



The New Vertical Merger Guidelines: Muddying the Waters

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Abstract

The new U.S. Department of Justice and Federal Trade Commission Vertical Merger Guidelines focus on how vertical mergers are likely to affect static pricing incentives. While vertical mergers can create incentives to increase prices, they can also provide incentives to decrease prices. Which of the possible outcomes is likely to occur depends on details that are generally difficult to measure. Potential competition between dominant firms, the theory of potential harm to competition that the 1984 Department of Justice Merger Guidelines stressed, remains a more compelling rationale for blocking vertical mergers than the likely effect on static pricing incentives.

Keywords Vertical mergers · Vertical integration · Mergers · Antitrust · Double marginalization · Raising rivals' costs

1 Introduction

The new United States Vertical Merger Guidelines¹ (VMG) supersede the section on non-horizontal mergers in the U.S. Department of Justice (“DOJ”) 1984 Merger Guidelines,² the last merger guidelines that were issued by one of the U.S. antitrust agencies that addressed non-horizontal mergers.³ When the DOJ issued those earlier guidelines, the dominant economic theories about vertical mergers were the

¹ See Department of Justice and Federal Trade Commission (2020).

² See Department of Justice (1984).

³ The section on vertical mergers in the 1984 Merger Guidelines first appeared in the 1982 Merger Guidelines, which substantially revised the 1968 Merger Guidelines. See Department of Justice (1968, 1982, 1984).

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single monopoly profit theorem⁴ and the Cournot/Spengler models of complementary and successive monopoly.⁵ The former laid out conditions under which vertical mergers are competitively neutral. In the latter, a complementary products/vertical merger results in the reduction of prices to consumers through the elimination of double marginalization (EDM).⁶ A universally-acknowledged exception to the single monopoly profit theorem is the avoidance of rate regulation, and that theory was the basis for the Reagan-era DOJ decision to force the break-up of AT&T.

A major deficiency in the economic theory of vertical mergers as of 1984 was that it ignored a primary reason to be concerned that vertical mergers might be anticompetitive. Steven Salop and David Scheffman provided the key insight. They coined the term and provided a model that captured the incentive to “raise rivals’ costs” (“RRC”).⁷ The successive monopoly cannot capture that phenomenon because, with monopoly at both stages, there are no rivals whose costs might be raised. The so-called “post-Chicago” literature on vertical mergers that arose starting in the late 1980s demonstrated the theoretical possibility of anticompetitive vertical mergers based on static pricing incentives.⁸ In those models, RRC is the mechanism that creates the potential for anticompetitive harm.

In 2007, the European Commission issued non-horizontal merger guidelines.⁹ As input into those guidelines, it commissioned a working paper by Jeffrey Church to review the literature on the economic theory of the competitive effects of vertical mergers.¹⁰ The Church working paper contained an extensive review of the post-Chicago literature on vertical mergers and suggested policy implications. The EC Guidelines clearly reflect the influence of the Church Report. Until 2020, the US Agencies had not seen fit to issue new non-horizontal merger guidelines. Their failure to do so did not reflect ignorance of the post-Chicago literature on vertical mergers. A more likely explanation is that Agency officials and staff were not convinced that the post-Chicago literature provided a basis for practical policy guidance.¹¹

Given that the 1984 Merger Guidelines preceded the post-Chicago literature, a new set of vertical merger guidelines might seem long overdue. Before jumping to

⁴ The single monopoly profit theorem states that a monopolist at one stage cannot increase its profits by integrating into an adjacent perfectly competitive stage. When the monopolist is upstream, the theorem requires the assumption of fixed proportions in production downstream. Who deserves credit for first deriving this principle remains unclear. It was part of an oral tradition that is associated with Aaron Director at the University of Chicago. See McGee and Bassett (1976). For an early exposition, see Bowman (1957).

⁵ See Cournot (1870) and Spengler (1950). Cournot first published the result in French in 1838. The reference here is to the English translation.

⁶ A series of articles that relaxed the assumption of fixed proportions underlying the single monopoly profit theorem appeared in the 1970’s, but those theories did not have much impact on policy toward vertical mergers. See Vernon and Graham (1971), Schmalensee (1973), Warren-Boulton (1974), Mallela and Nahata (1980), and Westfield (1981).

⁷ See Salop and Scheffman (1983, 1987).

⁸ See, for example, Krattenmaker and Salop (1986), Salinger (1988), Hart and Tirole (1990), Ordovery, Saloner, and Salop (1990), Salinger (1991), and Riordan (1998). For reviews, see Church (2006, 2008).

⁹ See European Commission (2008).

¹⁰ See Church (2006).

¹¹ See Hoffman (2018).

that conclusion, however, it is worth considering what the section on non-horizontal mergers in the 1984 Merger Guidelines stated. Reflecting the Chicago school influence, they did state that non-horizontal mergers are “less likely than horizontal mergers to create competitive problems,” but added “they are not invariably innocuous.”¹² They then laid out the principal theories that the DOJ might use to support a challenge to a vertical merger. Avoidance of rate regulation was one of those theories, but it was not the only one or even the one given the most prominence.

Instead, most of the section is devoted to concerns about entry. First, they point out that large firms at one stage may be likely entrants—and act as a competitive constraint as long as they are perceived to be likely entrants—into an adjacent stage. They stated that a vertical merger might raise entry barriers by foreclosing entry at a single stage. They also raise the possibility that vertical integration might facilitate collusion—based on the theory that detecting deviations from collusive agreements is easier with respect to final goods than with respect to intermediate goods.¹³

The biggest difference between the VMG and the section on non-horizontal mergers in the 1984 Merger Guidelines is the emphasis that the VMG place on how the static pricing incentives that are created by a vertical merger can be to raise rivals’ costs and, in turn, prices to consumers. The VMG stress that the Agencies’ review of vertical mergers resembles in important respects their review of horizontal mergers. The Horizontal Merger Guidelines¹⁴ focus primarily on how a horizontal merger is likely to affect static pricing incentives. The key question to ask in assessing whether the VMG signal an improvement in policy is whether the analysis of static pricing incentives should be as central to vertical merger enforcement as it is to horizontal merger enforcement.

Echoing the 1984 merger guidelines, the VMG state, “While the agencies more often encounter problematic horizontal mergers than problematic vertical mergers, vertical mergers are not invariably innocuous.”¹⁵ A natural question to ask about this statement is, “What distinguishes the relatively small number of vertical mergers

¹² See Department of Justice (1984, §4.0).

¹³ Intuitively, it might seem that vertical integration can facilitate collusion on the price of an intermediate input that is sold to unintegrated downstream firms. The 1982 and 1984 Merger Guidelines and the VMG all cite facilitating collusion as a possible rationale for blocking a vertical merger. But this intuition is harder to formalize than is generally supposed. In the standard approach to modeling collusive agreements, each participant must be given a production quota such that its potential gains from violating the quota are less than the present value of the profit reductions when the other colluders detect the violation and collusion breaks down. (See Green and Porter (1984)). When a vertically integrated upstream firm abides by its production quota, the appropriate internal transfer price for the intermediate input is the market price, not marginal cost – since using a unit of its quota internally reduces what it can sell externally. Thus, vertically integrated firms do not have an inherent cost advantage in sales of the final good relative to unintegrated downstream firms. When collusion breaks down, the reduction in the price of the intermediate input benefits downstream firms. Integration by an intermediate good producer into the downstream stage then has the effect of reducing the reduction in profits it experiences if collusion breaks down, thus making collusion harder to sustain. Nocke and White (2007) do present a model of how a vertical merger facilitates collusion, but their model relies on a quite literal interpretation of the statistical problem that colluding firms solve in concluding that collusion has broken down.

¹⁴ See Department of Justice and Federal Trade Commission (2010).

¹⁵ Department of Justice and Federal Trade Commission (2020, p. 2).

that the Agencies believe pose a threat to competition from those that do not?” A clear answer to this question is necessary for the VMG to accomplish the stated goal of “assist[ing] the business community and antitrust practitioners by increasing the transparency of the analytic process underlying the Agencies’ enforcement decisions.”¹⁶

Horizontal merger enforcement rests on what Sutton (1991) termed “robust theory.” In analyzing horizontal mergers and making their cases in court, the Agencies use a variety of models tailored to the specifics of a case. While the details of the models affect the quantitative predictions, the element that is common to all the models is the prisoner’s dilemma nature of decisions about what price to charge and how much to produce in oligopolistic markets. The standard oligopoly models taught in any undergraduate industrial economics course (and, for that matter, intermediate and even introductory microeconomics courses) capture the logic underlying horizontal merger enforcement.

The same is not true of vertical mergers. To understand this point, it is useful—indeed crucial – to consider the simplest possible models in which RRC and EDM can both occur. Since the Bertrand model with differentiated products has emerged as the primary theoretical underpinning for horizontal merger enforcement, the natural extension to evaluate vertical mergers is to allow for Bertrand competition with differentiated products at one stage and some form of market power – perhaps monopoly – at the adjacent stage.¹⁷

If one is to assume duopoly at one stage and monopoly at the other, the monopoly stage can be “upstream,” “downstream,” or complementary. The difference in the models concerns the timing of decisions.¹⁸ In a model of an upstream monopolist selling a necessary input to two competing downstream firms, the monopolist selects its price first in the pricing game, and the duopolists simultaneously set their prices second. In a model of competing manufacturers or service providers (such as a video programming service) that sell through a monopoly multi-product distributor, the duopolists move first in the pricing game. If the stages are modeled as complementary, then all the firms choose the price(s) of their respective stage simultaneously.¹⁹ In this article, I focus on the second of these cases.²⁰ As I show in a companion paper,²¹ the results from the first and the third are similar.²²

¹⁶ Department of Justice and Federal Trade Commission (2020, p. 1).

¹⁷ Another obvious model to consider is successive/complementary Cournot oligopoly. See Salinger (1988, 1989).

¹⁸ See Salinger (1989).

¹⁹ If consumers buy complementary products from firms at both stages, then the price of a stage is literally a price. However, even if “upstream” firms sell to “downstream” firms that then sell to final consumers, the downstream stage can be modeled as being complementary. If so, the price of the stage is the downstream margin – not the price of the final good.

²⁰ This case is simpler because it is not necessary to model the upstream stage explicitly to get the qualitative results. All that one needs to assume is that the upstream equilibrium entails positive margins. The analysis then becomes equivalent to the analysis of comparative statics for a multi-product monopolist.

²¹ See Salinger (2021).

²² Key features of the results also arise in a model of successive Cournot oligopoly. In that model, even though a vertical merger results in complete foreclosure, meaning a newly-merged firm does not sell any intermediate input to other downstream firms, the equilibrium price of the input rises in some cases but

2 A Simple Model with Both EDM and RRC

Consider two upstream firms that produce differentiated products that they sell to a downstream firm, which then sells (or distributes) to the final consumers.

Let demand be given by²³:

$$q_i = b_{i0} - b_{ii}p_i + b_{ij}p_j \quad i, j \in (1, 2), j \neq i \quad (1)$$

where q_i and p_i are the price and quantity of good i . Let w_i be the upstream price of good i and assume that both prices exceed marginal cost, which we can assume to be 0.

The monopolist's profit-maximizing prices are²⁴:

$$p_i = b_{i0} - \frac{[2b_{ii}b_{jj} - b_{ij}(b_{ij} + b_{ji})](b_{i0} - w_i) + b_{ii}(b_{ij} - b_{ji})(b_{j0} - w_j)}{4b_{11}b_{22} - (b_{ij} + b_{ji})^2} \quad i, j \in (1, 2), j \neq i \quad (2)$$

If the downstream monopolist merges with, say, upstream firm 1, it gets good 1 at marginal cost. As a result, the effect of the merger on the static pricing incentives depends on how a reduction in w_1 affects p_1 and p_2 . Intuitively, it might seem that such a merger would provide an incentive to reduce p_1 and increase p_2 , and that is one of the qualitative possibilities. But there are two others: One—which is an application of what is known as “Edgeworth’s Paradox of Taxation”²⁵ – is that the merger provides an incentive to increase both prices. This possibility implies that the static pricing effects of EDM do not necessarily benefit consumers. But the other

Footnote 22 (continued)

falls in others. In other words, RRC can be but is not always the result of a vertical merger. See Salinger (1988).

²³ For analysis of this model for general demand curves, see Salinger (1991). An underlying assumption is that firms set prices that maximize their profits. A recent development in the modeling of vertical mergers is to assume bargaining between firms at the two stages and, more specifically, to use the Nash bargaining solution to model prices. See Shapiro (2018) and Rogerson (2020). In general, a vertical merger reduces the cost to the vertically integrated firm of having negotiations break down. As a result, it increases the minimum price the seller of an intermediate good would accept (and reduces the maximum price a buyer would be willing to pay). Since the price of an intermediate good in the Nash bargaining solution is a weighted average of the minimum price that a seller would accept and the price that maximizes its profits, this effect pushes in the direction of predicting a price increase from a vertical merger. The result about how a merger affects the minimum price that a seller will accept is robust; but the Nash bargaining solution – despite its widespread use – is an ad hoc solution to an otherwise intractable problem. (It is hard to reconcile why economists accept the Nash bargaining solution but dismiss conjectural variations.) Demonstrating that the pre-merger price of an input is below the minimum that the vertically integrated firm would accept would constitute a compelling case that a vertical merger will result in RRC. While the Agencies have increasingly relied on models of bargaining to evaluate mergers in which bargaining is a key feature of the competitive environment, the assumption that companies set prices to maximize their profits is the more standard assumption. For a discussion of the use of bargaining models by the Agencies, see Nevo (2014).

²⁴ See Salinger (1991, p. 552).

²⁵ See Edgeworth (1925). Edgeworth first published the result in Italian in 1897. The reference here is to the English translation.

possibility is that the merger provides an incentive to reduce *both* prices, so RRC is not an inevitable result of a vertical merger either.

One might hypothesize that the two less-intuitive qualitative results are mere theoretical curiosities—similar to Giffen goods—and that there should be a strong presumption that the pricing incentives that are created by a vertical merger fall into the intermediate case of a reduction in the price of the product that the monopolist now produces and an increase in the product that competes with it. But, in Eq. (2), when $b_{12} = b_{21}$, the downstream price of good 2 does not depend on the upstream price of good 1.²⁶ If the income effects from price changes of the two goods are negligible, then the cross-price slopes of the Marshallian demands are also the cross-price effects of the compensated demand curves; and the equality of the cross effects is the Slutsky-Hicks condition that is needed for the demand system to imply an underlying utility function. Symmetry of cross-price effects is a much weaker condition than completely symmetric demand.

Demand curves do not have to be linear; and, even if all individual demand curves obey the Slutsky-Hicks condition, the market demand curves that are derived from aggregating them need not do so.²⁷ But there is nothing perverse about linear demand curves, and the Slutsky-Hicks conditions are a natural base case even if they do not have to hold literally. If $b_{21} < b_{12}$, then EDM with respect to Good 1 does provide the merging firm with an incentive to increase p_2 . But, in that case, a merger of the downstream monopolist with the supplier of Good 2 would provide an incentive to reduce p_1 (as well as p_2).

The above analysis does not explicitly model the upstream equilibrium prior to the merger or how a vertical merger affects the pricing incentives of the remaining upstream firm. If we assume that the two upstream goods are strategic complements, however, a vertical merger would provide an incentive for the upstream competitor

²⁶ This is so even assuming that the producer of Good 2 keeps w_2 constant. The reduction in the downstream price of Good 1 would give the producer of Good 2 an incentive to reduce w_2 , which would then result in a reduction in p_2 – given linear demand and equal cross-price effects.

²⁷ Hotelling (1932, p. 612) presents a set of quadratic demand curves that satisfy the Slutsky-Hicks conditions and in which Edgeworth's Paradox arises for a tax on one of the goods. (A tax on the other good causes an increase in the price of both goods.) Of course, the conditions that underlie Edgeworth's Paradox are not necessary for a vertical merger to result in net consumer harm or some price increases. Indeed, the literature does contain some documented increases in prices that resulted from vertical mergers. Gilbert and Hastings (2005) find that the 1997 merger of Tosco and Unocal caused an increase in the price of wholesale gasoline (but did not study the effect on retail prices, which is what would be needed for a showing of consumer harm). Luco and Marshall (2020) find that The Coca-Cola Company's acquisition of Coca-Cola Enterprises (CCE) – its largest U.S. bottler – caused a reduction in the prices of Coca-Cola products but an increase in the prices of the other brands (such as Dr. Pepper and Canada Dry Ginger Ale) that CCE bottled and distributed. Given that the volume of Coca-Cola products bottled by CCE far exceeded the volume of other brands, the net effect on consumer surplus was likely positive. In addition, whatever RRC effect may have resulted from that merger, it should be viewed in light of the long history of the complicated vertical relationship between soft drink concentrate producers and their bottlers. While there have been long-standing concerns about the effect of vertical integration between Coca-Cola and Pepsi with their bottlers, the historical evidence suggests that the vertical integration that they chose has benefited consumers. See Salinger (2014). [Disclosure: I was a consultant to CCE with respect to the FTC's pre-merger review.]

of the merged firm to reduce its price, which would in turn provide an additional incentive for the downstream monopolist to reduce prices to final consumers.

The model of a vertical merger between an upstream monopolist and one of two competing downstream firms yields similar conclusions.²⁸ With symmetric cross-price effects, a vertical merger results in a reduction in *all* prices—not only the two downstream prices but also the price that the merged firm charges its downstream competitor. That is, RRC does not occur. When the stages are modeled as complementary, a complementary-goods merger does give the merged firm an incentive to charge more for the component to be used in conjunction with its competitor's product, but the combined price that purchasers of the competitor's product pay for the two components decreases.

3 Policy Implications

3.1 Interpreting the Economic Theory of the Effect of Vertical Mergers

Some economists have argued that there is no basis in economic theory for a presumption that vertical mergers in concentrated markets pose less of a threat to competition than do horizontal mergers, and that the potential anticompetitive effect from a vertical merger is in effect the same as in a horizontal merger.²⁹ Simple economic models contradict such assertions.

In the above model, a horizontal merger of the competing duopolists would provide static pricing incentives to increase prices. That qualitative result is not sensitive to the assumptions about the functional form of demand, the specific parameters of the demand relationship, or the precise oligopolistic interaction between the two firms. In the same model, a vertical merger can result in price decreases for both goods and no RRC.

The duopoly-monopoly structure—regardless of which stage is “upstream” – is not simply one of many possible sets of modeling assumptions to make in assessing what economic theory predicts about the likely effects of vertical mergers on static pricing incentives. It is the natural extension of the Bertrand model with differentiated products to consider markets with multiple stages of production, and it is the natural extension of the successive/complementary merger model to consider the possibility of RRC effects.³⁰

²⁸ See Salinger (2021). See also Lu, Moresi, and Salop (2007), Akgün et al. (2020), Domnenko and Sibley (2020), and Das Varma and DeStefano (2020).

²⁹ See Salop (2018, slide 16), Baker, Rose, Salop, and Scott-Morton (2019, p. 13), and Moresi and Salop (2020, p. 1).

³⁰ A major shortcoming of the Church (2006) paper that was prepared for the European Commission was that it did not discuss the results of the monopoly-duopoly model at all – much less focus on it as a central model to consider. Instead, his policy recommendations focused on verifying what seemed to be key assumptions that underlie the various post-Chicago models of potential harm from vertical mergers. Perhaps because of the variety of assumptions that underlie the different models of potential harm from vertical mergers, there is no obvious consensus among industrial economists as to what constitutes the

If this set of assumptions yielded the robust result that vertical mergers in concentrated markets result in price increases, that result would provide the economic logic for competition agencies to treat vertical mergers similarly to horizontal mergers. But those assumptions yield no such result. And, if economists would consider such results to be relevant if those models predicted price increases, then they must consider them equally relevant if, as is the case, they do not.

Economically sound antitrust policy must recognize not only the power of economic analysis but also its limits. Economics is not a precise science. If the Agencies are going to base vertical merger enforcement on their models of how a vertical merger will affect static pricing incentives, then one of two things must be the case: One possibility is that predicted price increases are a robust feature of the underlying models—so that at least the qualitative predictions are not particularly sensitive to model details. If they are not, as is the case with vertical mergers, the second possibility is that the available tools for ascertaining the underlying structure of the model and for measuring model parameters are precise and reliable enough to determine whether a particular merger is likely to be anticompetitive.

In the model in Section II, the combination of linear demand and symmetric cross-price effects implies that a vertical merger between the monopolist and either upstream firm would result in price decreases. As a result, for a model to predict price increases from a vertical merger, it would have to entail either asymmetric cross-price effects or non-linearities in demand; and these features would have to be results, not assumptions.³¹ This is problematic for two reasons: First, it would seem to be rare that it will be possible to measure the demand relationships sufficiently precisely to conclude with the degree of confidence that the Agencies must demonstrate in court that price increases are likely. Second, even if the measurement tools were available, a policy in which the legality of a vertical merger turns on the relative size of cross-price effects or non-linearities in demand is not sufficiently transparent to businesses or to courts.³²

Footnote 30 (continued)

basic economics of vertical mergers. The absence of such a consensus increases the risk that policy makers will simply ignore the input of economists.

³¹ The assumption of logit demand in a model of vertical market structure tends to predict price increases more than does linear demand. But the frequent use of logit demand in merger analysis is because calibrating it does not require econometric estimation of cross-price effects and not because of any theoretical or empirical result that the functional form for actual demand curves is logit. The fact that logit demand is non-linear does not imply that in a model of vertical mergers, non-linearity (or even convexity) implies price increases from vertical mergers. See Salinger (2021).

³² Because merger enforcement is inherently an exercise in decision theory, it rests either explicitly or implicitly on prior probabilities (that can be conditioned on observable criteria such as market concentration) about whether vertical mergers are likely to be anticompetitive. Several reviews of the empirical literature conclude that the evidence supports a presumption that vertical mergers benefit consumers. See Cooper, Froeb, O'Brien, and Vita (2005), Lafontaine and Slade (2007), and Blair, Wilson, Sokol, Klovers, and Sandford (2020). In this issue, Beck and Scott Morton (2021) also review the empirical literature and question the conclusions from these earlier studies. As they point out, the published literature is not a representative sample. A big problem is that – representative or not – the sample is very small. The effect of vertical mergers and integration is easier to study in some industries – e.g., multi-channel video distribution and soft drinks – than in others; and what scholars find interesting tends to bias both

3.2 Vertical Upward Pricing Pressure

One of the (relatively) recent developments in the review of horizontal mergers is the use of “Upward Pricing Pressure” (“UPP”).³³ The insight behind UPP is that the effect of a horizontal merger between Firm A and Firm B on static pricing incentives is to add a marginal opportunity cost to the first order condition with respect to each price. More specifically, that opportunity cost in the first order condition for the price of Good A equals the diversion ratio from Good B to Good A multiplied by the price–cost margin on Good B.

UPP is a short-cut relative to complete merger simulation. The shift in a first-order condition is one element of a horizontal merger simulation; but UPP leaves out the simultaneous solution of the multiple first-order conditions for the merged firm as well as any reactions by other competitors and the effect of those reactions on the post-merger equilibrium. There are two key rationales for relying on UPP, and they both have to hold for UPP to be a useful tool in the review of horizontal mergers: First, the other elements of full merger simulation must be difficult to measure³⁴; and, second, the qualitative results—and, ideally, the approximate quantitative results—of a full merger simulation must not be sensitive to those additional details.

Moresi and Salop (2013) have observed that vertical mergers create a similar effect on the first order conditions with respect to prices. Suppose Firm U is an upstream monopolist supplier of an input to two firms: A and B. If A and U merge and one compares the pre- and post-merger first-order conditions with respect to the price of Good A, the latter contains an additional term that is equal to the diversion ratio from B to A multiplied by the merged firm’s margin on the upstream good. From this, Moresi and Salop argue that the distinction that many economists draw between the economic effects of horizontal and vertical mergers is artificial.

Despite the similarity between horizontal and vertical upward pricing pressure, the rationale for relying on UPP in the evaluation of horizontal mergers does not apply to vertical mergers and, in fact, is a reason why vertical upward pricing pressure has at most limited use for vertical merger enforcement. To be sure, the first of the necessary conditions does apply. The additional details that are needed for full merger simulation are difficult to measure. But both of the necessary conditions are indeed necessary, and the qualitative results of a vertical merger simulation do in general depend on the additional details.³⁵ As a result, when an Agency

Footnote 32 (continued)

what scholars study and what referees and editors accept. Thus, absent objective empirical probabilities, the prior probabilities that inform policy are necessarily subjective.

³³ See Farrell and Shapiro (2010).

³⁴ If they were not, there would be no reason to rely on the shortcut.

³⁵ Salinger (2021) derives a condition based on observable conditions under which a vertical merger is likely to create static pricing incentives to raise prices. The reason why a merger of U and A can result in a reduction of the price of the input to B is that EDM not only has the direct effect of reducing the marginal cost of A but also an indirect competitive effect on B and, therefore, on the supplier of the input to B. This effect on the price of the input that the merged firm sells to B applies even though the merged firm also sells A. Just as the direct effect of a vertical merger on the marginal cost of A is the difference

challenges a vertical merger based on its prediction of price increases resulting from the merger, that prediction might prove to be fragile with respect to alternative plausible assumptions.³⁶

3.3 Structural Analysis

The 1968 Merger Guidelines laid out structural criteria that were based on concentration ratios and the market shares of the merging parties for both horizontal and vertical mergers. Remarkably, the structural conditions that they laid out for challenging vertical mergers were nearly as restrictive as those for challenging horizontal mergers.³⁷

Even though the cross-sectional structure-performance studies of the 1950s and 1960s fell out of favor among academic economists, structural analysis continues to play a role in horizontal merger enforcement. Even the 2010 Horizontal Merger Guidelines state structural criteria that affect the likelihood that the Agencies will challenge a horizontal merger.³⁸ Data that the FTC publishes about its merger review confirm that structural criteria are strong predictors of agency actions.³⁹ US case law entails a “structural presumption” that mergers of firms with significant market shares in highly concentrated markets are anticompetitive. A reliance on structural criteria in merger enforcement has persisted because it makes merger policy more transparent to businesses, antitrust counsel, and courts.

Economic theory provides support for the proposition that the static pricing incentives created by horizontal mergers of firms with significant market shares is to increase prices, and that theory is part of the justification for the role of market structure in horizontal merger enforcement. There is no such economic theory to support a structural presumption for vertical mergers that is based on static pricing incentives. Even when there is duopoly at one stage and monopoly at the other, economic theory simply does not predict that the static pricing incentives that are created by a vertical merger are necessarily to increase any price, much less to result in a reduction in consumer surplus.

One might hypothesize that even if there can be no general structural presumption in the duopoly-monopoly case, there might be one based on the market share of the firm at the duopoly stage. For example, one might imagine a structural presumption if a dominant firm at one stage seeks to merge with a firm with at least a 60% share at an adjacent stage. But economic theory provides no foundation for such a rule either. Asymmetry in market shares does not imply the asymmetry in

Footnote 35 (continued)

between the EDM and the vertical upward pricing pressure, so is the indirect competitive effect on the price of the input to B. If the vertical upward pricing pressure exceeds the EDM, then the net pricing pressure on the price of the input and on both outputs are positive.

³⁶ Domnenko and Sibley (2019) also make this point.

³⁷ See Department of Justice (1968, ¶12–13).

³⁸ See Department of Justice and Federal Trade Commission (2010, §5.3).

³⁹ See Federal Trade Commission (2013).

cross-price effects that would be needed with linear demands to generate predictions of price increases from a vertical merger.

Moreover, suppose that the legality of a vertical merger in the monopoly-duopoly setting turned on the share of the firm in the duopoly. It is not clear that it would be the merger with the bigger firm that would be objectionable. As the share of the larger firm approaches 100%, the industry would approach successive monopoly; and a model of the static pricing incentives that are created by a vertical merger would predict price reductions. And, suppose that with duopoly shares of 75% and 25%, economic theory predicted price increases from a merger between the monopolist and the smaller firm and price decreases from a merger between the monopolist and the larger firm. Would anyone other than professional economists endorse an antitrust rule that would permit the monopolist at one stage to purchase a large firm at an adjacent stage but not a smaller one?

This latter point about the need for antitrust enforcement to conform with common sense is not limited to structural presumptions. It applies equally to more complicated, less transparent approaches to enforcement. If the methodologies that the Agencies use to analyze vertical mergers would lead to clearance of a merger between a monopolist and a firm at an adjacent stage with a 75% share but would not permit the same monopolist to merge with the smaller firm at the adjacent stage, the underlying policy is equally problematic. Whatever approach or approaches the Agencies plan to use—and the VMG do not make clear what they are—I am not aware of any analysis that the Agencies could rely on to justify structural conditions that are likely to give rise to a vertical merger challenge.⁴⁰

4 Potential Competition as an Economically Sound Basis for Vertical Merger Enforcement

In arguing that the theory of how vertical mergers affect static pricing incentives does not suggest any basis for a structural presumption, I am not arguing against a structural presumption with respect to vertical mergers. But static pricing incentives cannot provide the basis for such a presumption.⁴¹

⁴⁰ A possible exception is Salinger (1988, p. 354), which lists structural criteria in which, given successive Cournot oligopoly with homogeneous goods and linear demand, a vertical merger results in price increases. But those results rest on strong assumptions about the timing of decisions and the functional form for demand. The model in Salinger (1989, p. 382) relaxes those assumptions and derives a condition based on the relative outputs of vertically integrated and unintegrated firms and price–cost margins at the different stages under which a vertical merger results in price increases. That condition relies on variables that might seem to be easier to observe than the variables needed to measure vertical UPP, but more work would be needed to justify using that condition as an enforcement tool.

⁴¹ An exception is “diagonal mergers,” which occur when a firm merges with a firm from which it does not purchase inputs but which does supply inputs to its competitors. An example is AT&T’s purchase of McCaw in 1994: McCaw was a cellular phone carrier, and AT&T was an equipment provider. McCaw did not purchase AT&T equipment, but its competitors did. Because McCaw did not use AT&T equipment, the merger did not eliminate double marginalization; but it did create an RRC incentive that the Department of Justice sought to eliminate with a consent decree. See Department of Justice (1994).

Another possible basis for a structural presumption is the threat of entry (or commitment to help entrants and/or small competitors remain viable and expand). One of the challenges that the Agencies have in justifying merger challenges that are based on potential entry is that a merger reduces the competitive effect of potential entry only if one of the parties is the most likely or one of a small number of likely entrants into the other's markets. This can be difficult to prove, since the Agencies (and the firms themselves) often cannot confidently identify the entire set of potential entrants. In cases of successive dominance, however, since the dominant firm at one stage benefits from competition at the adjacent stage,⁴² it has an additional incentive (relative to other potential entrants) to enter or help other firms enter the adjacent stage. This theory of potential harm from a vertical merger is robust with respect to assumptions about the functional form of demand or the precise nature of game-theoretic interaction either between or within stages. It does not even require that double marginalization results in consumer prices that exceed the joint profit-maximizing price.⁴³

An example of a vertical merger that should have been (and was) challenged on potential competition grounds was Time Warner's 1996 purchase of Turner Broadcasting: Time Warner's cable systems were dominant distributors in their service territories, and CNN (which was owned by Turner) was the dominant cable news network. At the time, MS-NBC and Fox News threatened CNN's dominance. Without the merger, Time Warner would have benefited from extra competition in cable news. The merger with Turner gave Time Warner an incentive to block the new entrants.⁴⁴

Another example of vertical merger that should have been (and was) challenged on potential competition grounds was TicketMaster's 2010 purchase of LiveNation. Ticketmaster was (and remains) the dominant provider of ticketing services for concerts, and LiveNation was the largest promoter of concerts. LiveNation was not only a potential entrant into ticketing – it had already started entering.⁴⁵

Both of these cases were settled with consent agreements. One might question whether the consents provided adequate relief and, if not, whether the mergers should have been blocked rather than cleared with conditions. But the focus of the

⁴² The first Salop-Scheffman model of raising rivals' costs provides a qualification to this point. When members of a competitive fringe use an input more intensively than does a dominant firm, the dominant firm might benefit from a higher price of the input. See Salop and Scheffman (2013).

⁴³ In principle, successively dominant firms or firms with complementary monopolies might coordinate their pricing to charge the joint profit-maximizing prices (just as oligopolists in principle might coordinate – either through explicit collusion or tacit coordination – to maximize their joint profits). Even if vertically situated firms manage to restrain their prices below the single-period Nash equilibrium prices, they would not necessarily achieve joint profit-maximization; and, if they do temporarily achieve joint profit-maximization, they would both have an incentive to increase prices. If they are truly dominant, there is no reason to expect them to reduce prices below those that maximize joint profits.

⁴⁴ The FTC issued a complaint about the merger and entered into a consent decree with Time Warner as the condition for clearing the merger. The decree conditions included a requirement for Time Warner to carry at least one additional cable news channel on its cable systems. See Federal Trade Commission (1996).

⁴⁵ See Department of Justice (2010).

VMG is on what vertical mergers the Agencies are likely to challenge—not on the appropriate remedies. The VMG do cite potential competition as a possible theory for blocking a vertical merger, but the emphasis that this theory receives in these guidelines is less than it receives in the 1984 Merger Guidelines.

5 Conclusions—A Key Question to Answer

If the VMG provide clarity to businesses, antitrust practitioners, and courts, one should be able to answer the following question: Name two companies that, based on the VMG, cannot engage in a vertical merger and what is the economic principle underlying why?

In the case of horizontal mergers, answering this question is simple: The Coca-Cola Company and PepsiCo cannot merge. Apple and Microsoft cannot merge. Neither can Apple and Google. Probably—although given past U.S. agency enforcement with respect to airlines, it is less clear—Delta Airlines and United Airlines cannot merge. The underlying economic principle is the prisoner's dilemma applied to actions by competing firms. When one firm takes actions such as a price cut or product improvement to increase its sales, it generally takes business from its competitors. When a sufficiently large fraction of the increased sales would be diverted from the proposed merger partner, then the merger dulls the incentive to behave competitively. The ability to predict how the Agencies will respond to a horizontal merger is not limited to mergers to monopoly. “Three-to-twos”⁴⁶ are likely to be challenged. “Seven-to-sixes” are usually legal.

One can answer the question based on the section on vertical mergers from the DOJ 1984 Merger Guidelines. Whether or not the requisite structural conditions are still present, there was a time when Microsoft's position in personal computer operating systems and productivity software and Intel's position in microprocessors for personal computers were dominant to the point of nearly being monopolies. A merger between them likely would have resulted in EDM and, therefore, downward static pricing pressure. Yet, each had a strong incentive to promote entry in the other's market. Microsoft had an incentive to see ADM—Intel's main competitor—succeed; and Intel was a major sponsor of Linux: an open-source operating system that threatened Microsoft's Windows. The rationale for blocking such a merger would be potential competition—not static pricing incentives; and it is a challenge that one could predict based on the 1984 Merger Guidelines.

Because the VMG include potential competition as a possible theory for blocking a vertical merger and because challenges that are based on static pricing incentives are going to be difficult to prove, the VMG are unlikely to have much of an effect on what mergers the Agencies successfully block. But by focusing on static pricing incentives rather than potential competition, they muddy the waters instead of clarifying them.

⁴⁶ These numbers do not literally refer to the total number of competitors but, instead, to the number of significant competitors or, alternatively, HHI equivalents.

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