THE GROWING PROBLEM OF HORIZONTAL SHAREHOLDING

BY EINER ELHAUGE[1]

I. INTRODUCTION

A little over a year ago, I published my *Horizontal Shareholding* article, which pointed out that horizontal competitors increasingly have the same leading shareholders, explained why this was likely to lessen competition, and argued that this lessening of competition could help explain economic puzzles like the use of inefficient methods of executive compensation and the growing gap between corporate profits and investment.[2] I recommended investigating high levels of horizontal shareholdings in concentrated markets and bringing antitrust actions when likely anticompetitive effects were established.

Since then, the evidence has gotten even stronger, showing that horizontal shareholding has continued to grow and that markets with higher levels of horizontal shareholding are strongly correlated with inefficient executive compensation and the corporate profit-investment gap. Although objections to my analysis have been raised in various articles, some funded by institutional investors with large horizontal shareholdings, the weakness of those objections has only confirmed the advisability of taking antitrust action to address the problem.

II. THE CONTINUED SPREAD OF HORIZONTAL SHAREHOLDING

Relying on the path-breaking work of Azar, Schmalz, Tecu and Raina, my article pointed out that a small set of institutional investors have become leading shareholders at the largest competitors in airline, banking, computer and pharmacy markets, and that empirical studies had confirmed that these horizontal shareholdings have anticompetitively affected airline and banking markets. My article also suggested that horizontal shareholding was likely a problem in many other markets because institutional investors had grown from owning 34 percent of all U.S. common stock in 1980 to 67 percent in 2010 and owned 80 percent of all stock in S&P 500 corporations by 2012. Further, although all sorts of institutional investors have portfolios that include horizontal shareholdings, index/ETF funds necessarily do and their share of institutional investor assets was growing rapidly.

1 Petrie Professor of Law, Harvard Law School.

2 Elhauge, *Horizontal Shareholding*, 129 Harvard Law Review 1267 (2016), https://ssrn.com/abstract=2632024.

Empirical work since then has not only confirmed widespread horizontal shareholding, but also indicated the problem has grown even worse. By 2015, the three biggest index funds (BlackRock, Vanguard and State Street) together constituted the largest shareholder in 88 percent of S&P 500 firms and more generally at 1,662 listed U.S. corporations, where their average ownership was 17.6 percent of the corporation's stock.[3] The evidence also shows that in recent decades the level of institutional shareholding passed a tipping point, such that the probability that two competing firms have a common shareholder holding at least 5 percent of each has increased from 16 percent in 1999 to 90 percent by the end of 2014.[4]

New work has also confirmed worrisome levels of horizontal shareholding in many markets. The antitrust agencies measure market concentration by HHIs and presume that a merger will anticompetitively raise prices if it increases HHI by more than 200 and results in an HHI over 2500. With horizontal shareholding, the best measure of likely anticompetitive effects is MHHI, which equals HHI plus a ΔMHHI that reflects the level of horizontal shareholding. From 1994 to 2013, the ΔMHHI in the average market increased from 942 to 1771 in manufacturing, from 926 to 1572 in services, from 882 to 1540 in wholesale, from 1102 to 2243 in retail, from 1227 to 1899 in mining, from 1103 to 1763 in construction, from 1557 to 2322 in transportation, and from 1121 to 1968 in finance/insurance/real estate.[5] This brought the average market MHHI in each of these sectors above 3600.

These statistics are likely even worse today because of the continued growth and consolidation of index funds that necessarily have horizontal shareholdings. By June 2016, the three biggest index funds managed over 90 percent of all assets held by all index funds.[6]

III. THE INCREASINGLY POWERFUL PROOF ON ANTICOMPETITIVE MECHANISMS

The natural concern raised by horizontal shareholdings is that firms are less likely to compete vigorously with each other if they have common owners. Because the financial interest of horizontal shareholders in lessened competition is so clear, critics instead focus on disputing the existence of any mechanism for horizontal shareholder interests to influence the competitive decisions of corporate managers.

But the mechanisms do not seem at all mysterious. Decades of work on corporate governance has emphasized that managers are disciplined to serve shareholder interests by a combination of executive compensation incentives, shareholder voting, control contests, capital markets, labor markets and legal duties.[7] Although these mechanisms cannot totally eliminate agency slack, they do assure managers are primarily influenced by the interests of their shareholders. Indeed, if managers do not primarily act in the interests of shareholders, our economic system has problems even bigger than horizontal shareholding

The problem is structural. Horizontal shareholders clearly benefit less from competition among the firms in which they are invested. Corporate rights and markets are designed to make sure managers primarily operate corporations in the interests of their shareholders. Thus, increased horizontal shareholdings will structurally lead businesses to compete less vigorously against each other. This anticompetitive effect does not require any communication between the managements of different corporations, because each corporation's management has its own incentives to compete less in order to please its own shareholders. Nor does the anticompetitive effect require any communication between shareholders and managers, because managers know whether their leading shareholders are horizontal and know that lessening competition benefits those shareholders. Work since my article has added further confirmation of these structural incentives.

3 Fichtner, et al., *Hidden power of the Big Three? Passive index funds, re-concentration of corporate ownership, and new financial risk*, Business & Politics 1, 16-17 (April 25, 2017), https://doi.org/10.1017/bap.2017.6.

4 Azar, *Portfolio Diversification, Market Power, and the Theory of the Firm* at 2 & Figure 1 (Jan. 30, 2017), https://ssrn.com/abstract=2811221.

5 Anton et al., *Common Ownership, Competition, and Top Management Incentives* at Table 2B (August 15, 2016), http://ssrn.com/abstract=2802332.

6 Fichtner, supra note 3, at 7.

7 See, e.g. Easterbrook, *Managers' Discretion and Investors' Welfare: Theories and Evidence*, 9 Del. J. Corp. L. 540, 543 (1984).

Executive Compensation. Holmström's Nobel prizewinning work has long shown that it would be efficient to base incentive compensation only on the performance of the executive's firm relative to others firms, filtering out general industry performance.[8] So it has been a puzzle that a major part of actual executive compensation is based on industry performance. Azar, Schmalz and Tecu had posited that horizontal shareholding might explain this puzzle.[9] My article showed that the pattern of then-existing empirical evidence was not only consistent with their hypothesis, but also conflicted with alternative explanations like shareholder error or powerlessness. That empirical evidence showed that: (1) in less competitive markets, executive compensation was based more on industry performance and less on firm performance; (2) executive compensation had become increasingly based on market performance since the 1990s, which coincides with a dramatic rise in horizontal shareholding; and (3) large institutional investors voted against proposals to make executive compensation based more on individual corporate performance.[10]

My analysis of executive compensation has been critiqued in a paper by economic consultants O'Brien and Waehrer that was funded by the Investment Company Institute, which represents institutional investors and was headed for the last three years by the CEO of Vanguard.[11] They argue that executive compensation cannot encourage managers to take into account the profits of rival firms because executive compensation is partly fixed and does increase somewhat with increased firm profits.[12] However, a recent mathematical proof shows that increased levels of horizontal shareholding mean that shareholder interests are maximized by executive compensation that increases the weight put on fixed pay and rival-firm performance relative to own-firm performance, rather than (as O'Brien and Waehrer wrongly assume) by compensation that puts no weight on fixed pay or own-firm performance.[13] If all shareholders have parallel horizontal holdings in all firms (such as with index funds), then shareholder profits will be maximized by compensating executives just as much for their own firm's performance as for rival performance, which will lead to monopoly pricing. The compensation package that is optimal for horizontal shareholders also includes some fixed pay because it reduces executive risk while providing no incentive to favor own-firm profits over rival profits. Importantly, this proof holds even though uncoordinated competition among the firms is assumed.

A new empirical study by Anton et al. has also shown that (just as this proof predicts) in markets with higher horizontal shareholding levels, firms compensate executives "less for their own firm's performance and more for their rival's performance."[14] The statistical confidence level of this finding is over 99 percent. Also consistent with this proof, higher horizontal shareholding is associated with increased fixed pay and 25 percent higher total pay. Such compensation methods give managers direct incentives to lessen competition, without requiring any shareholder communications on competitive strategy.

O'Brien and Waehrer critique the Anton study because Kwon reached the opposite conclusion, which they attribute to the fact that Kwon used percentage-based measures of incentive pay rather than dollar-based measures.[15] But they are mistaken: the Anton study reaches the same results with percentage (i.e. log) based measures.[16] The more likely explanation is that Kwon's MHHI calculations are different, perhaps because Kwon does not report making efforts to check the Thomson-Reuters database against other sources to remove inaccuracies.[17] Kwon's result also conflicts with a separate study by Liang

8 Holmström, *Moral Hazard in Teams*, 13(2) Bell Journal of Economics 324-40 (1982).

9 Elhauge, supra note 2, at 1279.

10 Id. at 1279-81.

11 O'Brien & Waehrer, *The Competitive Effects of Common Ownership: We Know Less than We Think* at n.1 (Feb. 22, 2017), https://ssrn.com/abstract=2922677; https://www.ici.org/about_ici/annuals.

12 O'Brien & Waehrer, supra note 11, at 5-6.

13 Anton, supra note 5, at 1, 4, 14-17.

14 Id. at 1, 5-6, 26-28, Table 4.

15 O'Brien & Waehrer, supra note 11, at 31-32.

16 https://sites.google.com/site/martincschmalz/presentation_AEAfinal.pdf?attredirects=0&d=1 at Slide 21 (Jan. 7, 2017).

17 Kwon, *Executive Compensation under Common Ownership* at 13 (April 13, 2017) (reporting using the Thomson-Reuters database without any corrections); cf. Azar, Schmalz & Tecu, *Anti-Competitive Effects of Common Ownership* at 10 n.7 (May 16, 2017), https://ssrn.com/abstract=2427345 (noting that because the "Thomson-Reuters dataset is well-known to be incomplete and feature various other inaccuracies," they checked it against other sources to remove inaccuracies).

that finds having a common horizontal shareholder with at least a 5 percent stake sharply increases the degree to which executive compensation is based on rival stock returns rather than own-firm stock returns.[18] Finally, the Kwon paper is limited to studying pay-based compensation, but executive compensation is actually dominated by wealth-based compensation like grants of stock or options. Anton et al. show that if one includes wealth-based compensation, their results get even stronger and are robust to alternative definitions of the markets or horizontal shareholding levels.[19]

Another critique comes from Professors Rock and Rubinfeld, the latter of whom has been a consultant for the airlines whose horizontal shareholdings have been found to create anticompetitive effects.[20] Rock and Rubinfeld claim executive compensation is an unlikely mechanism "given the limited role of shareholder voting in setting managerial compensation."[21] However, they themselves acknowledge that corporations have long had to get shareholder approval of incentive-based pay and since 2011 need shareholder approval for "all aspects of compensations for top executives." They also point out that compensation proposals are "approved 92% of the time" and that institutional investors acknowledge it is efficient to base incentive compensation solely on own-firm performance, rather than partly on industry performance.[22] But that just confirms the underlying puzzle: why aren't institutional investors more often voting against executive compensation methods that they know are inefficient? The economically rational explanation is that they have incentives not to do so when they have horizontal shareholdings, and that explanation fits the proven empirical link between executive compensation methods and horizontal shareholding.

Shareholder Voting. Some doubt that shareholder voting is likely to affect manager decisions because managers are rarely voted out of office. But politicians are also rarely voted out of office, and no one doubts that changes in a politician's electorate can alter the behavior of politicians, precisely because they want to reduce the odds of being voted out of office. Moreover, my article showed that the pattern of empirical evidence on management *ousters* (which necessarily reflect an inability to secure re-election votes) was also far more consistent with horizontal shareholding influence than with alternative explanations like shareholder powerlessness. That empirical evidence showed that: (1) before the 1990s explosion in horizontal shareholding, managers were ousted based on individual corporate performance, with industry performance filtered out; (2) since the 1990s explosion in horizontal shareholding, decisions to oust managers have been driven almost as much by industry performance as by individual corporate performance; (3) the influence of industry performance on ouster decisions does not vary with the length of executive tenure or degree of executive power; and (4) 53 percent of institutional investors admitted in a survey that they tried to influence managers by voting against them.[23]

Work since my article has only confirmed that the voting of horizontal shareholders is likely to influence managers. New scholarship mathematically proves that if managers try to maximize either their expected vote share or their probability of winning re-election, managers will maximize the weighted average of their shareholders' profits from all their stockholdings.[24] If all shareholders have equivalent horizontal holdings across all firms (such as with indexing), then this will lead managers to have each firm price at monopoly levels despite nominal competition. If managers maximize their expected vote share, shareholders will be weighted proportionally to their voting shares, so increased horizontal shareholding will proportionally increase prices. If managers maximize their probability of re-election, shareholders will be weighted by the odds that the particular shareholder's vote will be pivotal, which gives extra weight to the largest shareholders, who typically are now horizontal shareholders. This proof requires no communication between firms or between managers and shareholders, though shareholder-manager communication can exacerbate the problem by giving more weight to the shareholders who communicate.

18 Liang, *Common Ownership and Executive Compensation* (October 2016).

19 Anton, supra note 5, at Appendix B.

20 Rock & Rubinfeld, *Defusing the Antitrust Threat to Institutional Investor Involvement in Corporate Governance* at n.* (March 1, 2017), https://ssrn.com/abstract=2925855.

21 Id. at 9-10.

22 Id. at 10, 16.

23 Elhauge, supra note 2, at 1279-81, 1307.

24 Azar, supra note 4, at 12-16.

New empirical work has also rebutted some claims about the ineffectiveness of shareholder voting. Some suggest that institutional investors are unlikely to be influential because their separate funds vote separately. But recent empirical work shows that institutional investors like BlackRock, Vanguard and State Street closely control the voting of all their funds. For every 100,000 shareholder proposals, the number of which resulted in any of their funds voting different from the others was only 6 at Vanguard, 18 at BlackRock and 195 at State Street.[25] This same study shows that, although these institutional investors vote against management recommendations only 10 percent of the time, about half of their opposition votes are on board re-elections.

Nor is there any need to vote against managers if the possibility of such a vote suffices to make managers act in the interests of voters. BlackRock has reportedly said that "meetings behind closed doors can go further than votes against management" and gives executives one year before voting against them if they do not listen.[26] State Street has likewise stated that its ability to vote against management "ensures" its "interests are given due consideration."[27] Rock and Rubinfeld argue that shareholder voting is unlikely to affect competitive strategy because proxy statements only contain information on director qualifications and compensation.[28] But that only accentuates the influence of institutional investors because they likely have other sources of information on a director's competitive strategy, whereas small non-horizontal shareholders are more likely to rely on those uninformative proxy statements.

Shareholder Communications. Although direct communications between managers and horizontal shareholders are not necessary for anticompetitive effects, this does not mean that such communications do not occur. As I noted in my article, 63 percent of institutional investors admitted that they engaged in direct discussions with corporate managers, and one admitted that high on the list of topics was urging managers to raise prices rather than compete for market share.[29] The evidence of such communications has grown even stronger, now indicating that in a recent year BlackRock had over 1,500 private engagements with firms that they held and Vanguard had over 800.[30] BlackRock's CEO has stated, "we are taking a more active dialogue with our companies and are imposing more of what we think is correct."[31] He even declared, "We can tell a company to fire 5,000 employees tomorrow."[32] Because such communications are not necessary for anticompetitive effects, they should not be required in an antitrust action, but when present they do exacerbate those anticompetitive effects.

Other Mechanisms. There are also many other mechanisms for horizontal shareholder influence. The market for corporate control means that managers will want the backing of their horizontal shareholders in the event of a control contest. For example, a control contest designed to get managers of DuPont to behave more competitively was defeated by the decisive votes of horizontal shareholders.[33] Capital markets mean managers will fear that displeased horizontal shareholders might sell their investments, which would depress the stock price and executive stock options. For example, Southwest Airlines reportedly reduced capacity increases after being critiqued by investors who were urging all airlines to hold down capacity.[34] Labor markets mean that managers know that their ability to be promoted to the next job at another corporation will be affected by how favorably disposed its leading shareholders will be. Finally, because competing vigorously is hard work for managers, they are less likely to do it unless their shareholders are actively pressing them to compete. Horizontal shareholdings can thus make managers less likely to compete simply because they make shareholders less willing to exert

25 Fichtner, supra note 3, at 19-20.

26 Id. at 21-22.

27 Azar, Schmalz & Tecu, supra note 17, at 36.

28 Rock & Rubinfeld, supra note 20, at 9.

29 Elhauge, supra note 2, at 1269-70, 1307.

30 Fichtner, supra note 3, at 21.

31 Id.

32 Anton, supra note 5, at 2 n.3.

33 Elhauge, supra note 2, at 1270-71.

34 Drew, "*Airlines Under Justice Dept. Investigation Over Possible Collusion*," N.Y. Times (July 1, 2015).

effort to pressure managers to compete.[35]

Fiduciary Duties. Notwithstanding all these mechanisms, O'Brien and Waehrer argue that horizontal shareholders will not affect corporate decision-making because fiduciary duties require managers to take into account the interests of all their shareholders, including non-horizontal shareholders.[36] But the mechanisms described above assume managers *do* take into account the interests of all their shareholders; the proofs show that taking all shareholder interests into account produces less competition the more those shareholders are horizontally invested. Rock and Rubinfeld argue that the mix of horizontal and non-horizontal shareholders makes shareholder interests too heterogeneous for managers to consider.[37] But the proofs show that managers have incentives to maximize the weighted average of those heterogeneous shareholder interests, and thus to compete less the more those interests are horizontal. Further, although horizontal shareholding lessens competition that would be profitable for a firm acting individually, it also lessens competition from rival firms, so the net effect of horizontal shareholding is to *increase* the profits of all the affected firms. The critics do not explain why they think non-horizontal shareholders would complain about conduct that on balance benefited them, let alone how they could show injury from any claimed fiduciary duty violation. In any event, the operational decisions affected by horizontal shareholding are protected from fiduciary duty claims by the business judgment rule.

Investor Incentives. The Rock/Rubinfeld and O'Brien/Waehrer papers also argue that, even though horizontal shareholders profit from lessening competition, they will not exert any effort to encourage managers to lessen competition because the anticompetitive profits will accrue to all investors whether or not they exert such efforts.[38] Instead, these papers argue that horizontal shareholders (especially index funds) will compete by minimizing effort costs. But when making decisions on executive compensation, board elections, control contests, stock sales or hiring, it takes no more effort for horizontal shareholders to favor than oppose the decision than lessens competition, so they have clear incentives to favor such decisions in order to increase their profits. Further, one of the mechanisms is that horizontal shareholders may simply do nothing to pressure managers to compete, which actually takes less shareholder effort.

IV. THE INCREASINGLY STRONG EVIDENCE OF ANTICOMPETITIVE EFFECTS

Empirical studies of the airline and banking industries have proven the anticompetitive effects of high levels of horizontal shareholding in concentrated markets.[39] Those empirical studies confirm that the above mechanisms must in fact suffice to get managers to take into account the anticompetitive interests of horizontal shareholders. Since then, those studies have faced critiques, but those critiques are either misplaced or, when taken into account, indicate the anticompetitive effects are even stronger.

Rock and Rubinfeld's first critique is that the airline study defined markets by airport pair, rather than by city pairs that include all airports in each city.[40] But a revision of the airline study shows that using city pairs actually makes the harmful price effects *larger*.[41] Rock and Rubinfeld also argued that prices might be lower in routes with lower ΔMHHI because of the presence of low-cost carriers like Southwest.[42] But the airline study controlled for the presence of Southwest or other low-cost

35 Azar, Schmalz & Tecu, supra note 17, at 31-32.

36 O'Brien & Waehrer, supra note 11, at 6, 33-34.

37 Rock & Rubinfeld, supra note 20, at 4-8, 10.

38 Rock & Rubinfeld, supra note 20, at 7; O'Brien & Waehrer, supra note 11, at 32-33.

39 Azar, Schmalz & Tecu, supra note 17; Azar, Raina & Schmalz, *Ultimate Ownership and Bank Competition* (July 24, 2016), http://ssrn.com/abstract=2710252.

40 Rock & Rubinfeld, supra note 20, at 12.

41 Azar, Schmalz & Tecu, supra note 17, at 17 & Table 4.

42 Rock & Rubinfeld, supra note 20, at 13-14.

carriers.[43] Rock and Rubinfeld further argued that the results might be affected by changes in fuel costs or differences in route size, but the airline study already used fixed effects that controlled for changes in fuel costs and route characteristics. The revised airline study adds controls for the possibility that fuel costs might have different effects in routes with longer distances, and that change also makes the adverse price effects even *larger*.[44]

O'Brien and Waehrer begin by asserting that articles like mine rely on a claim that if one investor owns 5 percent of two firms in a moderately concentrated market, then prices will necessarily rise, no matter what the shareholding of other firms, which they assert is implausible.[45] But that was not at all my claim. My claim was that the theoretical and empirical work supported a conclusion that antitrust agencies should "investigate horizontal stock acquisitions that have created, or would create, a ΔMHHI of over 200 in a market with an MHHI over 2500, in order to determine whether those horizontal stock acquisitions raised prices or are likely to do so."[46] If one investor owns 5 percent in two firms, each with a 20 percent market share in a moderately concentrated market, and the other investors are not horizontally invested and each hold 5 percent of one corporation's stock in the market, then the ΔMHHI would be only 40. My analysis does not claim that a ΔMHHI of 40 warrants even an investigation, let alone a conclusion that prices were necessarily increased.

O'Brien and Waehrer also contest the assumption of proportional control that the prior studies used to calculate MHHIs. They argue that if one horizontal shareholder has one percent of each firm and the remaining shareholders are trivially small, the assumption of proportional control results in a counterintuitive conclusion that the one percent shareholder has absolute control.[47] This argument fails for several reasons. First, their posited pattern of horizontal shareholding conflicts with the reality that large institutional investors on average own 80 percent of stock at large corporations and the big three index funds alone on average have 17.6 percent. Second, it is not so counter-intuitive for a shareholder with a small absolute share to control a corporation when the remaining shareholders are trivially small. They have actually done so in the past.[48] We do not see that situation much nowadays because the growth of institutional investors now means that the remaining shareholders are never trivially small. Third, the revised airline study affirmatively showed that relaxing the assumption of proportional control did not change its results.[49] That study gets similar results if it includes only large shareholders or if it instead (as O'Brien and Waehrer suggest) weighs each shareholder by the probability that its vote will be pivotal. Fourth, because my approach merely calls for investigation in cases where stock acquisitions result in high MHHIs and ΔMHHIs, it always leaves it open for parties to argue that their particular case has some unique features that indicate unlikely price effects.

O'Brien and Waehrer's main argument is that, when markets have an asymmetry that makes output adjustments feasible for some firms but not others, then: (1) an increase in horizontal shareholding that increases prices may reduce output only at the flexible firms, which can reduce their market shares in a way that reduces MHHI and ΔMHHI, creating a spurious negative correlation between prices and MHHI and ΔMHHI even though horizontal shareholding actually increases prices; (2) increased demand might increase prices and output at only the flexible firms, increasing their market shares in a way that increases MHHI and ΔMHHI, producing a spurious positive correlation between prices and MHHI and ΔMHHI even if horizontal shareholding has no effect on prices.[50] Rock and Rubinfeld echo the latter claim that increased demand on some routes might be increasing both ΔMHHI and prices.[51]

43 Azar, Schmalz & Tecu, supra note 17, at 14-15, Tables 3-7, Table C1-C3.

44 Id. at 14-15 & Tables 3-7.

45 O'Brien & Waehrer, supra note 11, at 3.

46 Elhauge, supra note 2, at 1303.

47 O'Brien & Waehrer, supra note 11, at 29-30.

48 *Caplan v. Lionel Corp.*, 246 N.Y.S.2d 913 (1964) (describing case where 3 percent of stock sufficed to control 7 out of 10 seats on the board of directors).

49 Azar, Schmalz & Tecu, supra note 17, at 17, 24-26.

50 O'Brien & Waehrer, supra note 11, at 15-18, 23-25.

51 Rock & Rubinfeld, supra note 20, at 13.

Their argument has several problems. First, they offer no evidence to think actual markets usually have the sort of sharp asymmetry they posit. The markets in which ΔMHHIs are high are generally oligopoly markets without sharp asymmetries, and O'Brien and Waehrer acknowledge that in symmetric oligopoly markets, horizontal shareholding will increase both price and MHHI.[52] Nor do they offer any evidence that only some airlines or banks had output flexibility in the studies they critique.

Second, to the extent such unusual asymmetries create the spurious negative correlation they posit, it actually makes the empirical studies conservative, because those studies find a positive correlation between ΔMHHI and prices despite any such spurious negative correlation in some markets where increased horizontal shareholding actually increased prices. Such spurious negative correlations would mean that horizontal shareholding increases prices even *more* than the empirical studies indicate.

Third, we can rule out the claim that increased demand might create a spurious positive correlation between ΔMHHI and prices, because the airline study showed that ΔMHHI not only increased prices but also *decreased* output.[53] That decrease in output is inconsistent with the claim that the correlation is driven by demand increases.

Fourth, O'Brien and Waehrer acknowledge that their critique does not consider many other control variables used in the airline and banking studies.[54] Since then, the airline study has added more tests that further confirm their results are not driven by any alleged endogenous effect of prices on market shares and MHHI levels. If price increases were causing increases in ΔMHHI, rather than vice versa, then higher prices should be correlated with later increases in ΔMHHI. An additional test showed they are not, whereas increases in ΔMHHI are correlated with later increases in prices.[55] Likewise, if price changes were causing changes in market share that changed ΔMHHI, then they should correlate even if one measured ΔMHHI using only smaller or short-term shareholders unlikely to exert influence. But additional tests show there is no such correlation and that instead the correlation between prices and ΔMHHI is driven almost entirely by the large long-term shareholders that are likely to exert influence over corporate decision-making.[56]

Fifth, the empirical studies had already used instrumental variables to address endogeneity concerns. Rock and Rubinfeld argue that the Delta/Northwest merger might be a confounding event, but the original airline study controlled for this merger and the revised version added further controls for it.[57] O'Brien and Waehrer complain that the airline study used an instrumental variable that controlled for the endogeneity of MHHI but not of HHI.[58] But the revised airline study controls for the endogeneity of HHI by using pre-period measures of HHI, and the result is an even *larger* price effect of 10-12 percent.[59]

To avoid the possibility that price effects might endogenously affect the firm market shares that are components of MHHI, Jacob Gramlich and Serafin Grundl instead use a measure that excludes the market share components of MHHI.[60] The problem with their approach is that the effect of horizontal shareholding on competition in fact depends not only on the level of horizontal shareholding, but also on firm market shares. Their measure thus effectively eliminates this endogeneity concern by using a measure that is far less relevant to anticompetitive effects. So it is not surprising that if one uses their measure, the effects become smaller and more mixed, as they find for the banking study. The revisions to the airline study provide far better ways of addressing any concern about endogenous effects on market shares without abandoning relevance to the

52 O'Brien & Waehrer, supra note 11, at 17.

53 Azar, Schmalz & Tecu, supra note 17, at 3, 23-24 & Table C.4.

54 O'Brien & Waehrer, supra note 11, at 25.

55 Azar, Schmalz & Tecu, supra note 17, at 18 & Table 5.

56 Id. at 4, 24-25 & Tables C.5-C.6.

57 Id. at 21-22.

58 O'Brien & Waehrer, supra note 11, at 25-26 & Table 7.

59 Azar, Schmalz & Tecu, supra note 17, at 3-4, 38 & Table 6.

60 Jacob Gramlich and Serafin Grundl, *Testing for Competitive Effects of Common Ownership* at 8-9 (April 21, 2017), https://www.federalreserve.gov/econres/feds/files/2017029pap.pdf.

anticompetitive concern.

Finally, O'Brien and Waehrer acknowledge that their critique also applies to the well-accepted use of HHIs in merger analysis.[61] They argue that this prevailing usage is fine because HHIs are just used to guide enforcement and as a rough gauge of likely anticompetitive effects. But that is no argument against my approach, which similarly uses MHHI and ΔMHHI to guide investigation and considers any other case-specific evidence bearing on the likelihood of adverse price effects from horizontal shareholding. Indeed, they admit that MHHI provides a rough gauge of the likely anticompetitive effects from horizontal shareholding.[62] Thus, their argument at most suggests that my approach is unduly conservative because, if their posited asymmetry ever actually existed and meant that stock acquisitions in a market might raise prices while reducing MHHI, those acquisitions might escape investigation under my approach. In contrast, if stock acquisitions resulted in a high MHHI and ΔMHHI, but some odd asymmetry made price effects unlikely in that market, that fact would come out in the investigation I recommend and thus not lead to over-enforcement.

V. THE GROWING EVIDENCE OF MACROECONOMIC HARM

My article argued that the anticompetitive effects of unchecked horizontal shareholding could also help explain some macroeconomic phenomena. Again, the evidence on this score has only become stronger.

First, my article showed that from 2000 to 2015, the U.S. experienced historically low corporate investment despite high profits and enormous fiscal and monetary stimulus.[63] As Krugman noted, the logical explanation was that anticompetitive market power was increasing profits by reducing output. But that raised the puzzle of what exactly was causing this increase in anticompetitive market power. I suggested that "perhaps" horizontal shareholding could "help explain" this phenomenon, both because horizontal shareholding was increasing dramatically during this period and because it was the one antitrust problem we were doing nothing about.[64] But I acknowledged it was "unclear" how large the macroeconomic effects of preventing anticompetitive horizontal shareholding would be.[65]

Professor Baker has questioned my analysis on the ground that while institutional investor ownership started rising in 1980, the divergence between corporate profits and investment did not begin until at least 2000.[66] However, recent work shows that the combination of growing institutional ownership levels and a shift to index funds reached a tipping point for horizontal shareholding starting in 1999, with the probability of two competing firms having a large common shareholder increasing from 16 percent in 1999 to 90 percent by the end of 2014.[67] This sharp rise in horizontal shareholding coincides with the period of growing divergence between corporate profits and investment. Baker also suggests that the divergence might not have begun until 2008, when the Great Recession began, but recent empirical work confirms that it began in 2000.[68]

To be sure, my article acknowledged that economic factors other than horizontal shareholding might also be contributing causes. But since my article, new empirical work has directly found that the gap between corporate investment and profitability is driven by the level of horizontal shareholder ownership in concentrated markets.[69] This new empirical evidence now affirmatively establishes a link between anticompetitive horizontal shareholding and the economy-wide lack of corporate

61 O'Brien & Waehrer, supra note 11, at 14-15, 16-17.

62 Id. at 34.

63 Elhauge, supra note 2, at 1281-83.

64 Id. at 1283.

65 Id. at 1290.

66 Baker, *Overlapping Financial Investor Ownership, Market Power, and Antitrust Enforcement: My Qualified Agreement with Professor Elhauge*, 129 Harvard L. Rev. Forum 212, 219 (2016).

67 Azar, supra note 4, at 2 & Figure 1.

68 Gutiérrez & Philippon, *Investment-Less Growth: An Empirical Investigation* a 2, 5-11 (December 2016), http://www.nber.org/papers/w22897.

69 Id. at 3-4, 29-35.

investment that has contributed to low economic growth in recent decades. This new evidence also indicates that the driving cause cannot be general macroeconomic, technological or policy trends, such as recessions, increased automation, decreased productivity, a slowdown in technological innovation or government spending, taxes or labor law changes. If such general trends were the cause, they should result in a profit-investment gap across the economy; they cannot explain why the gap is instead driven by concentrated markets with high horizontal shareholdings.

Second, I observed that the rise in horizontal shareholding since 1980 has coincided with a rise in economic inequality that began in 1980, though I stressed that there were many other factors that could also explain this rise.[70] Since then, the evidence connecting horizontal shareholding to economic inequality has only gotten stronger. During the same 1999-2014 period when the probability that two competitors had a large common shareholder went from 16 percent to 90 percent, we have had the highest growth in corporate profits and greatest decline in labor's share of national income since World War II.[71] Further, the study showing that horizontal shareholding in concentrated markets has driven the gap between high corporate profits and low corporate investment confirms a connection to economic inequality. The reason is that those high corporate profits go to shareholders who are disproportionately wealthy and reflect high prices that are disproportionately born by the non-wealthy, and the lack of corporate investment depresses employment and wages in a way that also disproportionately harms the non-wealthy.[72]

VI. THE INCREASING CASE FOR ANTITRUST ACTION

My argument for an antitrust law remedy is straightforward. Clayton Act Section 7 bans any stock acquisition that substantially lessens competition. If horizontal shareholdings in some concentrated market are shown to create anticompetitive effects, then the stock acquisitions that created those horizontal shareholdings substantially lessen competition and thus violate the plain meaning of Clayton Act Section 7.[73] The solely-for-investment "exception" is not to the contrary because: (1) it requires a lack of influence that institutional investors typically do not satisfy; and (2) it is not actually an exception, but rather provides that investor passivity triggers a requirement to show that the substantial lessening of competition was intended or actually occurred (whereas without investor passivity, it suffices to show such anticompetitive effects "may" occur).[74]

The Rock/Rubinfeld Critique. Rock and Rubinfeld critique my antitrust law analysis.[75] But nothing in their critique explains how this statutory text can plausibly be interpreted to permit horizontal stock acquisitions that substantially lessen competition. Nor are any of their critiques individually persuasive.

First, they inaccurately assert that the only thing I cited for my antitrust law conclusion is the *Dairy Farmers* case.[76] Not so. I also cited the plain meaning of the statutory text, other cases, and the agency guidelines.[77] The only point for which I cited *Dairy Farmers* (and well as other sources) was simply that stock acquisitions that substantially lessen competition are illegal even if they do not confer control.[78] Rock and Rubinfeld assert *Dairy Farmers* is inapposite because on their reading of its facts there was control. But they ignore the reality that the pages of *Dairy Farmers* that I cited expressly stated, based on a review of Supreme Court caselaw, "We do not agree with the ... conclusion that a lack of control or influence precludes a Section 7 violation" because "even without control or influence, an acquisition may still lessen competition."[79] Rock and

70 Elhauge, supra note 2, at 1291-1301.

71 Azar, supra note 4, at 2 & Figure 2.

72 Elhauge, supra note 2, at 1292-97.

73 Id. at 1302-04.

74 Id. at 1305-08.

75 Rock & Rubinfeld, supra note 20, at 22-24.

76 Id. at 22.

77 Elhauge, supra note 2, at 1302-08.

78 Id. at 1303 & n.178, 1308 & n.203.

79 *United States v. Dairy Farmers of Am.*, Inc., 426 F.3d 850, 859–60 (6th Cir. 2005).

Rubinfeld's contrary claim that control is required also conflicts with all the authority collected in Areeda and Hovenkamp's antitrust treatise.[80]

Second, Rock and Rubinfeld inaccurately assert that for institutional investors I "largely concede[d] that the investments would fall within the first clause" of the solely-for-investment exception.[81] In fact, my article spent three pages explaining that this is untrue because institutional investors typically exert too much influence to be regarded as passive.[82] Since then, the Areeda/Hovenkamp treatise has expressly agreed with my conclusion, stating "among large institutional investors, complete passivity is exceptional."[83]

Third, Rock and Rubinfeld argue that the second clause of the solely-for-investment exception is satisfied for institutional investors because their usage of stock differs from the *DuPont* case, in which "the 'use' of the stock went beyond 'normal' corporate governance engagement (such as voting the shares and engaging with management on strategic direction)."[84] But *DuPont* never holds that activities beyond those "normal" shareholder actions are required to lose the passive investor exception, and such a holding would conflict with the reality that the second clause expressly denies the exception to passive investors "using the [acquired stock] *by voting or otherwise* to bring about, or in attempting to bring about, the substantial lessening of competition."[85] This statutory language cannot possibly be squared with Rock and Rubinfeld's claim that the exception applies when investors vote their shares in ways that help substantially lessen competition. As for the engagement on strategy that they would immunize, they themselves admit that "institutional investors routinely discuss with the managers of portfolio firms … suggestions … that increasing capacity might be ill advised."[86] The routine urging that firms refrain from capacity increases is precisely what one would expect from horizontal shareholders that want firms to refrain from competitively trying to expand market share because those shareholders have holdings in rival firms. It is implausible that influencing horizontal competitors to refrain from such capacity increases would not count as using stock to lessen competition.

Again, the legal literature has only gotten stronger since my article, with the Areeda/Hovenkamp treatise now expressly stating:

> a court's finding that the acquisition would probably tend substantially to lessen competition would necessarily mean that the acquirer so intended, objectively speaking. Consequently, its acquisition could not be solely for investment…. No general warrant exists for treating an institutional investor differently from other investors, and particularly not if the institutional investor votes its shares or otherwise seeks to influence a corporation's decision making. Even index funds often seek to influence the behavior of corporations in which they have an ownership interest…. In the event that such an acquisition is deemed to threaten sufficient anticompetitive results to satisfy the statutory effects clause, it should be illegal under §7.[87]

Fourth, Rock and Rubinfeld question my point that the courts have so far held the passive investor exception to be met only in cases where the investor effectively committed not to vote the acquired stock. But they admit such a commitment was made in *Tracinda*.[88] They claim that in *Anaconda* the acquirer, Crane, "made no commitments on how it would vote

80 Areeda & Hovenkamp, Antitrust Law ¶1203.

81 Rock & Rubinfeld, supra note 20, at 23.

82 Elhauge, supra note 2, at 1305-07.

83 Areeda & Hovenkamp, Antitrust Law ¶1203c.

84 Rock & Rubinfeld, supra note 20, at 23.

85 Clayton Act § 7, 15 U.S.C. § 18 (emphasis added).

86 Rock & Rubinfeld, supra note 20, at 35.

87 Areeda & Hovenkamp, Antitrust Law ¶1204b.

88 Rock & Rubinfeld, supra note 20, at 19, 23.

its shares."[89] But in fact the *Anaconda* court expressly relied on the fact that "Crane in open court agreed to amend this stipulation to include a prohibition against Crane's voting any Anaconda shares so as to bring about a substantial lessening of competition."[90] They also ignore the fact that a commitment not to vote was relied on in the *Gillette* case.[91]

Fifth, Rock and Rubinfeld reject my point that "even purely passive investors are liable for actual anticompetitive effects" based on their claims that my reading conflicts with the plain statutory language and that I cited "no authority in support of this reading."[92] In fact, I explained at length why the statutory language compelled my reading and cited several authorities for it.[93] Since then, the legal literature is even more contrary to their claim because the Areeda/Hovenkamp treatise now expressly agrees with my conclusion, stating:

> horizontal shareholding is reachable under §7 where the threat to competition is present…. One might think that such acquisitions may be immunized by the Clayton Act's 'investment only' exception if they are completely passive. As ¶1204 shows, however, the investment-only exception is really no 'exception' at all to the extent that any transaction or holding that threatens competitive harm fails to qualify.[94]

Baker's Concerns. Professor Baker acknowledges that horizontal shareholding could be anticompetitive and that my proposed antitrust remedy could be effective, but raises various concerns.[95] None, I think, prove telling.

He begins with the premise that my proposal would result in horizontal shareholdings being "summarily condemned" whenever the MHHI and ΔMHHI were sufficiently high.[96] His premise is mistaken. As I stated, my proposal was instead that the agencies should "investigate horizontal stock acquisitions that have created, or would create, a ΔMHHI of over 200 in a market with an MHHI over 2500, in order to determine whether those horizontal stock acquisitions raised prices or are likely to do so."[97] Baker argues that my analysis creates a presumption that is "nearly irrebuttable in practice" because a successful efficiency defense is unlikely.[98] But that does not follow. As discussed in Part IV, while high MHHI and ΔMHHI levels do indicate a likelihood of anticompetitive effects, defendants could under my approach always show that inference is not merited given the facts of their specific case. They do precisely the same now for mergers with high HHI and ΔHHI levels. Indeed, in every allowed merger with high HHI and ΔHHI levels, the defendants have relied on grounds other than efficiencies to successfully rebut the inference that anticompetitive effects were likely. So an efficiency defense has so far never been decisive in a U.S. merger case, yet no one believes this means the presumption created by high HHI and ΔHHI levels is nearly irrebuttable.

Baker then raises various concerns.[99] First, he argues that horizontal shareholders might sometimes also have vertical investments in suppliers or purchasers that would be harmed by reduced competition between the horizontally-related firms. But if horizontal shareholders have investments in suppliers or purchasers, those investments are also likely to be horizontal across competing suppliers and purchasers, so the shareholders would benefit from anticompetitive effects at multiple levels. Moreover, a large share of any firm's input supply will necessarily come from labor or small businesses, and any overcharge to corporate purchasers will mainly be passed on downstream to consumers. Because horizontal shareholders

89 Id. at 23.

90 *Anaconda Co. v. Crane Co.*, 411 F. Supp. 1210, 1218 (S.D.N.Y. 1975).

91 Elhauge, supra note 2, at 1306 n.191.

92 Rock & Rubinfeld, supra note 20, at 24.

93 Elhauge, supra note 2, at 1305-08.

94 Areeda & Hovenkamp, Antitrust Law ¶1203c.

95 Baker, supra note 66, at 214.

96 Id. at 224.

97 Elhauge, supra note 2, at 1303.

98 Baker, supra note 66, at 224.

99 Id. at 225-31.

have no investments in labor, consumers or small business suppliers, horizontal shareholders will on balance benefit from anticompetitive effects, even if some share of the anticompetitive harm were visited on other firms in which they were invested. In any event, if the horizontal shareholders could show that, in a specific case, no anticompetitive effects were likely given the shareholder incentives created by their vertical investments, then their horizontal shareholding would be legal under my approach.

Second, Baker observes that firms may operate in multiple markets, only some of which are harmed by horizontal shareholding. True, but the same issue exists for mergers of multi-market firms, and the answer is that Clayton Act Section 7 is violated by anticompetitive effects in "any line of commerce." Given this statutory language, the Supreme Court has held that anticompetitive harm in any market suffices to condemn an acquisition, even if other markets are unharmed or even benefited.[100]

Third, Baker argues that my approach will sometimes fail to condemn common shareholding that induces firms not to enter each other's markets, given that the very lack of entry may prevent the shareholdings from becoming horizontal. It is a nice point, but the only example he gives is the airline industry, for which reducing actual horizontal shareholdings would likely solve the problem. Nor is it clear how one could legally address the issue he raises of *potentially* horizontal shareholding. In any event, his point at most suggests my approach does not go far enough. Whether or not we cannot devise a legally administrable method for tackling concerns about potentially horizontal shareholding, failing to do so certainly provides no reason to allow actual horizontal shareholdings that are anticompetitive.

Fourth, Baker argues that my approach may insulate anticompetitive horizontal shareholding if, after a stock acquisition, a firm enters another market in a way that now makes that shareholding horizontal. If so, his point would again suggest my approach does not go far enough. But actually he is incorrect that my approach would insulate stock acquisitions that become anticompetitive due to post-acquisition changes. My article specifically took the opposite position.[101] My position is supported by the Areeda/Hovenkamp treatise, which observes that:

> changed circumstances may render unlawful the continued holding of noncontrolling stock whose original acquisition was lawful…. [C]ontinued holding of stock violates §7 if a current acquisition would do so. This conclusion is clearest when the anticompetitive threat results from subsequent active use of the acquired stock, but it is not limited to that case.[102]

Fifth, Baker argues that horizontal shareholders may raise efficiency defenses that he concludes should be rejected. I agree with him that the posited efficiencies are likely weak because avoiding horizontal shareholding (a) need not sacrifice any significant diversification or liquidity benefits, and (b) will actually improve corporate governance because institutional investors will acquire larger shares of the corporations in which they invest. Indeed, I made both points in my article.[103] But the possibility that bad efficiency defenses might be offered provides no reason to avoid condemning anticompetitive horizontal shareholding. If, to the contrary, any of these efficiency defenses prove meritorious and cognizable in a particular case, they would be admissible defenses under my approach.

Sixth, he argues that the empirical proof of anticompetitive effects may not be validated in industries other than airlines and banking. But the economic proofs about the incentive effects created by horizontal shareholding provide strong economic reasons to think the same sorts of effects are likely in other industries. Further, we now have new studies empirically confirming, across all industries, a general connection between horizontal shareholding and (a) anticompetitive forms of executive compensation, and (b) anticompetitive gaps between corporate investment and profits. In any event, my approach would simply investigate horizontal shareholdings that create high MHHI and ΔMHHI levels. If anticompetitive effects are

100 *United States v. Philadelphia Nat'l Bank*, 374 U.S. 321, 370–71 (1963).

101 Elhauge, supra note 2, at 1309.

102 Areeda & Hovenkamp, Antitrust Law ¶¶ 1203e, 1204.

103 Elhauge, supra note 2, at 1303-04, 1314-15.

disproven in any particular case, then my approach would not counsel for any antitrust liability.

The One Percent Solution. Posner, Scott Morton and Weyl agree with me that Clayton Act Section 7 bans horizontal shareholding that has anticompetitive effects.[104] But they argue for replacing my case-by-case approach with federal guidelines providing that "no institutional investor invested in more than a single (effective) firm in an oligopoly may own more than one percent of the industry or communicate with its managers."[105] I see various problems with their recommendation.

To begin with, federal guidelines cannot avoid the need for case-by-case adjudication. Such guidelines can help determine when the federal agencies bring cases, but when they do the courts will require them to show that the horizontal shareholdings in that case substantially lessen competition in order to prove a Clayton Act violation. Posner, Scott Morton, and Weyl argue that an FTC rule could be adopted. But the FTC's authority to issue rules on competition matters is unsettled and has never been exercised.[106] Nor would an FTC rule or federal guideline prevent states or private parties from bringing actions under Clayton Act or allow the DoJ to avoid the need to prove likely anticompetitive effects in any cases it might bring. Posner, Scott Morton, and Weyl also suggest Congress could legislate their proposed rule, but they admit that is "nearly impossible" in the near term.[107] Waiting for such legislation would thus amount to permitting all the anticompetitive effects of horizontal shareholding for the foreseeable future.

Even if such rulemaking or legislation were possible, it would be inadvisable because their test is quite over-inclusive and under-inclusive. For example, their test would condemn a single horizontal shareholder who holds 5 percent of every firm in a market, but (as noted in Part IV) other non-horizontal shareholdings could mean this single investor's 5 percent horizontal shareholding would produce a low ΔMHHI and unlikely anticompetitive effects. Their test would also, unlike mine, not allow horizontal shareholders to show that special factors make anticompetitive effects unlikely in their case.

As for under-inclusion, their test would immunize multiple horizontal shareholders that have one percent across all firms, even though their own analysis suggests that if five shareholders had one percent stakes in four horizontal competitors, their horizontal shareholdings would create 80 percent of the anticompetitive harm of pure monopoly pricing.[108] Also, because they limit their one percent test to oligopoly markets with a high HHI, they acknowledge their test can miss anticompetitive effects in low-HHI markets if atypical patterns of horizontal shareholding result in high MHHIs, even when the result is perfect monopoly pricing.[109] In contrast, because such cases have high MHHI and ΔMHHI levels and confirmed price effects, they would be correctly condemned under my test.

They argue that, given median management stockholdings of one percent and the most typical pattern of institutional shareholding, a one percent test corresponds fairly well to when ΔMHHI will exceed 200 in an oligopoly market with four equally-sized firms and an HHI of 2500.[110] This means their one percent test does provide a nice rule of thumb in oligopoly markets when other shareholdings are typical, but by the same token it means that one percent will be too high or too low if the other shareholdings are atypical. Rather than deciding cases based on the median/typical shareholding of others, it is more accurate to decide cases based on the actual shareholdings in the relevant case, as courts would require under Clayton Act Section 7.

The essential problem with their approach is that the anticompetitive effects of horizontal shareholding turn on

104 Posner, Scott Morton, & Weyl, *A Proposal to Limit the Anti-Competitive Power of Institutional Investors* at 8-9, 19-20 (March 22, 2017), https://ssrn.com/abstract=2872754.

105 Id. at 46.

106 Elhauge, U.S. ANTITRUST LAW & ECONOMICS 11 & n.11 (2d ed. Foundation Press 2011).

107 Posner, Morton, & Weyl, supra note 104, at 34.

108 Id. at 16 & Figure 2.

109 Id. at 24.

110 Id. at 27-28.

market concentration and the collective impact of the shareholdings of *all* major shareholders in the relevant market. Those anticompetitive effects thus cannot accurately be captured by a test, like theirs, that turns on market concentration and the horizontal shareholding level of only *one* shareholder. One instead needs measures, like MHHI and ΔMHHI, which correctly consider market concentration and the shareholdings of all major shareholders in the market.

They raise two concerns about a test that is based on the shareholdings of all major shareholders.[111] First, such a test can make antitrust liability turn on the later investment decisions of other institutional investors. True, but the stock investments of institutional investors are publicly disclosed and, as noted above and recognized in the Areeda/Hovenkamp treatise, stock acquisitions that were lawful when made can often become unlawful because of subsequent events. Nor does their own test avoid the fact that antitrust liability will turn on later stock transactions. Their first example involves a two percent horizontal shareholder and a ΔMHHI that goes from 130 to 2000 because a non-horizontal shareholder sells its stock. But the two percent shareholder would not fall within their safe harbor, and as they themselves acknowledge, "It seems unlikely a suit against the 2% holder could succeed" when the ΔMHHI was only 130.[112] Thus, under their own approach, this two percent shareholder would go from no liability to liability because of the other shareholder's sale of stock. Another problem they consider is that the first horizontal investor acquiring more than one percent of stock in an industry may create little ΔMHHI or likelihood of anticompetitive effect. To account for this, they suggest that an agency using their one percent test should "pursue a litigation strategy in which it waited for several institutional investors to acquire small stakes and then sue all of them."[113] That strategy effectively means that, under their approach, the first horizontal stock acquisition over one percent would initially not face a risk of antitrust litigation, but would if other similar horizontal acquisitions followed.

Their second concern is that when a high ΔMHHI creates anticompetitive effects, all the major horizontal shareholders who contribute to this high ΔMHHI would be liable, even though changing any individual shareholding might have a small incremental effect on ΔMHHI. But it makes perfect sense for all the major horizontal shareholders who contribute to the anticompetitive effect to be held liable because those anticompetitive effects turn on the collective effect of their horizontal shareholdings. The Supreme Court has long used a similar collective approach to antitrust liability for the anticompetitive effects created when multiple firms use foreclosing exclusive dealing agreements.[114] Likewise, *Leegin* dictates such a collective approach for any oligopoly-facilitating effects created when multiple manufacturers use resale price maintenance.[115] Nor does their test avoid this issue, because in their second example all the shareholders would be liable under their test, even though each shareholder's individual incremental contribution to ΔMHHI is small.[116]

Finally, they argue that investors might have a hard time predicting market definition.[117] That is a valid point, but it applies equally to all approaches and indeed to current merger analysis. It might provide good grounds for agencies to provide advance notification of likely market definitions. But the downside is that those advance notifications might become inaccurate with changing demand and technologies or later be rejected by courts. In any event, if advance notification of market definitions were deemed advisable, it could be used whether one uses (1) their test of condemning any horizontal shareholder with more than one percent of stock in a market with an HHI over 2500, or (2) my proposal to investigate horizontal shareholdings that produce an MHHI over 2500 and ΔMHHI over 200 and condemn them when they seem likely to produce anticompetitive effects.

111 Id. at 9, 20-21.

112 Id. at 20.

113 Id. at 33.

114 F*TC v. Motion Picture Advertising Service*, 344 U.S. 392 (1953); Elhauge, supra note 106, at 343-46.

115 *Leegin Creative Leather Products v. PSKS, Inc.*, 551 U.S. 877, 897 (2007).

116 Posner, Morton, & Weyl, supra note 104, at 20-21.

117 Id. at 21.