, the results obtained from the model are at best irrelevant to the analysis at hand, and may even lead to misleading conclusions. The correct use of economic models depends on choosing the appropriate model and parameter values to ensure that the model accurately represents the industry and merger that are being studied.

Many of the practical issues (and difficulties) of economic modelling fall outside the scope of this article. However, against the backdrop of an administration that is likely to intensify antitrust enforcement efforts with regard to vertical mergers,¹⁸ this article provides a brief look at how economic models can be used to determine the net competitive effect of a vertical integration.

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³ Indeed, the Federal Trade Commission and Department of Justice recently released a new set of Horizontal Merger Guidelines laying out the analysis conducted in such cases. FED. TRADE COMM'N & DEP'T OF JUSTICE, HORIZONTAL MERGER GUIDELINES (August 19, 2010), *available at* <http://www.justice.gov/atr/public/guidelines/hmg-2010.html>.

⁴ DEP'T OF JUSTICE, NON-HORIZONTAL MERGER GUIDELINES (June 29, 1984), *available at* <http://www.justice.gov/atr/public/guidelines/2614.htm>.

⁵ Although the Non-Horizontal Merger Guidelines do mention efficiencies briefly, they do not explain how such efficiencies could be obtained or how they would be balanced against potential anticompetitive effects. The recent economic models in this area do both.

⁶ Note that litigation provides very little guidance as to how courts might analyze vertical transactions. As pointed out by FTC Commissioner Thomas Rosch, from 1984 to 2007, the agencies challenged 23 mergers under vertical theories; 20 resulted in settlements and three were abandoned. Thomas J. Rosch, Address at the Fordham Competition Law Institute's 34th Annual Conference on International Law and Antitrust Policy: The Challenge of Non-Horizontal Merger Enforcement 5 (Sept. 27-28, 2007), *available at* <http://www.ftc.gov/oia/competition.shtm>.

⁷ In this article, we will focus on the efficiency and incentive effects of a vertical merger. As the Non-Horizontal Guidelines indicate, vertical mergers can also affect other competitive dynamics, such as entry and collusion. We do not address those effects here. As such, the focus of this article

can be seen as an analogy to the unilateral effects theories that have been developed to analyze horizontal transactions.

⁸ We distinguish here between market power in an economic sense and the legal threshold of market power. As an economic matter, market power exists as long as price exceeds marginal cost, which can occur as a result of legally pro-competitive market forces, such as product differentiation or advertising, or fixed costs of production. Market power, in the economics sense, is only absent in a perfectly competitive market, which rarely exists in the real world.

⁹ The term “merchant market” refers to the sale of the intermediate good between non-related parties. If the integrated firm uses its upstream product only for its own internal supply, then it has withdrawn from the merchant market.

¹⁰ See, e.g., Michael H. Riordan & Steven C. Salop, *Evaluating Vertical Mergers: A Post-Chicago Approach*, 63(2) ANTITRUST L. J. 513 (1995).

¹¹ For an overview of the literature, see Jeffrey Church, *Vertical Mergers*, in 2 ISSUES IN COMPETITION LAW AND POLICY 1455-1502 (ABA, 2008).

¹² A determination of the degree of competition and concentration in the upstream market can be conducted using the well-established set of tools developed for this purpose, for example, relevant market definition.

¹³ NON-HORIZONTAL MERGER GUIDELINES, *supra* note 4, § 4.131.

¹⁴ Downstream market concentration is also an important factor in the determination of the net effect of a vertical merger. Under certain market conditions, sufficient competition downstream – and the resulting constraints on downstream pricing – can also constrain upstream behavior. However, to determine whether this effect will offset any potential anticompetitive effects, economic analysis is needed.

¹⁵ See, e.g., Jean Tirole, *THE THEORY OF INDUSTRIAL ORGANIZATION*, Ch. 5 (MIT Press, 1988).

¹⁶ Michael A. Salinger, *Vertical Mergers and Market Foreclosure*, 103(2) THE Q. J. OF ECON. 345-56 (May 1998).

¹⁷ Janusz Ordover, Steven Salop & Garth Saloner, *Equilibrium Vertical Foreclosure*, 80 (1) AM. ECON. REV. 127-42 (1990).

¹⁸ Sean Gates & Tej Srimushnam, *New Directions in Antitrust Enforcement: Obama Appoints Christine Varney to Head DOJ Antitrust Division*, MONDAQ BUSINESS BRIEFING, Feb. 4, 2009.