Comments on Vertical Integration and Market Foreclosure

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Comments and Discussion

Comment by Dennis W. Carlton: Hart and Tirole have written a very clever paper to show how vertical integration can be privately desirable yet socially undesirable. Even though the paper is difficult, it is certainly valuable because vertical foreclosure is an important issue in antitrust enforcement. The authors use a very general model and make a lot of assumptions (or avoid making assumptions) and that means it is difficult for them to get their results simply. In some sense, they may make more work for themselves than they have to.

I discuss three main topics. First, I discuss how to formulate the game that the firms play and suggest ways that vertical integration can influence that formulation. Some of these ways are not analyzed directly by Hart and Tirole, but they could be especially important and have direct effects for the problem analyzed.

Second, I discuss some standard motives for vertical integration that are specifically abstracted from in the paper. These motives have a tremendous effect on how one interprets the results of the paper—in particular, the authors' suggestions about when the anticompetitive effects of vertical integration would be most severe.

Finally, I conclude with comments on the authors' empirical examples of vertical integration.

Model Formulation

In the model there is duopoly at the upstream and downstream stages. Therefore to make any progress, one must specify the game played at
each stage in both the integrated and nonintegrated cases. I am always uncomfortable when the strategy space is specified because it is often not obvious. Is it Bertrand in prices? Is it Cournot in quantities? If the point of a paper is to show that something is theoretically possible—for example, that socially undesirable vertical foreclosure could occur—then the paper is interesting only as long as the strategy space is not too outlandish. If the point of a paper is to show that foreclosure is not only theoretically possible but actually occurs and if the paper will be used for policy recommendations, then it matters very much what the strategy space is. I am especially wary when I know that the results may change significantly if there are changes in the strategy space.

To illustrate my point regarding sensitivity of results, I will use a paper by Ordover, Salop, and Saloner to which Hart and Tirole refer. In that paper foreclosure occurs if there is Bertrand competition but not if there is Cournot competition. Hart and Tirole criticize the authors for assuming that firms can make certain binding commitments, and Hart and Tirole obtain their results in a more general strategy space than Ordover, Salop, and Saloner. But commitments may possibly be made in more complicated ways than the models of Hart and Tirole allow. Their results would change dramatically if such commitments were allowed and, as in the paper by Ordover, Salop, and Saloner, would depend on whether the game is Bertrand or Cournot.

The theoretical results on vertical foreclosure depend critically on assumptions about strategies and commitments that I find hard to validate empirically. I am left in the undesirable situation of understanding the theoretical possibility of socially undesirable vertical foreclosure, but not being able to identify it when I see it.

Hart and Tirole emphasize that their approach, in contrast to that of others, relies on commitments that are credible. This is a virtue of their paper. However, vertical integration can enable a firm to make many more commitments than the ones Hart and Tirole analyze. The ability to make such commitments will influence outcomes and thereby influence the incentive to engage in vertical integration.

Let me explain how vertical integration can affect the credibility of a commitment. Vertical integration can eliminate opportunism and thereby allow greater specialization of assets to occur. When specialization occurs, products can be more idiosyncratic and can be more differen-
tiated. If products become more differentiated, the force of Bertrand competition can be lessened. Therefore, vertical integration can be a way for firms to commit not to produce identical products, which would be beneficial to them because it would lessen competition.

A second commitment from vertical integration is also related to specialization. If the upstream product produced by the vertically integrated firm becomes more specialized, it may not be as useful to an unintegrated firm. In fact, if the integrated firm chose to, it could make the input useless to the unintegrated firm. Therefore, vertical integration is a way in which the integrated firm can create a credible commitment that it will not supply an unintegrated firm.

Finally, there are situations in which a rival will not rely on a competitor to supply its product. Customers interested in obtaining a second source often want to make sure that it has a supply completely separate from that of the first source. This is another way in which vertical integration could result in a commitment not to supply.

When Anticompetitive Foreclosure Is Likely to Occur

There are two standard reasons, not discussed in the paper, for vertical integration. One has to do with variable proportions and the other with double markup. Hart and Tirole eliminate these reasons by assuming the possibility of two-part tariffs. It is proper for them to ignore the standard reasons because they focus on the incentive to integrate vertically that arises solely from strategic considerations related to foreclosure. In terms of logic, what they are doing is perfectly reasonable.

But if the relevance of their results for policymaking is to be considered, these standard reasons must be taken into account because two-part tariffs may not be in use, and price may exceed marginal cost. Any time an input supplier is charging a downstream firm a price different from marginal cost, there are incentives for vertical integration to eliminate the double markup or, if there are variable proportions, to induce efficient input ratios of capital and labor. Hart and Tirole suggest that policymakers should be especially alert to anticompetitive foreclosure when vertical integration occurs and one of the firms is especially efficient. But this is precisely the situation in which efficiency gains
from vertical integration are greatest because price exceeds marginal cost and there are variable proportions or a double markup.

Therefore, I would take exception to their recommendation that the burden of justifying a vertical merger should be borne by the merging firms if one of the merging firms is especially efficient. First, as I have explained, it is not clear that the anticompetitive harm, compared with the efficiency gains, is greatest when one of the integrating firms is very efficient. Second, shifting the burden of justifying a merger onto the merging parties may be counterproductive. Suppose a vertical merger will create efficiencies. I have little faith that economists can always convince a government enforcement agency ex ante of efficiencies. Enforcement agencies are thus appropriately skeptical when they see such demonstrations. Shifting the burden, as Hart and Tirole suggest, could result in fewer efficient vertical mergers.

Empirical Examples

Most theoretical models stress asymmetries of cost and information among firms. Yet these asymmetries appear to play no role in the empirical discussion of this paper. Moreover, all the theoretical models assume that two-part tariffs are used. Were two-part tariffs used in any of the empirical cases studied here?

Comment by Oliver E. Williamson: This paper works out of an incomplete contracting setup, broadly in the spirit of Grossman and Hart (1986). Because the modeling of incomplete contracting is a formidable task, simplification is greatly needed. Simplification is accomplished by focusing on competition and exchange between two successive stages of production, both of which are organized as duopolies.

That the analysis of even a successive duopoly is complicated is borne out by the length of the paper. Indeed, keeping the three variants of the authors' model straight puts a real burden on the reader. That, however, is in the nature of the problem. They have done all that can be reasonably expected to relieve these burdens by their meticulous procedure. Their comparison and contrast of their treatment with the recent literature reveals, I think, the advantage of addressing the issues on their terms.
Nevertheless, I have two reservations. First, and most important, the public policy tone of the paper seems wrong. Second, the way the authors characterize the benefits and costs of integration (effects of market power aside) are restrictive.

Antitrust analysis and enforcement have come a long way from the 1960s. Then, possible economies associated with new forms of organization (vertical, horizontal, and conglomerate mergers and nonstandard forms of contracting) were held in low regard, and monopoly power was ascribed to market shares, even small shares, in what were often contrived definitions of relevant markets. Although some would contend that the pendulum has swung too far, the excesses of the 1990s are to be preferred to those of the 1960s. One of the reasons for the improvement is that antitrust enforcement in the 1990s is much more informed by the relevant economic theories.

Hart and Tirole inform and refine our understanding of the trade-offs posed by vertical integration. I would urge, however, that applications of their results be restricted to circumstances that closely approximate those of the model. Their use of the model to interpret the reorganization of the cement industry in the 1960s suggests wider scope for the model and a more elastic approach to public policy than I believe is appropriate.

Their model examines consequences for market power and efficiency arising from vertical mergers between successive duopolists. Although the qualitative effects the authors display arguably apply outside these very special circumstances, concerns about monopoly power are nonetheless attenuated as the number of firms increases or as entry becomes easier. If nontrivial market power indicia need to be exceeded before antitrust enforcement resources are properly mobilized, which is surely judicious, then the first question is whether the cement industry crossed the threshold. That the conditions of concentration and entry at both the cement and ready-mixed stages in relevant geographic markets exceeded the threshold is not demonstrated and is, I think, doubtful.

Hart and Tirole propose that the scarce needs variant of their model is the one applicable to cement. They aver in this connection that the "bottleneck seems to have been the downstream industry." A striking feature of the cement industry in the 1960s, however, is that there was significant excess capacity. 1 Possibly that excess was less in the ready-

mixed stage than in the manufacture of cement. There is no indication whatsoever, however, that the bottleneck was constraining. Furthermore, temporary bottlenecks that are easily relieved by low-cost entry—possibly financed by efficient upstream cement suppliers who are the intended victims of ready-mixed firm foreclosures—are scarcely constraints at all.

But so what? The hazard is that the elastic use of the model by the authors encourages the even more expansive use of it by others, especially those directly involved in enforcing antitrust laws. If such uses are not what Hart and Tirole intend, then they should restrict their applications to circumstances that more closely approximate the conditions of the model, as is arguably the case for the other two examples that they discuss.

My second concern is that the paper by Grossman and Hart (1986) out of which Hart and Tirole work characterizes the efficiency gains and losses from vertical integration in a very special way. Specifically, Grossman and Hart (and Hart and Tirole) assume that managers of firms and of divisions are compensated very similarly—namely, that they appropriate the net receipts of the stage of production to which they are assigned. Thus these managers face high-powered incentives. The source of the efficiency gains and losses of vertical integration under this setup turn entirely on the different ex ante investment distortions that alternative forms of ownership induce.

That is an important result. As I have argued elsewhere, however, the managers of internal divisions do not face the same high-powered incentives as the owners of independent firms: these internal incentives are more easily corrupted, internal organization has access to control instruments that are superior to the market, the deliberate attenuation of incentives promotes easier and better ex post bilateral adaptation.2 An important contributing factor to these differences between market and hierarchy is that each mode faces a different system of contract law. The courts treat disputes over prices, quality, delays, and so forth that arise between firms differently than they do identical disputes that arise within firms. They will routinely hear the former, but they refuse to give standing to the latter. In effect, the rule of law that applies to internal disputes (of an instrumental kind) is that of forbearance.3 That

is why fiat is an important instrument for dealing with internal disputes and distinguishes internal from market organization, earlier claims to the contrary notwithstanding.  

The upshot is that the efficiency gains and losses of vertical integration are different from those that Hart and Tirole address. Specifically, the main efficiency trade-off with which vertical integration needs to be concerned is between incentive intensity (where market procurement enjoys the advantage) and bilateral adaptability (where the advantage accrues to internal organization as a condition of bilateral dependency builds up). Possibly these efficiency features will play out very similarly to those of concern to Hart and Tirole when examined in a combined market power–efficiency framework. That, however, is conjectural.

In any event, it has long since been conceded that the die-hard branch of the Chicago School erred on the pure logic of vertical integration and vertical market restrictions: there really can be anticompetitive effects. Although new demonstrations of the die-hard error may add to our understanding, the instinct that antitrust should proceed in the vertical area with great caution is not upset. In the degree to which an elastic application of new models encourages an expansive antitrust enforcement program, errors of excess are certain to result. That is easily avoidable by applying the lessons of the new models in carefully delimited ways.

**General Discussion:** Many of the participants commented on the assumptions underlying the authors’ models. Daniel Spulber emphasized the important contribution made by the Hart-Tirole model. He noted that the model assumes barriers to entry and exit and said that in the absence of such barriers, there is the possibility of entry of efficient competitors who will supply the downstream firm that is left out after

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5. The term die-hard Chicagoan is that of Richard Posner, who defines such a person as one “who has not accepted any of the suggested refinements or modifications in Director’s original ideas” (Posner, 1979, p. 932). Posner is somewhat reluctant to grant that vertical integration could disadvantage rivals but concedes in a footnote that capital costs would be adversely affected (p. 936) and subsequently elevates this admission to the text (p. 945). For a more expansive discussion of this and other possible costs of vertical integration, see Williamson (1974, pp. 1456–63).
a vertical merger occurs. The model also assumes that the strategies of
downstream firms are exogenous. Spulber commented that after a ver-
tical merger, the manner in which downstream firms compete might
change, which would affect any evaluation of vertical mergers. Spulber
also noted that the model used constant returns to scale, and he spec-
ulated that if economies of scale existed, monopoly gains from vertical
mergers might be even greater.

Michael Salinger praised the model because it allowed two-part tar-
iffs and relaxed assumptions about contracts. He noted, however, that
the perfect two-part tariffs that result from the model could not exist
under any reasonable set of assumptions. According to Salinger, al-
lowing for perfect two-part tariffs eliminates the success of markup as
an issue in vertical integration.

Steven Salop believed that the model was much better than the tra-
ditional one of the Chicago School. The Chicago School critique of
vertical integration—that no monopoly power could be gained through
a vertical merger—was based, he said, on an overly simple model (with
fixed proportions, constant returns, and so forth). Salop also noted that
Hart and Tirole built a model in which the players are psychologically,
legally, and informationally unable to make commitments. Though he
believed that contract law made it possible to make and enforce com-
mitments, he was pleased that the authors were working out the im-
plications.

Michael Whinston said that once it is acknowledged that vertical
structures involve multilateral supply relations and that there are in-
complete contracts, there will be ex post externalities. There will be a
difference between what is privately optimal and what is socially op-
timal, which means that the parties left out of a vertical merger—the
other competitors and the consumers—might be hurt by it.
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