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**The Competitive Effects of Common Ownership: Ten Points on the Current State of Play - Note by Daniel P. O'Brien**

**Hearing on Common Ownership by institutional investors and its impact on competition**

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[www.oecd.org/daf/competition/common-ownership-and-its-impact-on-competition.htm](http://www.oecd.org/daf/competition/common-ownership-and-its-impact-on-competition.htm)

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## *The Competitive Effects of Common Ownership: Ten Points on the Current State of Play*

Note by Daniel P. O'Brien \*

### 1. Common ownership defined

1. “Common ownership” occurs when one or more owners of a company also own shares of one or more other companies in the same industry.<sup>1</sup> This can occur through individual stock ownership (e.g., a person may own shares in two airlines); stock ownership by institutional investors (e.g., some of BlackRock’s funds hold shares of multiple firms in the same industry); or ownership of one company by another (e.g., one firm may acquire shares of another, or firms may form a joint venture). In the second two cases, the entities that hold the shares are different than the ultimate owners, but the critical economic factors are the same: (1) the owners’ *financial interests*, which determine the distribution of profits across owners; and (2) the nature of *corporate control*, which determines how managers of the companies take into account the preferences of the owners in their decision-making.

### 2. It is not controversial that common ownership that carries control has the potential to harm competition in concentrated markets if the ownership shares are high.

2. In particular, a complete merger is a special case of common ownership in which the merged entity is owned and controlled by the same entities after the merger. There is no controversy in the idea that horizontal mergers in concentrated markets can have anticompetitive effects. Because mergers are a special case of common ownership, there is no controversy in the idea that sufficient common ownership in concentrated markets can have anticompetitive effects either.

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\* Executive Vice President, Compass Lexecon. This note presents science and personal opinion. It borrows heavily from my previous work on common ownership referenced below. The views expressed herein are my own and do not necessarily represent the views of Compass Lexecon. I have not received funding for this note, and I am not being paid for my time participating in this forum.

<sup>1</sup> The terms “partial ownership,” “common ownership,” and “cross ownership” are used in the literature in ways that can create confusion. The theory of partial ownership presented in O’Brien and Salop (2000) examines the roles of financial interests and corporate control by shareholders in determining a firm’s pricing incentives. Partial ownership in that paper encompasses “common ownership” where two or more firms have a common owner that partially owns each of them. Complete mergers also arise as a special case where the merging firms have the same set of owners after the merger. Some authors refer to situations where firms own shares of other firms as “cross ownership,” distinguishing it from common ownership. This case is captured in O’Brien and Salop (2000) by designating the firm as one of the owners and granting it control rights, or by assigning control rights to the firm’s non-common owners.

3. The controversy centers on the competitive effects of common ownership that involves *minority shareholdings*.

### **3. Most common ownership in the economy occurs through investments by institutional investors, and these investments generate obvious benefits.**

4. The rise of institutional investing (e.g., BlackRock, Fidelity, State Street, T. Rowe Price, Vanguard, etc.) has brought portfolio diversification to the masses. Indeed, Azar, Tecu, and Schmalz (2017) observe that institutional investors now own over 70% of the stock of public companies in the US. This fact is not surprising once one recognizes that an institutional investor can diversify the portfolios of thousands of retail investors all at once by taking positions in a basket of stocks. The transaction cost savings for retail investors are obviously large relative to a case where they would otherwise have to diversify their portfolios on their own.

### **4. In assessing the competitive effects of common ownership, a critical, unsettled, question is how firms make decisions when owners have divergent interests.**

5. Most of the literature on common ownership draws on the theory of partial ownership presented in O'Brien and Salop (2000) (hereinafter "OS") and extensions. In that theory, common ownership has anticompetitive effects only if companies take unilateral actions that benefit common owners at the expense of non-common owners. Thus, the theory is *built* on assumptions about how companies' managers weigh divergent interests among shareholders. The weights that managers place on different owners' preferences represent the control or influence weights the owners have over management under the theory.

6. While there are cases where the appropriate control assumptions seem clear, a large dose of humility is warranted in applying this theory in cases where the appropriate control assumptions are not obvious. Common ownership that involves minority shareholdings is an example of the latter case—the appropriate control assumptions are far from obvious.

7. The workhorse assumption in economics, from Arrow/Debrue through modern industrial organization that underpins competition policy, is that firms with minority shareholders seek to maximize own-firm profits. In the OS framework, this assumption arises when managers place all the control weight on shareholders who are not common owners.<sup>2</sup> Lawyers tell me that this assumption is consistent with laws on fiduciary obligation, which require corporate directors to act in the best interests of the corporation and of the shareholders as to their interests in the corporation.<sup>3</sup> Under this assumption, common ownership does not have anticompetitive effects.

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<sup>2</sup> If the firm has no non-common owners, this case is captured by designating the firm itself as an owner and assigning it all of the control weight for that firm.

<sup>3</sup> This means that a director who takes an action that benefits common shareholder 1 at the expense of non-common shareholder 2 violates his or her fiduciary obligation. There are obvious costs involved in enforcing fiduciary obligation requirements. On the other hand, one might expect institutions to evolve that help prevent managers from systematically violating fiduciary obligations in ways that could lead to legal problems.

8. I am not suggesting that managers always ignore the financial interests of common owners. Indeed, the possibility that they might do so is why OS was written. However, any application of the OS framework (or any other framework for evaluating the competitive effects of common ownership) requires assumptions about how ownership translates into control. The economic literature has not produced a definitive, tested prediction as to how minority shareholdings translate into control when owners have divergent interests. Thus, there is no accepted “formula” for how common ownership changes the objectives of firms’ managers from the standard assumption of own-firm profit-maximization. At a macro level, there is no reason to believe that untested assumptions like proportional control, Banzhaff control, or any other specific control assumption provides a basis for sound policy toward common ownership.

### **5. One widely recognized motivation for the acquisition of shares that confer control or influence to the owner is to implement change that makes the target firm more efficient.**

9. In a market economy, free capital movements tend to generate benefits by putting assets into the hands of those who will use them most efficiently. Merger authorities recognize this point in merger guidelines, and this is one reason why authorities do not stop every horizontal merger. Instead, merger authorities recognize the inherent benefit from free capital movements and stop only those mergers that are likely to generate substantial net harm. As a matter of theory, minority shareholdings that carry control or influence have the potential to generate analogous benefits. These potential benefits must be weighed in the common ownership context in the same way that analogous potential benefits are weighed in the merger context.

### **6. There are reasons to be skeptical that influence by common owners over companies they own would generate anticompetitive effects.**

10. If common owners have influence over management, two additional conditions are necessary for their ownership to cause competitive harm: (a) owners must have the incentives to cause managers to take anticompetitive actions; and (b) these incentives must work their way into compensation (directly or indirectly) and induce the desired behavior.

#### **6.1. Incentives**

11. Most common ownership occurs through institutional investors like Vanguard, T. Rowe Price, BlackRock, etc. These asset management firms invest in many companies through many different funds that have different portfolios and different sets of retail investors. A retail investor in a Vanguard fund that owns both United and American airlines (for example) might benefit if Vanguard convinces United’s managers to price less competitively to increase the value of American’s shares. However, a retail investor in a fund that owns United shares but does not own American shares would be harmed by this action. Which retail investor will Vanguard represent?

12. An action by one asset manager to cause a company it owns to behave less competitively affects *all* retail investors in the company, including those that invest through rival asset managers. If BlackRock attempts to convince United to behave less competitively in order to increase American’s profits, T. Rowe Price investors will

benefit more than BlackRock investors if T. Rowe Price owns a greater share of American than BlackRock. In this case, BlackRock's action would diminish its ability to compete for retail investors against T. Rowe Price, effectively shooting itself in the foot.

13. A related point is that any effort by an asset manager to influence the companies it owns is costly, and a substantial portion of the benefits of the effort is likely to accrue to rival asset managers. This creates a free-rider problem that Bebchuk et al. (2017) argue leads to too little effort by institutional investors to exert influence over the companies they own.

14. Mutual funds that own airline shares (for example) also own shares of companies that (i) supply the airlines (e.g., Boeing, GE, Rockwell, etc.), and (ii) purchase airline tickets for business travel. An action by a fund manager that reduced competition among airlines would harm airline suppliers and corporate customers and thereby lower the stock values of those companies. It is far from obvious that a fund manager would want to do this. The typical fund's holdings often include shares of suppliers and customers of the companies they own. Will the manager place greater weight on the externalities between horizontal competitors or the externalities between companies and their complementary suppliers and customers?

15. The OS framework and extensions that researchers are using to model common ownership abstract from these considerations. There is no reason to discount these considerations relative to the effects of common ownership on competition between commonly owned companies.

## 6.2. Compensation.

16. The compensation of managers in major corporations typically involves a fixed salary plus a component that increases with the firm's profits. Such compensation gives managers incentives to choose prices to maximize the profits of the firm. It does not give managers incentives to account for the effects of their pricing decisions on the profits of rival firms.<sup>4</sup> This is inconsistent with the prediction that common ownership causes firms to take unilateral actions that place weight on the returns common owners receive from their positions in rival firms.

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<sup>4</sup> An alternative way that common ownership might affect managers' incentives is by owners threatening to change compensation in some discrete way (e.g., termination) if the managers fail to take into account the effects of their actions on rivals. Credible evidence of such threats and effects would be relevant to the analysis of potential common ownership effects in any investigation. Additionally, Ederer et al. (2017) point out that when managers exert non-contractible (uncompensated) effort to reduce marginal cost, common owners may have incentives to adjust downward the component of compensation related to profits. Although this does not change pricing incentives for any given level of effort, it can lead to higher prices if it causes a reduction in cost-reducing effort and thereby raises firms' marginal costs. In general, the effects of common ownership in environments with uncompensated managerial effort depend in complex ways on how the effort affects costs and demand and whether it creates spillovers with rivals. These ambiguities are common in environments in which vertical contracts (here between owners and firms) are used to align incentives for both price and non-price decision-making.

## 7. The amount of common ownership required to raise significant competitive concerns is an empirical question.

17. Given (i) the open questions about how common ownership translates into control, and (ii) the ambiguity in institutional investors' incentives over how to apply any influence they might have, theory alone does not provide a basis for policy toward common ownership. The competitive effect of common ownership is an empirical question.

## 8. Price-concentration analysis has not identified, and is not capable of identifying, causal linkages between common ownership and competitive effects.

18. The empirical work motivating the surge in interest in common ownership finds positive correlations between price and a measure of concentration—the MHHI—that takes into account common ownership.<sup>5</sup> The MHHI was developed by Bresnahan and Salop (1986) and generalized by OS to measure *concentration* in the presence of common ownership. The MHHI was not created to serve as an explanatory variable in a regression, and there are serious problems with using it that way. Correlations between price and the MHHI do not identify causal relationships between common ownership and price.

19. This is not a small issue. It is a big deal that is too often ignored. I discuss problems with price-concentration regressions in detail elsewhere,<sup>6</sup> but let me provide a brief overview of the problems here in the context of common ownership.

20. The general point is that economic theory does not generate a functional relationship between the equilibrium price in a market and the MHHI or its component parts, the HHI and MHHI delta.<sup>7</sup> This means that the comparative statics generated from equations relating price to these concentration measures have no specific economic interpretation. That is, the derivatives of price with respect to the MHHI and MHHI delta, or less technically, the change in price that occurs with changes in the MHHI and MHHI delta, have no clear meaning. In particular, changes in common ownership that increase or decrease the MHHI can increase or decrease price. In addition, empirical estimates of effects based on specifications that do not properly instrument for the MHHI are likely to show some relationship between price and the MHHI even if common ownership has no effect at all. In short, estimates of effects of the MHHI and MHHI delta on price that come from price-concentration regressions cannot answer the question of whether common ownership has anticompetitive effects.

21. The issues go beyond the empirical endogeneity of the MHHI. To see this, consider the following relationship between price and common ownership estimated in the recent literature:

$$p = \alpha_0 + \alpha_1 X + \alpha_2 Y + \alpha_3 MHHI + \epsilon \quad (1)$$

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<sup>5</sup> See Azar, Schmalz, and Tecu (2017); Azar, Raina, and Schmalz (2016).

<sup>6</sup> See O'Brien (2017).

<sup>7</sup> By “no functional relationship,” I mean that it is not possible to write equilibrium prices as a function of exogenous cost factors, exogenous demand factors, and the MHHI. See O'Brien (2017).

Where  $p$  is price,  $X$  is a vector of cost factors,  $Y$  is a vector of demand factors,  $MHHI$  is the modified Herfindahl-Hirshman index under some assumption about control (say proportional or Banzhaf), and  $\epsilon$  is the usual mean zero random error. The issue most often raised about estimating equation (1) is that the MHHI is endogenous, i.e., correlated with the error. But suppose we estimate this equation using a valid instrumental variables technique that addresses the endogeneity problem. Does this solve the inference problem?

22. The answer is no. Under the null hypothesis that common ownership has no effect,  $\alpha_3 = 0$ , so a finding of  $\alpha_3 \neq 0$  would reject the null. However, the derivative of price with respect to the MHHI in the theoretical relationship  $p = f(X, Y, MHHI)$  can be positive or negative whether an increase in common ownership raises or lowers price.<sup>8</sup> This means that sign of the estimated value of  $\alpha_3$  does not address whether common ownership has pro-competitive or anticompetitive effects.

23. The way forward is to estimate relationships grounded in economic theory: a valid reduced form, or a structural relationship from an oligopoly model that identifies causal effects. Kennedy et al. (2017) explain that the reduced-form approach is generally difficult to apply in the common ownership context. The problem is that in a market with  $N$  competitors, the comparative static effects of common ownership come through  $N \times (N - 1)$  common ownership incentive terms rather than through a single-dimensional index like the MHHI. A further complication is that virtually any oligopoly model predicts that equilibrium prices depend on: (i) interactions among the  $N \times (N - 1)$  common ownership incentive terms, and (ii) interactions between each common ownership incentive term and each market-specific cost and demand factor. Attempts to estimate a reduced-form flexible enough to capture the predictions of the theory confronts a serious curse of dimensionality problem. Depending on the context and the available data, it may not be possible to estimate a reduced-form with all the relevant interactions.

24. A reduced-form approach that can work is to examine the effects of an event that is as close as possible to a natural experiment and changes the extent of common ownership, such as the BlackRock/Barclays merger (see point 9 below). When good natural experiments do not exist, a structural approach may be the only way to identify causal effects.

## 9. Empirical estimates from specifications consistent with the theory of partial ownership do not find a relationship between common ownership and prices in the airline industry.

25. Kennedy et al. (2017) conduct three empirical analyses to assess the effects of common ownership in the airline industry: (i) a price regression approach where the explanatory variables are indices of common ownership that depend on ownership and control primitives but do not depend on market shares; (ii) a difference-in-difference analysis of the effects of the BlackRock/Barclays merger event (in the forthcoming revision); and (iii) a structural oligopoly model of the airline industry that takes into account common ownership. The data was constructed to match that of Azar et al. (2017)

<sup>8</sup> The relationship in (1) does not exist globally over typical oligopoly domains because different levels of common ownership that generate the same MHHI generate different prices. Thus, there is no 1-to-1 mapping between the MHHI and price, and therefore no functional relationship  $p = f(X, Y, MHHI)$ . Some functional relationship does exist locally over some values of common ownership, but the sign of  $\partial p / \partial MHHI$  is not determined by whether common ownership increases or decreases price. See O'Brien (2017).

as closely as possible. None of Kennedy et al.'s analyses show that common ownership increases airfares.

26. Others that have analyzed the effects of common ownership do not find robust evidence that common ownership raises prices.<sup>9</sup> The evidence to date does not show that common ownership has anticompetitive effects.

#### **10. Researchers' understanding of the competitive effects of common ownership is not far enough advanced to formulate general policy toward common ownership.**

27. As explained in points (3) – (6) above, theory alone is not sufficient to establish that common ownership involving minority shareholdings is likely to have significant anticompetitive effects. Given the theoretical ambiguities and uncertainties, the effect of common ownership is an empirical question. The empirical literature to date does not establish that common ownership through minority shareholdings has harmed or is likely to harm competition.

28. A distinction should be made between policy toward common ownership at a macro level—e.g., across industries or even across transactions and other events within a given industry—and at a micro level—such as an antitrust investigation of a particular transaction or business practice. At the macro level, economists' understanding of common ownership is nowhere near where it needs to be to formulate broad policy. The unknowns include (among others): (i) how ownership translates into control or influence; (ii) the incentives of common owners that have influence; and (iii) whether common ownership has reached levels where it raises competitive risks. Broad policy is ill-advised before these factors are better understood.

29. At the micro level, such as a particular merger investigation, it may be possible to gather evidence about factors (i) through (iii). For example, evidence in an investigation that a firm pursues a given strategy because of its effect on rivals' profits would be evidence that could affect conclusions about the impact of common ownership in a specific circumstance. Where such evidence presents itself, it should obviously be weighed and appropriately taken into account. That said, there is nothing in the empirical literature to date suggesting that common ownership that involves minority shareholdings is likely to generate anticompetitive effects, and there are good reasons to expect that such effects are unlikely.

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<sup>9</sup> See Gramlich and Grundl (2017) and Dennis, Gerarde, and Schenone (2017).

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